BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

In the Matter of:	)	
AMENDMENTS TO 35 ILL. ADM. CODE PARTS 201, 202, AND 212	)	R2023-018 (Rulemaking – Air)

NOTICE OF FILING

To: Attached Service List

PLEASE TAKE NOTICE that today I have electronically filed with the Office of the Clerk of the Illinois Pollution Control Board **MIDWEST GENERATION, LLC'S RESPONSES TO QUESTIONS RECEIVED AT HEARING** and a **CERTIFICATE OF SERVICE**, which are attached and copies of which are herewith served upon you.

Dated: March 1, 2023

Respectfully submitted,

Midwest Generation, LLC

/s/ Sarah L. Lode
One of its Attorneys

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BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

In the Matter of:	)	
AMENDMENTS TO 35 ILL. ADM. CODE PARTS 201, 202, AND 212	)	R2023-018 (Rulemaking – Air)

MIDWEST GENERATION, LLC'S
RESPONSES TO QUESTIONS RECEIVED AT HEARING

Midwest Generation, LLC ("MWG") by its attorneys, ArentFox Schiff LLP, hereby files these responses to certain questions asked of MWG at the public hearing held by the Illinois Pollution Control Board (the "Board") on February 16, 2023.

Question:

> **On page 1 of your pre-filed testimony, you state that MWG's proposal provides an alternative averaging period for demonstrating compliance during times of startup, malfunction, and breakdown (SMB) of the coal-fired boilers at Midwest Generation's Powerton Generating Station.**
>
> **8. If [MWG has opacity monitoring data from Powerton station that illustrate the difference in opacity levels during normal operation and during SMB], please submit this illustrative opacity monitoring data for the affected boilers.**

Response:

Powerton Generating Station ("Powerton") has four coal-fired boilers, supplying steam to two electrical generators. Boilers 51 and 52 serve one generator (Unit 5), and boilers 61 and 62 power the other generator (Unit 6). Emissions from all four boilers exhaust through a common stack, and opacity of the combined exhaust is measured by a Continuous Opacity Monitoring System ("COMS").

Opacity monitoring data for these boilers illustrating the difference in opacity levels during normal operation and during SMB are presented in Exhibits A, B, and C. These data are presented

in a matrix format for days that provide examples of normal operation (no excess opacity), malfunctions that led to excess opacity, and startups that led to excess opacity. Data are presented in a matrix format, in which each row represents a single hour, and each column represents a 6-minute period within that hour. For example, the period for "0" hours and "0-5" minutes represents the data beginning at 12:00 AM up to (but not including) 12:06 AM. Average opacity data for each period is presented as an average as measured by the COMS.

Exhibit A presents opacity data from three days (June 18, 2022, August 8, 2022, and November 19, 2022) that represent normal operation. There were no boiler startups, shutdowns, or opacity exceeding 30% on those days. For additional context regarding opacity during normal operation, note that the average opacity during calendar year 2021, using all valid 6-minute averages, was 7.29%, and the average for calendar year 2022 was 8.65%.

Exhibit B presents opacity data from three days (June 14, 2020, May 12, 2021, and April 30, 2022) during which at least one boiler had a startup that resulted in opacity exceeding 30%. Note that excess opacity does not occur with every boiler startup.

Exhibit C presents opacity data from three days (April 4, 2022, April 8, 2022, and August 9, 2022) during which malfunction resulted in opacity exceeding 30%. Note that excess opacity does not occur with every boiler or control equipment malfunction.

Question:

> **On page 7 of your pre-filed testimony, you note that under MWG's proposal, demonstrating compliance "would be accomplished for a given six-minute block period when the Alternative Averaging Period is needed by taking the average opacity measurements from the COMS for those six minutes and the preceding 174 minutes of data."**
>
> **14. Please provide examples using actual opacity monitoring data prior to startup, malfunction, or breakdown that support MWG's contention that the proposed 3-hour averaging time would be necessary to meet the 30 percent opacity limitation during SMB.**

Response:

The data presented support the need for the proposed alternative averaging period. For example, Exhibit B includes a 6-minute opacity exceedance beginning at 13:00 on April 30, 2022, during which opacity averaged 34.56%. A 12-minute averaging period (adding the preceding 6-minute average to the 34.56% value) results in an even higher average of 35.58%. An 18-minute averaging period (*i.e.*, taking the average of the 13:00 period and the preceding two 6-minute block periods) also exceeds 30%. The same is true for the exceedance presented in Exhibit C for the 6-minute period beginning at 2:42 AM on August 9, 2022, during which opacity measured 32.39%.

Notably, these are just two examples of the need for a longer averaging period. Excess opacity events may last longer or result in higher opacity, thus creating the need for the proposed alternative averaging period. MWG selected a 3-hour averaging period in order to align with its Compliance Assurance Monitoring ("CAM") Plan. It puts an outside limit on authorized opacity exceedance, in contrast to the current regulations and Powerton's Clean Air Act Permit Program ("CAAPP") permit. Consequently, MWG's proposal would not interfere with any applicable requirement concerning attainment and reasonable further progress.

Dated: March 1, 2023

Respectfully submitted,
Midwest Generation, LLC

/s/ Andrew N. Sawula
One of its Attorneys

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Attorneys for Midwest Generation, LLC

CERTIFICATE OF SERVICE

I, the undersigned, certify that on this 1st day of March, 2023:

I have electronically served true and correct copies of Midwest Generation, LLC's Responses to Questions Received at Hearing by electronically filing with the Clerk of the Illinois Pollution Control Board and by e-mail upon each person listed in the attached service list.

My e-mail address is Sarah.Lode@afslaw.com.

The number of pages in the e-mail transmission is 18.

The e-mail transmission took place before 5:00 p.m.

/s/ *Sarah L. Lode*
Sarah L. Lode

Dated: March 1, 2023

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EXHIBIT A

Opacity Matrix

Plant: Powerton
Source: POWERTON
Parameter: 6-Minute OPACINST
Report Period: 06/18/2022 00:00 Through 06/18/2022 23:59 Time Online Criteria: 1

		0-5	6-11	12-17	18-23	24-29	30-35	36-41	42-47	48-53	54-59
06/18/22	0	8.47	8.72	8.93	9.30	8.24	8.87	8.52	8.11	7.86	8.05
	1	8.58	8.43	8.19	8.55	8.25	7.77	7.83	8.16	8.65	8.21
	2	8.08	8.22	8.02	7.81	7.71	8.49	8.06	8.03	7.97	7.81
	3	7.86	7.85	7.99	8.96	7.92	8.38	7.85	7.75	8.15	7.79
	4	8.30	7.79	8.22	8.00	7.42	7.54	7.96	8.13	8.12	7.97
	5	8.05	7.69	7.62	7.63	7.59	11.09 IC	8.16 IC	8.05	7.79	7.70
	6	7.67	7.47	8.09	8.56	7.83	8.06	7.95	7.60	7.61	7.64
	7	8.75	8.02	8.06	7.85	7.65	7.67	7.61	8.23	7.92	7.82
	8	7.93	7.58	7.67	7.54	8.03	8.30	7.70	7.89	7.76	7.26
	9	7.37	7.72	8.10	8.01	7.63	7.80	7.74	7.68	7.71	7.67
	10	8.05	7.63	7.65	7.50	7.54	7.77	7.57	7.87	7.79	7.65
	11	7.58	7.41	7.51	7.50	7.65	7.89	7.57	7.48	7.37	7.45
	12	7.33	7.55	7.66	7.54	7.43	7.39	7.41	7.11	7.21	7.57
	13	7.88	7.58	7.45	7.55	7.36	7.44	7.46	7.64	7.60	7.39
	14	7.49	7.34	7.16	7.17	7.53	7.67	7.38	7.50	7.45	7.29
	15	7.19	7.36	7.64	7.58	7.60	7.40	7.27	7.49	7.71	7.53
	16	7.64	7.72	7.59	7.56	7.48	7.46	7.55	7.72	7.87	7.60
	17	7.65	7.44	7.53	7.48	7.57	7.70	7.71	7.50	7.61	7.47
	18	7.43	7.45	7.90	7.79	7.42	7.74	7.55	7.62	7.63	7.87
	19	7.83	7.60	7.37	7.45	7.48	7.50	7.69	7.85	7.77	7.59
	20	7.40	7.31	7.38	7.89	7.65	7.89	8.18	7.65	7.49	7.22
	21	7.50	7.71	7.74	8.17	7.64	7.70	7.48	7.60	7.65	7.93
	22	8.06	7.66	7.66	7.68	7.50	7.51	7.72	7.89	8.01	7.53
	23	7.60	7.66	7.58	7.69	7.51	7.96	7.79	7.49	7.91	7.52

F = Offline
I = Invalid
T = Out of Control
E = Exceedance
M = Maintenance
C = Calibration
* = Suspect
Greater > 30.49

Opacity Matrix

Plant: Powerton
Source: POWERTON
Parameter: 6-Minute OPACINST
Report Period: 08/08/2022 00:00 Through 08/08/2022 23:59 Time Online Criteria: 1

		0-5	6-11	12-17	18-23	24-29	30-35	36-41	42-47	48-53	54-59
08/08/22	0	8.54	7.62	8.43	8.06	7.58	7.21	7.09	7.24	7.66	7.25
	1	6.77	6.73	6.77	6.66	6.64	7.04	7.28	7.01	6.17	6.16
	2	6.30	6.10	6.20	6.42	6.30	6.73	6.62	6.46	6.07	6.17
	3	6.58	6.48	7.21	7.96	8.19	7.95	7.29	7.50	6.98	6.48
	4	6.58	6.57	7.00	7.70	7.50	8.72	8.52	8.35	8.83	9.20
	5	10.01	9.91	11.33	9.55	9.73	11.48 IC	10.45 IC	12.98	12.52	13.42
	6	16.89	13.58	14.61	12.27	12.70	15.07	13.49	12.06	10.93	10.39
	7	10.14	9.76	10.49	11.08	11.83	12.30	13.01	15.18	16.79	13.38
	8	13.21	12.45	14.63	14.08	11.93	11.48	12.06	13.25	13.75	12.25
	9	12.23	11.72	12.90	14.45	13.28	13.97	12.48	12.97	13.85	13.34
	10	13.06	13.24	13.66	13.91	13.32	13.63	14.00	14.14	13.07	12.71
	11	13.20	12.89	13.85	12.62	11.40	13.33	15.34	14.86	14.34	12.85
	12	15.89	12.66	14.67	13.82	13.30	13.89	13.59	14.43	13.67	13.57
	13	13.39	11.97	12.12	12.05	10.80	10.99	11.44	9.73	9.36	9.57
	14	10.40	9.34	9.30	8.67	9.15	8.56	9.13	9.53	9.77	8.73
	15	8.85	9.18	10.24	9.90	9.37	9.51	9.62	10.10	9.07	9.65
	16	9.42	8.62	9.18	8.87	8.50	8.18	8.24	8.65	9.13	8.91
	17	9.70	9.45	9.30	8.59	7.72	7.89	7.64	7.26	6.95	6.94
	18	7.07	7.43	7.66	7.02	7.34	7.18	7.08	6.99	6.76	6.83
	19	7.12	7.17	6.97	7.31	6.78	6.57	6.73	6.94	7.67	6.59
	20	6.60	6.69	6.88	6.86	6.98	7.28	7.46	7.88	7.62	7.36
	21	7.39	7.44	8.12	9.32	9.46	9.45	9.70	9.59	9.85	9.93
	22	9.32	8.01	9.71	8.56	7.99	7.68	7.98	7.63	7.25	8.28
	23	8.44	8.32	7.75	8.78	8.24	7.85	7.48	7.33	7.01	7.08

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Opacity Matrix

Plant: Powerton
Source: POWERTON
Parameter: 6-Minute OPACINST
Report Period: 11/19/2022 00:00 Through 11/19/2022 23:59 Time Online Criteria: 1

		0-5	6-11	12-17	18-23	24-29	30-35	36-41	42-47	48-53	54-59
11/19/22	0	10.41	9.95	9.88	10.72	13.77	10.24	8.99	10.01	9.65	9.60
	1	9.64	10.46	12.42	9.60	9.16	9.62	9.53	10.30	11.04	11.38
	2	11.31	9.94	9.11	9.20	9.32	10.34	11.10	9.93	10.85	11.08
	3	9.76	11.31	10.94	9.70	10.53	8.88	9.28	9.41	8.64	8.99
	4	7.70	10.53	10.58	9.50	8.50	10.75	9.67	8.74	8.60	9.56
	5	8.20	8.11	7.50	10.38	9.64	11.40 IC	10.26 IC	12.04	9.92	9.80
	6	9.03	10.29	9.64	10.08	10.14	9.66	9.08	10.51	10.60	10.19
	7	9.84	9.75	8.98	8.60	9.94	9.70	10.41	9.28	10.82	9.63
	8	8.01	8.99	8.91	8.05	8.55	7.91	9.85	7.57	8.48	7.60
	9	7.35	7.70	8.21	8.54	9.35	8.89	8.24	7.90	8.34	7.13
	10	7.10	8.87	9.00	8.14	7.11	7.18	7.16	6.53	7.21	8.81
	11	7.65	8.00	7.56	7.74	7.22	7.19	8.29	7.24	6.96	7.31
	12	6.66	6.44	6.16	6.81	6.85	6.14	6.88	7.84	6.57	6.24
	13	6.58	6.73	6.12	6.25	6.45	6.77	6.54	6.94	6.69	6.31
	14	6.04	6.01	6.24	6.79	7.07	6.28	6.87	6.69	6.61	6.47
	15	7.04	7.77	8.10	7.97	7.78	7.54	7.38	7.76	8.04	7.52
	16	8.12	7.53	6.78	7.12	7.21	7.71	6.76	6.67	9.14	7.64
	17	7.28	7.41	8.18	8.24	7.57	8.66	10.10	9.22	8.73	9.45
	18	9.24	8.18	8.29	10.21	9.49	10.34	10.23	9.94	9.72	8.96
	19	9.20	9.99	9.84	11.41	9.95	9.29	10.24	9.62	9.95	8.52
	20	8.99	10.11	8.67	8.94	8.99	10.45	9.85	9.22	9.10	9.72
	21	9.59	8.08	8.91	10.32	9.42	9.13	9.36	9.95	10.57	7.92
	22	8.24	8.66	8.24	7.12	7.23	7.80	9.15	7.51	8.57	8.11
	23	7.66	7.67	7.64	8.16	9.78	10.82	9.65	9.33	10.02	9.56

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Greater > 30.49

EXHIBIT B

Opacity Matrix

Plant: Powerton
Source: POWERTON
Parameter: 6-Minute OPACINST
Report Period: 06/14/2020 00:00 Through 06/14/2020 23:59 Time Online Criteria: 1

		0-5	6-11	12-17	18-23	24-29	30-35	36-41	42-47	48-53	54-59
06/14/20	0	10.31	13.54	10.25	10.25	11.33	10.90	10.88	13.28	14.39	14.11
	1	13.53	13.50	13.33	13.32	12.52	12.32	12.16	12.70	14.02	18.09
	2	20.04	22.70	22.95	30.65 E	22.18	21.55	21.21	23.63	19.08	22.47
	3	21.75	23.99	24.02	22.15	19.03	17.84	20.13	18.29	16.68	18.85
	4	17.95	16.48	17.86	15.01	13.36	14.99	15.03	15.80	19.12	17.69
	5	14.58	13.94	13.51	14.10	14.35	12.79 IC	14.72 IC	14.12	14.17	14.04
	6	12.00	12.41	13.76	13.59	13.17	13.13	11.79	13.20	12.80	12.49
	7	12.68	12.67	12.80	12.43	14.42	13.37	13.80	14.12	13.47	14.56
	8	16.39	15.29	14.26	14.94	14.95	14.32	14.96	15.03	14.27	13.70
	9	13.24	12.77	12.48	13.03	12.60	11.94	12.58	12.75	12.69	12.87
	10	12.57	12.51	12.81	12.57	12.65	12.59	12.52	12.02	12.01	12.12
	11	11.66	11.33	11.44	11.38	11.55	11.32	11.21	11.50	11.29	11.42
	12	11.53	11.84	12.44	12.16	11.39	11.46	11.30	11.71	11.72	12.13
	13	12.80	12.24	12.16	11.84	11.48	11.23	11.18	10.88	10.69	10.79
	14	11.13	11.53	11.48	11.45	11.94	11.85	11.88	11.92	11.84	11.29
	15	11.53	11.41	11.27	11.61	11.59	11.37	11.71	12.22	11.45	11.42
	16	11.53	11.25	11.59	11.67	11.69	11.40	11.32	11.61	11.51	11.39
	17	11.31	10.96	10.73	10.70	10.72	10.79	10.68	10.48	10.56	10.90
	18	10.82	11.15	11.48	11.32	11.54	11.64	11.51	11.56	12.22	11.94
	19	11.45	11.50	11.43	11.54	11.70	11.43	11.69	11.67	11.99	11.99
	20	12.11	12.45	12.42	12.12	12.50	12.29	11.82	12.35	12.72	12.10
	21	12.30	12.68	12.74	12.81	12.88	12.92	13.21	13.31	13.87	12.91
	22	13.14	12.21	12.79	11.90 F	9.19 F	7.92	8.17	8.15	7.48	7.39
	23	7.55	7.70	7.19	6.97	7.19	7.19	9.73	11.02	9.26	8.42

F = Offline
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Greater > 30.49

Opacity Matrix

Plant: Powerton

Source: POWERTON

Parameter: 6-Minute OPACINST

Report Period: 05/12/2021 00:00 Through 05/12/2021 23:59 Time Online Criteria: 1

		0-5	6-11	12-17	18-23	24-29	30-35	36-41	42-47	48-53	54-59
05/12/21	0	9.57	17.52	14.09	16.50	14.33	14.67	12.84	11.19	9.03	9.71
	1	9.54	10.24	11.33	10.30	10.31	8.63	9.97	14.47	13.41	14.61
	2	31.80 E	14.25	12.32	12.02	16.14	13.98	11.57	10.36	10.35	11.32
	3	9.32	8.83	9.35	9.64	10.91	9.56	11.11	11.39	9.78	8.66
	4	11.70	9.48	10.65	9.10	10.62	9.78	10.07	9.37	9.84	10.98
	5	11.97	13.72	13.14	13.26	12.58	12.41 IC	13.87 IC	15.47	16.78	21.20
	6	18.56	19.15	19.12	19.48	18.40	18.16	21.07	19.57	16.37	19.57
	7	18.12	15.93	16.39	18.33	21.02	19.61	17.79	18.40	18.08	18.28
	8	17.20	19.72	16.72	17.54	17.65	16.63	19.21	19.08	18.17	20.67
	9	16.38	17.43	20.46	16.80	18.52	18.31	19.13	16.32	16.30	16.09
	10	18.56	15.32	15.52	15.59	17.19	15.42	16.87	17.55	16.51	29.99
	11	25.13	26.54	26.61	26.16	25.72	22.98	20.33	18.28	16.63	14.37
	12	16.14	17.02	16.69	17.56	18.79	16.57	17.77	16.22	16.64	21.19
	13	14.34	14.72	19.53	17.04	19.72	18.18	19.15	19.08	17.72	17.66
	14	18.16	18.36	18.38	20.04	17.98	19.09	19.60	18.20	17.64	15.05
	15	17.80	18.10	19.57	18.44	18.94	17.58	17.54	18.55	17.12	17.16
	16	16.18	14.47	14.81	13.92	14.20	13.21	13.92	15.07	14.52	13.59
	17	17.41	13.73	13.95	13.60	17.81	16.38	16.75	18.34	20.01	18.97
	18	19.09	16.65	16.70	16.28	21.49	18.73	17.68	14.67	18.03	19.28
	19	18.09	23.00	19.37	19.91	18.67	17.65	16.27	16.70	15.27	14.36
	20	14.44	13.45	13.90	14.84	12.47	12.71	12.25	13.61	11.69	10.91
	21	11.06	10.40	11.48	10.47	10.28	10.22	9.98	10.06	10.16	9.92
	22	9.89	10.05	10.47	10.29	10.51	10.32	10.39	10.82	10.57	10.51
	23	10.36	10.31	9.52	10.05	9.57	9.63	9.52	9.83	9.54	10.84

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Greater > 30.49

Opacity Matrix

Plant: Powerton
Source: POWERTON
Parameter: 6-Minute OPACINST
Report Period: 04/30/2022 00:00 Through 04/30/2022 23:59 Time Online Criteria: 1

		0-5	6-11	12-17	18-23	24-29	30-35	36-41	42-47	48-53	54-59
04/30/22	0	4.51 F	4.51 F	4.49 F	4.50 F	4.49 F	4.50 F	4.49 F	4.48 F	4.52 F	4.66 F
	1	4.70 F	4.67 F	4.58 F	4.55 F	4.51 F	4.48 F	4.44 F	4.45 F	4.45 F	4.44 F
	2	4.43 F	4.42 F	4.45 F	4.44 F	4.43 F	4.42 F	4.44 F	4.43 F	4.43 F	4.42 F
	3	4.42 F	4.41 F	4.43 F	4.41 F	4.42 F	4.42 F	4.43 F	4.41 F	4.46 F	4.94 F
	4	4.97 F	4.82 F	5.03 F	5.22 F	5.32 F	4.68 F	4.77 F	4.47 F	4.45 F	4.45 F
	5	4.45 F	4.45 F	4.45 F	4.44 F	4.44 F	10.00 FC	4.41 FC	4.42 F	4.42 F	4.41 F
	6	4.41 F	4.40 F	4.40 F	4.41 F	4.40 F	4.40 F	4.40 F	4.39 F	4.39 F	4.39 F
	7	4.38 F	4.37 F	4.40 F	4.38 F	4.39 F	4.40 F	4.39 F	4.40 F	4.39 F	4.39 F
	8	4.39 F	4.40 F	4.41 F	4.41 F	4.40 F	4.41 F	4.41 F	4.41 F	4.40 F	4.40 F
	9	4.40 F	4.43 F	4.43 F	4.43 F	4.44 F	4.45 F	4.50 F	4.72 F	4.76	4.67 F
	10	4.58 F	4.52 F	4.48 F	4.46 F	4.46 F	4.45 F	4.44 F	4.44 F	4.41 F	4.43 F
	11	4.43 F	4.42 F	4.42 F	4.43 F	4.43 F	4.42 F	4.43 F	4.44 F	4.44 F	4.44 F
	12	4.45 F	4.45 F	4.45 F	4.46 F	4.45 F	4.47 F	4.49	14.77	23.81	36.60 E
	13	34.56 E	16.78	11.84	10.21	8.15	7.09	6.88	6.32	6.06	5.88
	14	5.99	5.62	5.57	5.58	5.26	5.14	5.17	5.14	5.00	5.08
	15	5.14	5.07	4.94	4.91	4.94	5.01	5.11	5.20	4.99	4.71
	16	4.71	4.72	4.68	4.71	4.79	4.80	4.74	4.72	4.75	4.71
	17	4.72	4.74	4.76	4.77	4.75	4.71	4.74	4.71	4.70	4.80
	18	5.60	5.75	6.06	5.86	5.93	5.79	5.90	5.91	5.69	5.63
	19	5.62	5.70	8.49	8.70	8.67	8.96	8.92	9.21	10.28	9.58
	20	8.85	9.46	8.57	7.70	7.59	7.45	7.42	7.36	7.50	7.59
	21	11.81	7.96	7.85	7.97	7.91	7.77	7.49	6.53	6.09	5.96
	22	6.02	5.92	5.87	5.81	5.65	5.39	5.24	5.27	5.17	5.02
	23	5.05	5.09	5.01	4.92	4.86	4.89	4.84	4.84	4.87	4.90

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Greater > 30.49

EXHIBIT C

Opacity Matrix

Plant: Powerton
Source: POWERTON
Parameter: 6-Minute OPACINST
Report Period: 04/04/2022 00:00 Through 04/04/2022 23:59 Time Online Criteria: 1

		0-5	6-11	12-17	18-23	24-29	30-35	36-41	42-47	48-53	54-59
04/04/22	0	8.89	9.23	8.75	9.11	11.07	9.08	9.68	8.45	8.27	9.03
	1	8.54	8.20	8.01	8.57	9.33	8.53	11.06	8.89	9.32	9.23
	2	9.08	8.84	9.00	8.33	8.66	8.32	9.09	8.14	8.38	8.32
	3	10.93	8.09	8.33	10.28	9.06	9.03	9.11	11.42	9.61	10.03
	4	9.33	8.75	8.58	8.49	8.61	9.29	10.15	9.66	8.72	8.02
	5	8.01	8.16	8.17	8.39	8.46	11.75 IC	10.12 IC	9.55	8.65	8.68
	6	8.63	10.57	11.17	9.39	10.17	9.27	9.86	10.06	9.26	9.61
	7	8.66	8.71	9.22	8.99	9.35	9.91	10.16	9.17	9.07	10.56
	8	9.26	10.28	9.89	10.35	12.81	11.73	12.33	13.31	11.83	12.33
	9	13.33	13.76	17.06	15.31	16.81	14.39	13.13	14.96	16.49	18.27
	10	17.18	21.18	21.72	18.17	19.28	22.45	21.32	18.41	15.14	18.48
	11	18.88	21.41	20.87	20.02	21.13	21.35	18.81	20.98	19.90	18.00
	12	17.20	17.77	26.12	24.66	20.21	18.52	19.51	18.90	17.18	19.83
	13	18.29	22.92	29.29	24.70	27.97	22.14	22.10	21.31	22.05	19.84
	14	22.67	28.66	23.63	22.14	31.11 E	27.13	25.34	23.63	25.68	23.59
	15	23.05	23.41	23.74	23.31	26.27	23.35	24.49	23.11	22.71	32.97 E
	16	26.57	21.22	19.82	19.58	26.39	21.62	19.95	17.82	23.24	14.45
	17	22.02	21.39	19.16	23.75	19.79	20.82	17.39	29.97	20.94	18.66
	18	19.65	19.24	21.69	23.72	20.31	19.70	20.26	18.73	19.25	20.39
	19	18.97	18.42	18.65	19.72	20.61	19.79	23.02	23.50	16.08	18.90
	20	18.45	20.79	17.41	17.26	15.40	18.59	20.51	26.08	20.14	22.06
	21	19.21	16.02	18.18	19.68	19.98	20.51	20.94	15.36	19.67	15.35
	22	23.38	16.41	20.35	24.23	18.00	17.88	21.03	19.59	17.03	16.67
	23	21.72	24.77	22.16	18.52	15.40	16.99	14.95	19.42	20.82	16.22

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Opacity Matrix

Plant: Powerton
Source: POWERTON
Parameter: 6-Minute OPACINST
Report Period: 04/08/2022 00:00 Through 04/08/2022 23:59 Time Online Criteria: 1

		0-5	6-11	12-17	18-23	24-29	30-35	36-41	42-47	48-53	54-59
04/08/22	0	17.71	19.47	30.43	24.56	22.19	22.38	20.80	22.16	26.05	23.51
	1	19.94	23.98	24.95	22.07	27.24	18.07	21.56	22.63	24.09	23.42
	2	22.25	22.12	21.62	20.56	21.19	26.70	23.04	22.47	18.86	32.75 E
	3	24.89	25.31	22.61	31.10 E	23.70	22.43	14.93	17.13	17.85	17.70
	4	17.88	20.36	19.08	16.59	15.57	16.86	20.43	18.11	21.62	24.03
	5	25.25	18.88	16.47	18.40	16.96	15.00 IC	20.51 IC	19.87	18.85	16.09
	6	19.40	15.13	32.19 E	22.90	18.08	18.35	19.85	15.98	17.40	17.91
	7	22.02	17.91	24.64	19.16	21.84	20.00	18.14	15.67	24.34	21.72
	8	16.54	15.63	15.34	20.84	20.28	17.12	15.49	17.98	14.35	14.24
	9	13.36	15.13	26.45	18.42	19.13	16.11	22.51	14.75	13.90	16.00
	10	18.17	13.53	15.54	13.47	16.28	14.87	16.93	13.70	24.06	13.60
	11	15.22	12.72	12.43	16.27	16.27	17.32	15.09	19.21	15.74	14.85
	12	13.09	12.56	22.56	15.81	16.00	12.82	14.96	11.74	16.51	17.22
	13	18.80	16.84	20.04	20.18	21.41	21.43	19.31	23.03	16.40	24.94
	14	19.95	17.97	18.94	13.78	13.33	13.04	14.69	13.69	12.31	10.29
	15	11.64	11.45	14.19	13.99	13.91	9.35	11.06	9.88	11.52	11.21
	16	12.62	12.01	11.34	14.05	15.06	15.12	14.62	15.87	17.77	15.76
	17	14.74	14.47	16.19	27.48	23.81	18.99	17.13	22.46	23.99	16.54
	18	14.04	16.55	22.98	27.27	17.32	19.50	22.69	17.50	31.24 E	18.86
	19	18.12	16.36	27.71	18.00	18.09	19.96	17.51	18.23	17.14	15.75
	20	16.41	19.88	20.43	20.51	18.07	19.46	19.58	20.00	23.17	16.14
	21	19.95	18.82	24.87	18.76	18.55	15.81	22.32	19.45	17.88	16.11
	22	28.44	17.72	17.29	15.47	17.41	17.17	17.79	22.90	17.26	15.97
	23	17.25	17.91	16.08	22.55	19.04	19.40	17.91	17.00	21.54	14.79

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Opacity Matrix

Plant: Powerton
Source: POWERTON
Parameter: 6-Minute OPACINST
Report Period: 08/09/2022 00:00 Through 08/09/2022 23:59 Time Online Criteria: 1

		0-5	6-11	12-17	18-23	24-29	30-35	36-41	42-47	48-53	54-59
08/09/22	0	6.76	6.58	7.01	8.33	7.47	7.19	7.36	6.40	6.20	6.09
	1	6.59	6.31	6.29	6.30	6.50	6.14	5.96	5.86	5.96	6.15
	2	6.10	5.89	5.89	6.15	5.84	5.96	55.64 E	32.39 E	22.16	16.47
	3	14.69	16.58	15.63	14.47	16.61	22.24	16.28	13.79	9.65	9.96
	4	11.44	11.65	11.06	9.91	11.53	10.29	9.34	10.43	9.99	12.17
	5	10.82	11.09	12.15	12.09	13.25	11.81 IC	12.83 IC	12.30	11.80	12.90
	6	11.79	11.46	12.63	12.16	12.36	13.58	13.14	12.41	10.51	10.67
	7	11.11	11.82	12.32	12.30	12.83	13.01	10.58	9.68	11.15	11.90
	8	10.55	11.25	10.71	9.44	9.26	10.28	10.68	10.91	11.03	11.96
	9	20.82	16.59	13.93	14.44	13.04	12.00	11.09	10.55	11.25	11.49
	10	11.17	10.89	10.79	10.22	9.34	9.83	9.30	9.18	23.02	18.00
	11	17.19	18.04	17.51	17.03	16.87	16.62	18.82	19.81	21.47	20.87
	12	21.59	19.25	19.71	17.96	16.71	17.11	18.00	17.03	17.47	17.54
	13	17.17	16.50	15.81	17.40	15.54	16.11	16.12	20.57	16.55	16.75
	14	15.42	16.02	14.08	15.26	14.72	14.38	15.07	14.75	16.71	13.47
	15	13.54	14.54	16.14	16.37	16.12	20.74	14.29	13.64	13.83	15.22
	16	13.86	13.28	13.75	15.52	14.69	14.61	14.52	15.07	15.04	14.74
	17	15.17	14.97	13.47	13.76	13.68	17.00	15.42	13.31	14.83	14.28
	18	12.80	13.75	15.71	16.17	15.51	15.34	13.94	14.08	16.68	16.20
	19	14.09	13.34	12.57	11.86	10.57	10.83	10.58	9.27	9.53	8.96
	20	9.79	8.12	7.93	11.53	8.99	9.08	8.92	8.59	8.79	7.74
	21	7.51	7.88	10.92	9.90	10.45	14.01	12.37	11.21	10.00	10.47
	22	12.02	11.22	12.79	13.30	11.94	10.41	8.81	8.00	8.04	8.08
	23	8.07	7.48	7.61	8.19	7.28	7.75	9.58	8.50	7.62	7.37

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