BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

In the Matter of:	)	
	)	
AMENDMENTS TO 35 ILL. ADM. CODE PARTS 201, 202, AND 212	)	R2023-018(A) (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 the **SUPPLEMENTAL PREFILED DIRECT TESTIMONY OF STEPHEN K. NORFLEET** and a **CERTIFICATE OF SERVICE**, which are attached and copies of which are herewith served upon you.

Dated: March 22, 2024

Respectfully submitted,

Dynegy Midwest Generation, LLC;
Illinois Power Generating Company; and
Kincaid Generation, LLC

Midwest Generation, LLC

/s/ Samuel A. Rasche
One of their Attorneys

Joshua R. More
Amy Antoniolli
Samuel A. Rasche
ARENTFOX SCHIFF LLP
233 South Wacker Drive, Suite 7100
Chicago, Illinois 60606
(312) 258-5500
Joshua.More@afslaw.com
Amy.Antoniolli@afslaw.com
Sam.Rasche@afslaw.com

Andrew N. Sawula
ARENTFOX SCHIFF LLP
One Westminster Place, Suite 200
Lake Forest, Illinois 60045
(847) 295-4336
Andrew.Sawula@afslaw.com

Attorneys for Dynegy & Midwest Generation

CERTIFICATE OF SERVICE

I, the undersigned, certify that on this 22nd Day of March, 2024:

I have electronically served true and correct copies of the Supplemental Prefiled Direct Testimony of Stephen K. Norfleet 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 sam.rasche@afslaw.com.

The number of pages in the e-mail transmission is 35.

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

/s/ *Samuel A. Rasche*
Samuel A. Rasche

Dated: March 22, 2024

Joshua R. More
Amy Antoniolli
Samuel A. Rasche
ARENTFOX SCHIFF LLP
233 South Wacker Drive, Suite 7100
Chicago, Illinois 60606
(312) 258-5500
Joshua.More@afslaw.com
Amy.Antoniolli@afslaw.com
Sam.Rasche@afslaw.com

Andrew N. Sawula
ARENTFOX SCHIFF LLP
One Westminster Place, Suite 200
Lake Forest, Illinois 60045
(847) 295-4336
Andrew.Sawula@afslaw.com

SERVICE LIST	
Illinois Pollution Control Board Don Brown don.brown@illinois.gov Tim Fox Tim.fox@illinois.gov Chloe Salk Chloe.salk@illinois.gov 60 E. Van Buren St., Suite 630 Chicago, IL 60605	**Illinois Environmental Protection Agency** Gina Roccaforte Gina.roccaforte@illinois.gov Dana Vetterhoffer dana.vetterhoffer@illinois.gov 1021 North Grand Avenue East P.O. Box 19276 Springfield, IL 62794
Office of the Attorney General Molly Kordas molly.kordas@ilag.gov Ann Marie A. Hanohano annmarie.hanohano@ilag.gov 69 West Washington Street, Suite 1800 Chicago, IL 60602 Jason E. James Jason.James@ilag.gov 201 West Point Drive, Suite 7 Belleville, IL 62226	**Illinois Department of Natural Resources** Renee Snow - General Counsel renee.snow@illinois.gov One Natural Resources Way Springfield, IL 62702
IERG Kelly Thompson kthompson@ierg.org 215 E. Adams St. Springfield, IL 62701	**HeplerBroom LLC** Melissa S. Brown Melissa.brown@heplerbroom.com Alec Messina Alex.Messina@heplerbroom.com 4340 Acer Grove Drive Springfield, IL 62711
Faith E. Bugel fbugel@gmail.com 1004 Mohawk Rd. Wilmette, IL 60091	**Environmental Law and Policy Center** David McEllis dmcellis@elpc.org 35 E. Wacker Drive, Suite 1600 Chicago, IL 60601
Greater Chicago Legal Clinic, Inc. Keith I. Harley kharley@kentlaw.edu 211 West Wacker Drive, Suite 750 Chicago, IL 60606	**McDermott, Will & Emery** Mark A. Bilut mbilut@mwe.com 227 West Monroe Street Chicago, IL 60606-5096

U.S. EPA – Region 5 Michael Leslie leslie.michael@epa.gov Ralph H. Metcalfe Federal Building 77 West Jackson Blvd. Chicago, IL 60604	**ArentFox Schiff LLP** David M. Loring David.Loring@afslaw.com Alex Garel-Frantzen Alex.Garel-Frantzen@afslaw.com 233 South Wacker Drive, Suite 6600 Chicago, IL 60606
Sidley Austin LLP Byron F. Taylor bftaylor@sidley.com John M. Heyde jheyde@sidley.com One South Dearborn Suite 900 Chicago, IL 60603	

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SUPPLEMENTAL PREFILED DIRECT TESTIMONY OF STEPHEN K. NORFLEET

1. My name is Stephen K. Norfleet, and I am presenting testimony in this matter on behalf of Dynegy Midwest Generation, LLC; Illinois Power Generating Company; and Kincaid Generation, LLC (collectively, "Dynegy") and Midwest Generation, LLC (hereinafter "MWG" or "Midwest Generation") (together with Dynegy, the "Companies"). I am a Professional Engineer and Senior Project Manager at Agora Environmental Consulting.

2. I am presenting this supplemental testimony in support of the Companies' joint proposal for a narrowly tailored amendment to 35 Ill. Adm. Code Part 212 to establish alternative emission limitations for their remaining coal-fired boilers during periods of startup, malfunction, and breakdown (hereinafter, the "Joint Proposal"), which was filed in this subdocket on August 7, 2023, as the "Statement of Reasons of Dynegy and Midwest Generation," as modified in the Companies' Second Response to Illinois Environmental Protection Agency's Comments, filed in this subdocket on March 15, 2024.

3. In support of the Joint Proposal, I previously prepared and submitted an initial Technical Support Document ("TSD"), filed with the Board on August 7, 2023, and a Supplemental TSD, filed with the Board on March 15, 2024. I also presented prefiled testimony on March 15, 2024, incorporating the Supplemental TSD.

4. I have now prepared and am incorporating into my testimony a Second

Supplemental TSD, which is attached as Exhibit 1. The Second Supplemental TSD was also submitted as an exhibit to the Companies' Final Comment in Response to Illinois Environmental Protection Agency's Comments, filed with the Board on March 22, 2024.

5. This concludes my testimony.

Dated: March 22, 2024

EXHIBIT 1

agora AGORA ENVIRONMENTAL CONSULTING

SECOND SUPPLEMENTAL TECHNICAL SUPPORT DOCUMENT

for

STATEMENT OF REASONS OF DYNEGY AND MIDWEST GENERATION

In the matter of:

AMENDMENTS TO 35 ILL. ADM. CODE PARTS 201, 202, AND 212

R2023-018A

March 22, 2024

Stephen K. Norfleet. P.E.
Agora Environmental Consulting

P.O. Box 40754, Raleigh, NC 27629 • (919) 510-5102 • www.agoraenvironmental.com

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I. Summary

Dynegy Midwest Generation, LLC, Illinois Power Generating Company, and Kincaid Generation, LLC (collectively, "Dynegy"), and Midwest Generation, LLC ("MWG") (together with Dynegy, the "Companies") asked Agora Environmental Consulting ("Agora") to evaluate the impact of the alternative emission limitations ("AELs") that they are proposing to address opacity during Startup, Malfunction, and Breakdown ("SMB") in light of the Illinois Pollution Control Board's ("IPCB's") decision to remove provisions that allow operation during SMB from the Illinois Administrative Code ("IAC"). Agora previously prepared an initial Technical Support Document ("TSD"), filed with the Board on August 7, 2023, and a Supplemental TSD, filed on March 15, 2024,[1] which addressed certain questions raised by the Illinois Environmental Protection Agency ("IEPA") during its review of the initial TSD. This Second Supplemental TSD provides a comprehensive update to the initial TSD, reflecting changes made to the Companies' proposed AELs, incorporating the substance of the Supplemental TSD, and addressing additional questions raised by IEPA.

The proposed AELs would apply to each of the Companies' remaining coal-fired boilers at the following facilities: Baldwin Energy Complex, I.D. No. 157851AAA ("Baldwin"), located at 10901 Baldwin Road, Baldwin, Illinois (Randolph County); Kincaid Power Station, I.D. No. 021814AAB ("Kincaid"), located on Route 104, four miles west of Kincaid, Illinois (Christian County); Newton Power Station, I.D. No. 079808AAA ("Newton"), located at 6725 North 500th Street, Newton, Illinois (Jasper County); and Powerton Generating Station, I.D. No. 179801AAA ("Powerton"), located at 13082 East Manito Road, Pekin, IL (Tazewell County). While the opacity standards are a small component of the state implementation plan ("SIP") to address the particulate matter ("PM") national ambient air quality standards ("NAAQS"), the AELs that the Companies are proposing will provide a large margin of compliance with applicable SIP PM limitations and will not increase PM emissions. Moreover, because the AELs will not result in an increase in allowable emissions of any pollutant (even when compared with allowable emissions under the revised state regulations, following the SMB repeal), they will not negatively impact the State's ability to attain and maintain compliance with any NAAQS, nor would they negatively affect any prior NAAQS modeling.

Simply put, the proposed AELs will not impact the emissions of any criteria pollutants in a manner that might "interfere with any applicable requirement concerning attainment and reasonable further progress" or other Clean Air Act ("CAA") requirements that would need to be addressed under CAA § 110(l). In contrast, removal of the SMB provisions without an AEL could trigger operators to terminate startups or malfunctions abruptly and then begin startup all over again, which could have the unintended consequence of increasing emission rates of other pollutants.

[1] The Supplemental TSD was misdated March 8, 2023. The actual date of the Supplemental TSD was March 15, 2024.

II. Background

Historically, emission limits for sources in Illinois have been set based on standards that have been demonstrated to be achievable with the appropriate emission controls under normal operating conditions. See, e.g., Opinion and Order of the Board (Apr. 13, 1972), *In the Matter of: Emission Standards*, R1971-023 (adopting Sections 201.261–201.265 (then Rules 105(b)–(f)) and Section 212.124 (then Rule 202(c)). However, such limits may not be achievable during unusual or transient operation during periods of SMB. The Companies, like many other source operators in Illinois, have relied on permit provisions established pursuant to 35 IAC §§ 201.149, 201.261, and 201.262 to allow them to operate their units with opacity above applicable standards during SMB periods. The authorization under these provisions, commonly referred to as SMB exceptions (see, e.g., 35 IAC § 212.124(a) ("Exceptions" to Visible Emissions Limitations)), requires sources to minimize SMB related emissions or opacity but allows operation above applicable standards during SMB periods.

Now, the IPCB has removed the provisions in the IAC that authorize SMB exceptions. However, the IPCB has not proposed to address the issue that the standards were developed for normal operation and were not designed to address the transient nature of the source emissions and control equipment operation during SMB periods.

To address the issue, the Companies are proposing to continue to use opacity as an indicator of PM control performance and to use the same opacity percent limits that are otherwise applicable to each unit, but simply demonstrate compliance in a manner consistent with their Clean Air Act Permitting Program ("CAAPP") permits during SMB periods. Specifically, the Companies are proposing that for any 6-minute period during SMB for which average opacity exceeds 20% or 30%, as applicable[2], the Companies will demonstrate compliance with that opacity standard during that 6-minute period based on opacity readings averaged over a period of up to one hour for the Baldwin coal-fired boilers and up to three hours for the coal-fired boilers at the other stations beginning with the six-minute period in excess of the applicable standard. The use of one- or three-hour average opacity values is consistent with (and, in the case of one-hour average opacity, more restrictive than) the underlying Illinois SIP PM standards as well as the approach that the Companies have used in the compliance assurance monitoring ("CAM") plans under 40 CFR Part 64 to demonstrate a reasonable assurance of compliance for their coal-fired boilers with the applicable SIP PM standards.

A. <u>Illustrative Examples of Implementations of Proposed AELs</u>

For illustration purposes, suppose Newton Unit 1 spikes up to 40% opacity (over its 20% opacity limit) for a six-minute period related to an SMB event but then operates for the remainder of the three-hour period consistently at 15% opacity (under its regular 20% opacity limit). If the six-minute period in question does not occur during SMB, the data would be treated as an exceedance of the 20% standard in 35 IAC § 212.122(a), assuming no other exception applies.

[2] The Newton coal-fired boiler is subject to the 20% standard in 35 IAC § 212.122(a), and the Baldwin, Kincaid, and Powerton coal-fired boilers are subject to the 30% standard in 35 IAC § 212.123(a).

Under the proposed AEL, operating above the 20% threshold for a six-minute period during an SMB period would trigger the source to evaluate compliance under the AEL. As shown in Figure II.1, the opacity average during the six-minute period in question and the six-minute opacity values measured during the following 174 minutes is 15.8%, which would be below the 20% limit and deemed allowable under the proposed AEL.

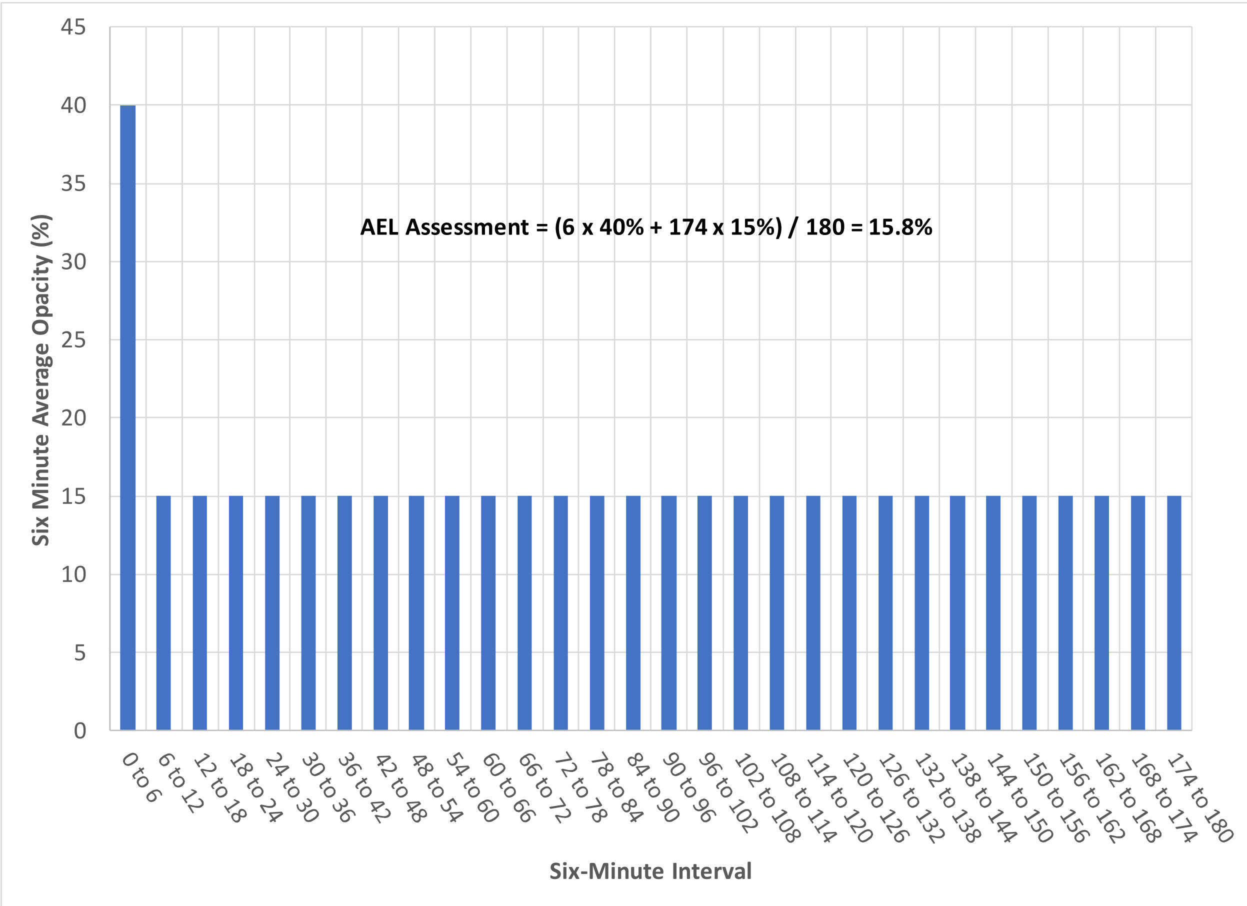

Figure II.1. Newton AEL Example – In Compliance

However, if the opacity spikes higher or lasts for a longer period, a source might also exceed the proposed AEL. For example, suppose again that Newton Unit 1 spikes up to 40% opacity for seven (7) six-minute periods related to an SMB event and then operates consistently at 15% opacity afterwards as shown in Figure II.2. The average of six-minute opacity values for the three-hour period starting with the first six-minute period during the SMB when the opacity exceeded the standard would be 20.8%, which would be above the 20% limit and considered an exceedance under the proposed AEL.

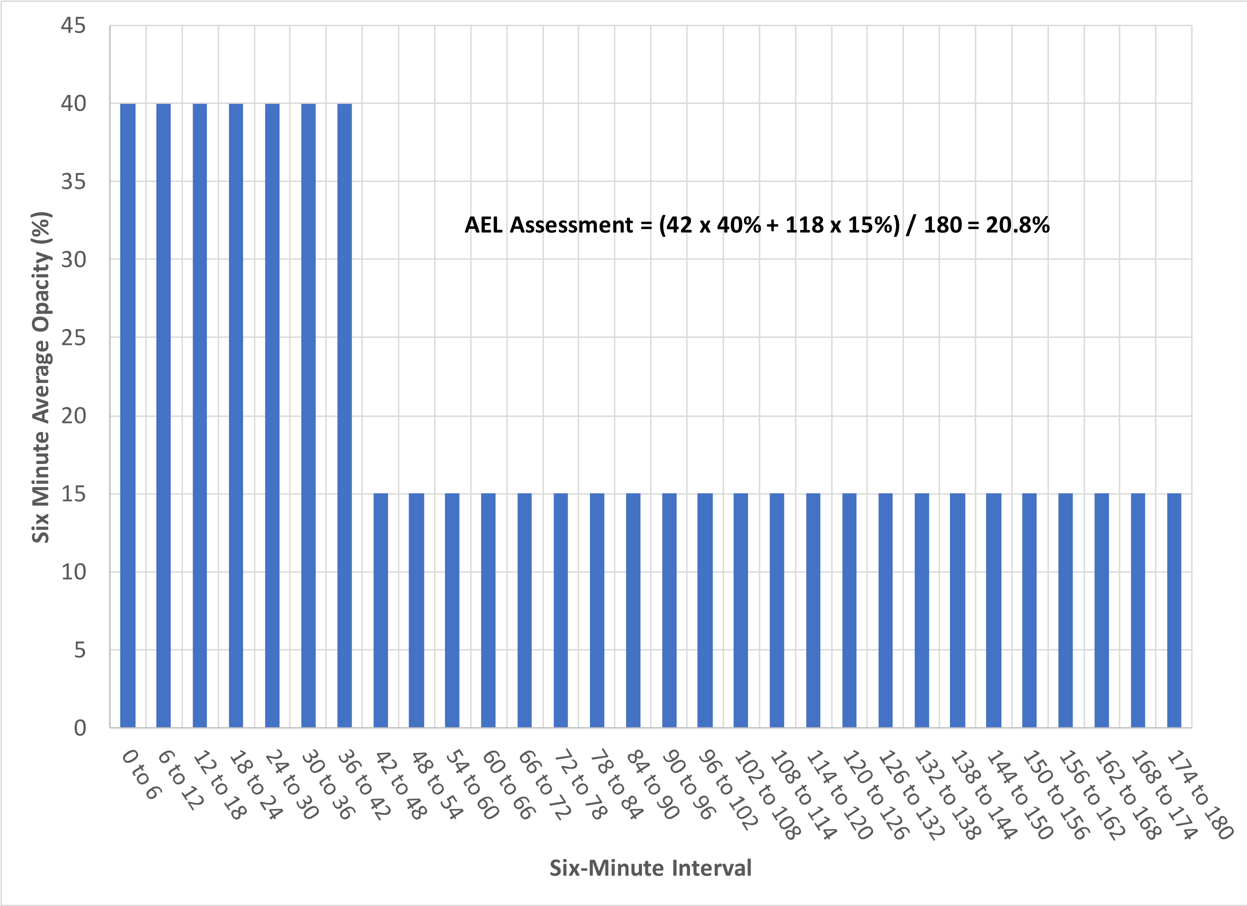

Figure II.2. Newton AEL Example – Exceedance

III. Analysis/Potential Impact

A. <u>Opacity is an Indicator for PM Emissions.</u>

Opacity is not a pollutant or an emission. Rather, it is an *indicator* for PM emissions. As the Illinois Environmental Protection Agency ("IEPA") explained in its February 27, 2018, Statement of Basis for the Baldwin CAAPP permit:

> For purposes of air pollution control, opacity is the degree to which the transmission of light through the exhaust from an emission unit is reduced by the presence of particulate in the exhaust. In simpler terms, it is the "obscuring power" of the exhaust, expressed as a percent. As particulate in the exhaust from an emission unit acts to interfere with the passage of light through that exhaust, the level of opacity from an emission unit is indicative of the level of particulate in the exhaust. Accordingly, opacity readily serves as an indicator of PM emissions and the performance of PM control devices.

B. Agora Developed Unit-Specific PM:Opacity Correlations.

Because opacity is not a pollutant or emissions but an indicator for PM, Agora developed correlations relating the opacity to the PM emissions from each unit to determine whether the AELs will increase PM emissions and to quantify any such increase. This correlation approach is consistent with the technique used by many electric utility sources for the CAM rule under 40 CFR Part 64. The underlying basis for the approach is that the attenuation of light measured by an opacity monitor is a function of Lambert's Law, which can be expressed mathematically by the following equation:

$$O = 1 - e^{\frac{-S_{avg} m_{avg} x}{4}}$$

Where: O = opacity of flue gas
S_{avg} = specific surface area of the particles (m^2/g)
m_{avg} = particulate mass concentration (g/Nm^3)
x = optical path length (m)

Presuming that the particle size distribution and specific surface area of the particles remain relatively similar, the PM concentration will (at least as a first-order approximation) vary proportionally with opacity. Therefore, while opacity is not a direct measurement of PM, it can be used as a surrogate, and using opacity as a CAM indicator for PM is considered presumptively acceptable under §64.3(d) for the purpose of providing a reasonable assurance of compliance under that rule. Presuming the particulate characteristics remain approximately the same, Agora likewise proposes that the opacity and PM correlations serve as a reasonable approach for providing a rough estimate of the potential impact the Companies' AEL will have on PM emissions.

Unit specific opacity to PM correlations are shown in Figures III.1-III.5 for each of the Companies' coal-fired boilers in Illinois based on both EPA Method 5 performance test data and test data collected using the modified version of Method 5 prescribed by the Mercury and Air Toxics Standards ("MATS") Rule. In theory, one might argue that the higher filter temperature associated with the MATS variant of Method 5 Rules could result in lower PM concentration values, but the differences are negligible in practice because there are no significant emissions from the boilers that are condensable between the two temperatures, and the differences between the two methods would be expected to be within the noise of the measurements. However, for Newton Unit 1 and Kincaid Units 1 and 2, the inclusion of the MATS Method 5 data is useful, at least for comparison purposes, because the data illustrate the correlation over a broader range of PM and opacity values.

Notwithstanding this data compatibility, in order to introduce an added layer of conservativeness to my analysis, I analyzed the Method 5 and MATS Method 5 data separately and then selected the data set that yielded the higher PM correlation (that is, the data set that would predict higher PM emissions at a given opacity value) to determine subsequent emission estimations. In the figures below, the MATS-Method 5 data and associated correlations are shown in blue, and the Method 5 data and associated correlations are shown in orange.

For Newton Unit 1, the correlations were developed from the PM test data collected to develop the unit's CAM plan in 2016 (using MATS Method 5) and Method 5 performance tests conducted in 2019 and 2022, with the recent tests showing much lower PM concentrations. For Kincaid Units 1 and 2, which share a common stack, and for Baldwin Unit 1, the PM correlation was developed based on PM test data performed during the most recent tests conducted to demonstrate compliance with the MATS Rule in 2018 and 2021 and Method 5 performance test data from 2018 and 2020.[3] For Baldwin Unit 2, the PM correlation was developed based on the PM test data collected in conjunction with the relative response audit ("RRA") and response correlation audit ("RCA") tests that were performed in 2018 – 2022 and Method 5 performance test results from 2018 and 2021. While the PM emissions data from Baldwin Units 1 and 2 generally show more variability, I believe the correlations provide a reasonable approximation for the purpose of this evaluation. For Powerton Units 5 and 6, the PM correlation was developed based on the PM test data collected for the Performance Specification 11 (PS-11) tests performed in 2018 and the most recent RRA test in 2022 (using MATS Method 5) and the CAM test data collected in 2016 (using Method 5).

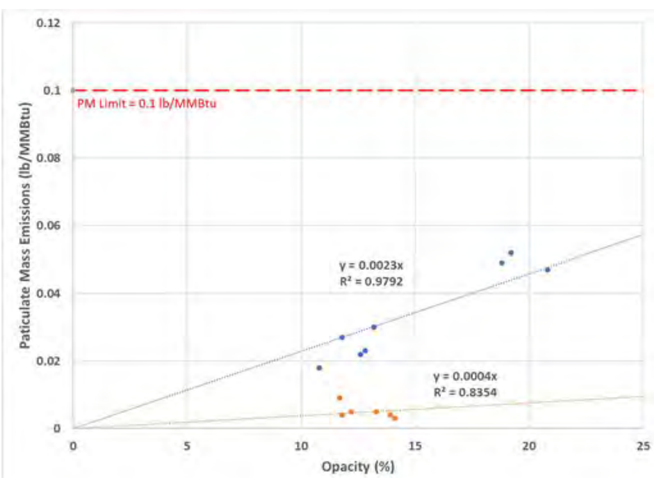

Figure III.1. Newton Unit 1 Opacity vs. PM Correlation

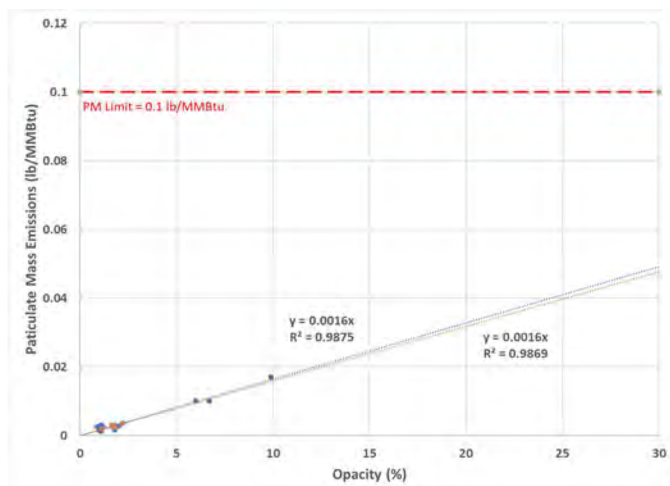

Figure III.2. Kincaid Units 1 and 2 (Common Stack) Opacity vs. PM Correlation

[3] Baldwin 1 and Kincaid Units 1 and 2 qualify as low emitting electric generating units under the MATS Rule.

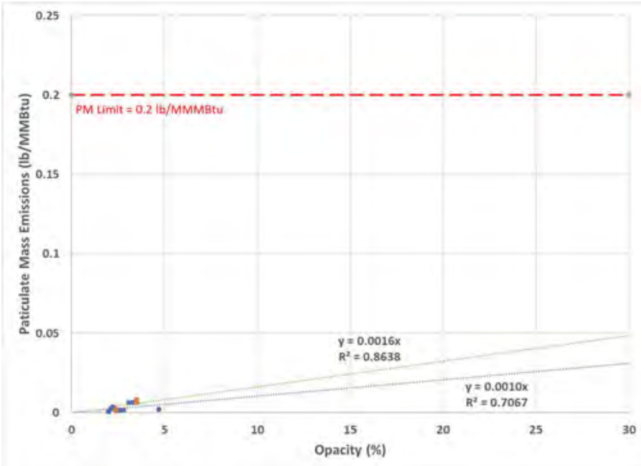

Figure III.3. Baldwin Unit 1 Opacity vs. PM Correlation

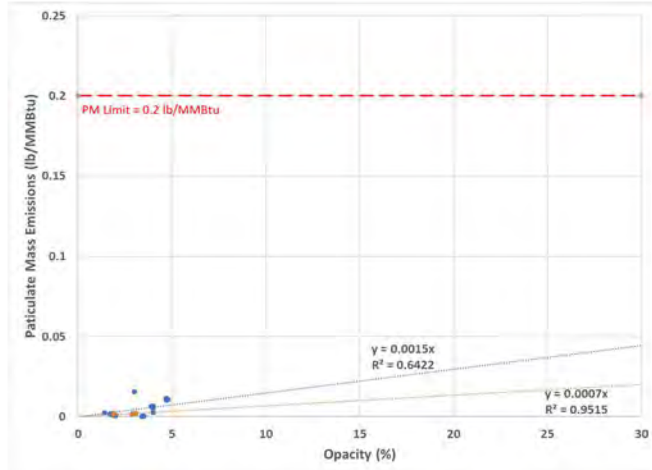

Figure III.4. Baldwin Unit 2 Opacity vs. PM Correlation

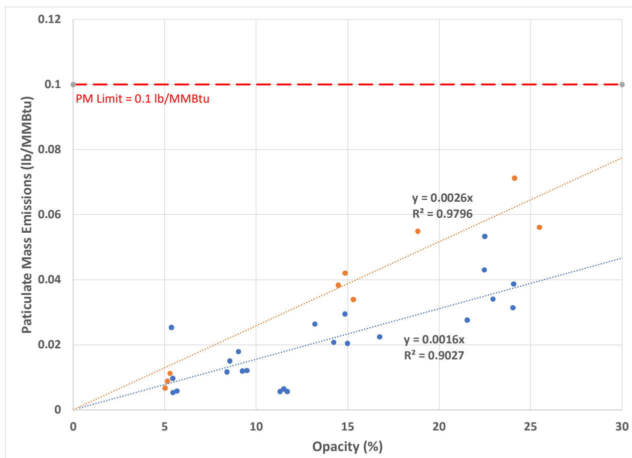

Figure III.5. Baldwin Units 5 and 6 Opacity vs. PM Correlation

C. Proposed AELs are More Stringent than SIP PM Limits.

As illustrated in the preceding figures and shown in Table 1, the correlations (even using the more conservative data set for each boiler—i.e., the data set resulting in a higher estimate of PM emissions) indicate that the PM emissions would be well below the Illinois SIP PM limits even when operating at their opacity limits.[4] The data indicate that Baldwin Units 1 and 2 would be less than a quarter of their SIP PM limit of 0.20 lb/MMBtu when operating at 30%

[4] The Baldwin and Kincaid boilers are also subject to lb/MMBtu PM limits initially established through federally enforceable consent decrees and ultimately incorporated into each facility's Clean Air Act Permit Program permit. Those limits are lower than the SIP limits. The Baldwin Consent Decree limit is 0.015 lb/MMBtu based on a three-hour average of PM data; the Kincaid Consent Decree limit is 0.030 lb/MMBtu based on a six-hour average of PM data. Both of those averaging periods are longer than the averaging period in the proposed AELs (one-hour average opacity for Baldwin and three-hour average opacity for Kincaid). Compliance with the AELs would not affect the ability (or requirement) to continue complying with the Consent Decree PM limits.

opacity. Kincaid Units 1 and 2 would be about half their SIP PM limit of 0.1 lb/MMBtu when operating at 30% opacity. Newton Unit 1 would be at less than half of its SIP PM limit of 0.1 lb/MMBtu when operating at 20% opacity (or less than 10% of the limit based on a correlation of more recent Method 5 test results).[5] Powerton Units 5 and 6 would be 22% below their SIP PM limit of 0.1 lb/MMBtu when operating at 30% opacity.

Table 1. Estimated PM Emissions at Opacity Limit

	SIP PM Limit[6]	**Opacity Limit**	**PM Correlation[7] x = % Opacity (lb/MMBtu)**	**PM Emission Rate at Opacity Limit**	**% of PM Limit**
Baldwin Unit 1	0.20 lb/MMBtu	30%	0.0015x	0.045 lb/MMBtu	23%
Baldwin Unit 2	0.20 lb/MMBtu	30%	0.0016x	0.048 lb/MMBtu	24%
Newton Unit 1	0.1 lb/MMBtu	20%	0.0023x	0.046 lb/MMBtu	46%
Kincaid Units 1&2	0.1 lb/MMBtu	30%	0.0016x	0.048 lb/MMBtu	48%
Powerton Boilers 51/52 and 61/62	0.1 lb/MMBtu	30%	0.0026x	0.078 lb/MMBtu	78%

A three-hour averaging period for opacity provides the best indication of compliance with the Illinois SIP hourly PM limits. The CAM plans for each of these units utilize three-hour averages of opacity (rolled on an hourly basis) to assess compliance with the Illinois SIP hourly PM limits. This is because, while the PM limits apply on an hourly basis, "35 IAC 212.110 provides that compliance with the applicable PM standard is based on emissions testing. Since emissions testing for PM includes at least three test runs, each nominally one-hour in duration, this indicates that a three-hour averaging period is an appropriate averaging time for purposes of

[5] The Newton boiler is also subject to a 0.10 lb/MMBtu limit pursuant to 40 C.F.R. § 60.42(a)(1).

[6] Under 35 IAC 212.203 for Baldwin Units 1 and 2, under 35 IAC 212.204 for Newton Unit 1 and Kincaid Units 1 and 2, and under 35 IAC 212.202 for Powerton Boilers 51/52 and 61/62.

[7] The "PM Correlation" in Table 1 reflects the more conservative of the correlations developed for each unit based on the available Method 5 and MATS Method 5 data as shown in Figures 1-4. Equations in the table represent the relationship between the PM and opacity for each unit based on the respective correlation, where x is the percent opacity (as a numeric value rather than a fraction of 100%). For example, for Baldwin Unit 1, the correlation based on the test data is PM lb/MMBtu = 0.0015(% Opacity). So, at 30% opacity, the estimated PM emission rate would be PM lb/MMBtu = 0.0015(30) = 0.0045 lb/MMBtu.

CAM."[8,9]

D. Supplemental Analysis of PM:Opacity Correlations Based on PM CEMS Data

The reference method data used to develop the PM:Opacity correlations for each unit/stack reflected a range of PM and opacity values that represented typical operation as well as, in some cases, elevated emissions at or near the opacity limit. The correlations show that PM will remain well below the applicable SIP emission limitation provided that the average opacity is below the applicable opacity limitation. However, during a stack test, it is impossible to replicate the full range of emissions that might occur during SMB events, and the data used in the correlation, thus, only reflected a portion of range of PM emissions.

During initial discussions of the correlation results, IEPA asked if PM continuous emissions monitoring system (CEMS) data was available to provide an indication of whether the correlations would remain representative when the opacity is above the limit, and the Companies asked Agora Environmental Consulting to analyze the available PM CEMS data to provide a response to IEPA's request. While not installed on all the affected units that Agora assessed in the initial TSD, PM CEMS are installed and operated at Kincaid and Powerton[10] in accordance with federally enforceable Consent Decree requirements. At each of these facilities, the respective company installed the PM CEMS on the common stack shared by two units (i.e., on Kincaid Units 1 and 2 and on Powerton Units 5 and 6) and certified the equipment in accordance with EPA Performance Specification 11.

For Kincaid and Powerton, Figures IV and V show the PM and opacity correlations (illustrated in the previous section by Figures III.2 and III.5) super-imposed with PM CEMS and opacity data representing all one-minute operating periods in 2022 when the opacity exceeded 30%. The new "extended correlations," shown in green, are based on the one-minute PM CEMS data during operating periods when the opacity was above 30%. The green points in Figures IV and V represent the one-minute data used to develop the extended correlations with only the one-minute values with PM concentrations below 0.02 lb/MMBtu excluded as outliers (shown in yellow). Since the opacity standards are assessed on a six-minute basis, the one-minute incidents, standing alone, do not reflect opacity exceedances. Similarly, the one-minute PM

[8] July 14, 2016 Statement of Basis for the Planned Issuance of a Revised Clean Air Act Permit Program (CAAPP) Permit Through Reopening and Significant Modification and a Revised Acid Rain Program Permit for Illinois Power Generating Company Newton Power Station. IEPA provided more detailed explanations for this same conclusion in additional permitting documents. *See, e.g.,* pp.56-58 of the February 27, 2018, Statement of Basis for the Baldwin CAAPP permit.

[9] The one-hour average period for Baldwin provides a more conservative (i.e., more restrictive) indication of compliance with the Illinois SIP hourly PM limit than the limit itself, as a one-hour average of opacity is utilizing only one-third of the data that would be available under a Method 5 stack test.

[10] PM CEMS are also operated at the Baldwin Energy Complex ("Baldwin"); however, those boilers have not exceeded the applicable opacity standard. So, little or no one-minute data are available to provide a meaningful estimate of the emissions at higher levels.

values do not reflect PM exceedances, including because the SIP PM standards are expressed as hourly standards, and compliance is determined using Reference Method 5 stack tests, which require an average of at least three hours of data.[11] The one-minute PM data simply represent the PM CEMS responses during these brief periods when the opacity response exceeded 30%. By their nature, the one-minute data reflect short-term, transient events and illustrate a large degree of variability due to the variety of conditions that the events represent, drift associated with the measurements, and potential other uncertainties. Notwithstanding the variability, the data on average show good agreement with the PM correlation results based on the reference method data.

Kincaid's PM CEMS results are illustrated in Figure IV, which shows not only excellent agreement with both the Method 5 and MATS Method 5 correlations, but also reasonable agreement between those test-based results and the projected correlation at higher opacities based on the one-minute PM CEMS data. For Powerton (illustrated by Figure V), the 2016 CAM test results diverge from the more recent MATS Method 5 test data, but the earlier CAM tests were performed prior to completion of the installation of dry sorbent injection systems and electrostatic precipitator upgrades. Testing performed after the installation of those systems and upgrades reflects a lower ratio of PM:Opacity, as represented by the lower sloped line on the correlation graph. As expected, the new extended correlation based on the PM CEMS data for opacity values above 30% more closely aligns with the more recent MATS related data.[12]

Notwithstanding the high degree of scatter in the one-minute data, the PM CEMS data suggest that, on average, the correlations developed based on the reference method data at lower opacities will continue to provide a reasonable approximation of PM emissions at higher opacity levels. Because the same roughly linear relationship holds true at higher opacities, short-term variability in opacity will not disproportionately elevate the PM emissions over any given averaging period. As indicated above, correlations show that compliance with the PM limits will be maintained when the AELs are applied, provided that the average opacity during the applicable averaging period is below the respective opacity standard. Because the relationship is roughly linear, any periods when the opacity may have been above the standard (with proportionately higher PM) would be offset by periods when the opacity was below the standard (with proportionately lower PM), so long as the one-hour (for Baldwin) or three-hour (for other stations) average opacity does not exceed the applicable opacity standard. In other words, these correlations predict that PM emissions would be the same irrespective of whether six-minute opacity values are steady or fluctuate above and below the applicable limits, so long as the average opacity meets the applicable AEL. This means that such short-term variability in opacity would have no impact on 24-hour or annual national ambient air quality standards and would have no impact on compliance with the state PM limitations.

[11] The PM CEMS are not used to demonstrate compliance with applicable PM standards.

[12] Notwithstanding, as discussed in the following section, Agora used the higher of the two correlations (the separate correlations based on the standard Method 5 and MATS-Method 5 data) to be conservative in its analysis.

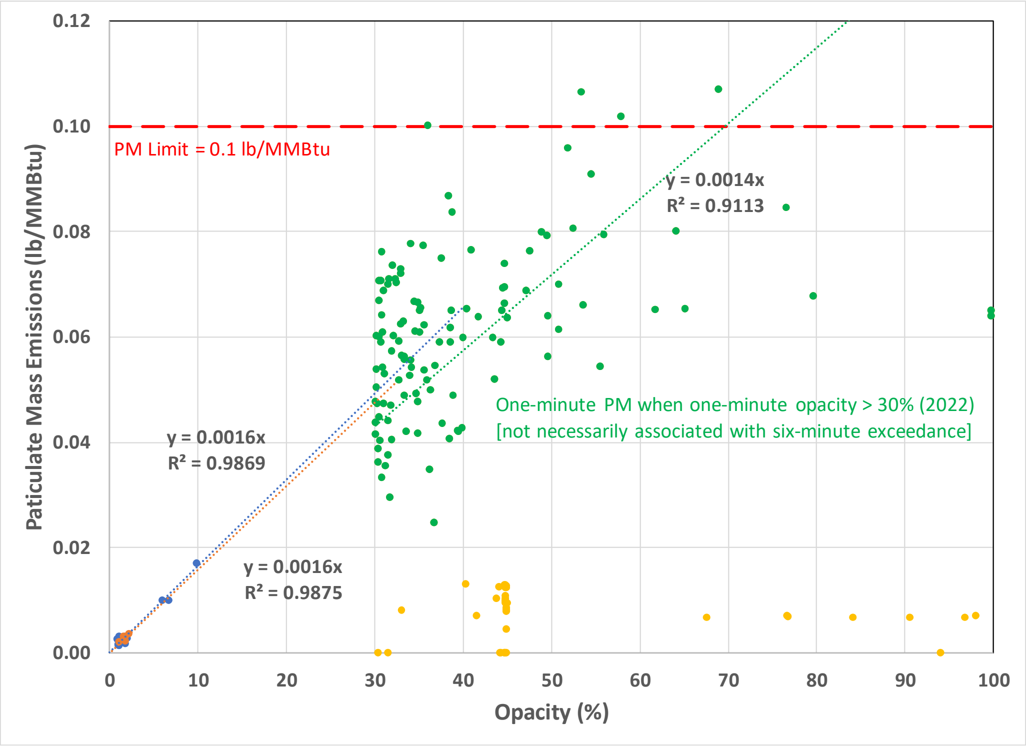

Figure IV. 2022 Kincaid One-Minute Opacity and PM CEMS Data (Opacity > 30%)

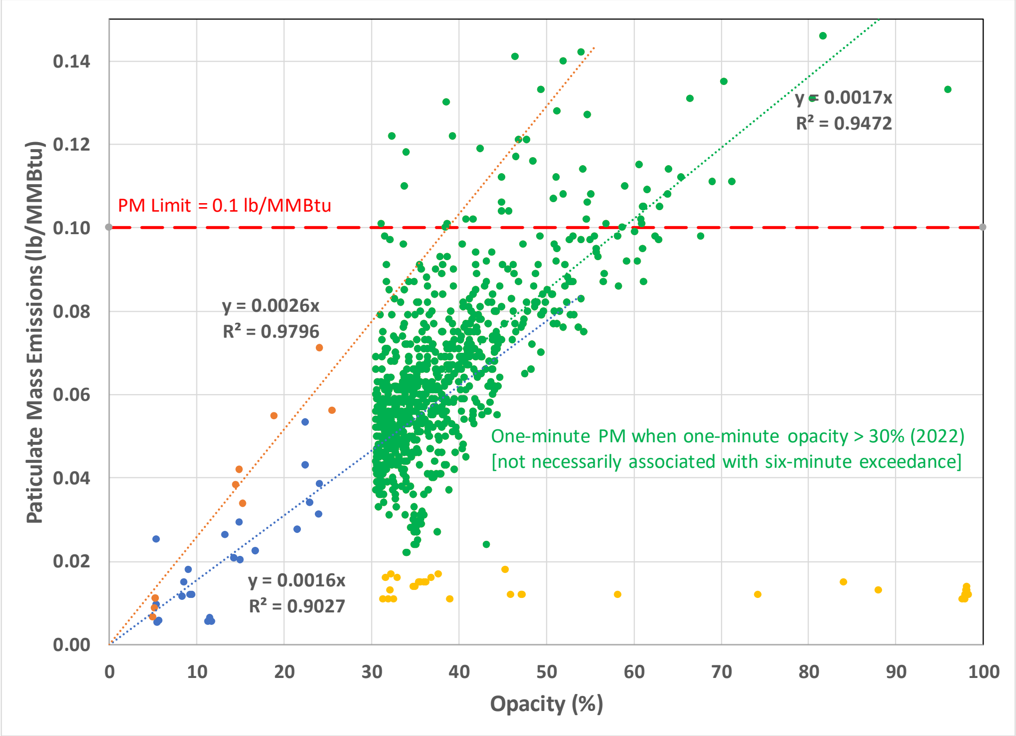

Figure V. 2022 Powerton One-Minute Opacity and PM CEMS Data (Opacity > 30%)

E. Agora's Analysis is Consistent with Illinois EPA's CAM Determinations.

While in some cases the current assessment followed a more conservative approach, the conclusions from the correlation analysis are similar to the determinations made by the State when assessing the CAM plans. The current findings were reached using more recent data, which suggests consistency in the results. Furthermore, as mentioned previously, although one would expect the differences between Method 5 and the MATS variant of Method 5 to be negligible, our analysis assessed separate correlations for the two methods and used the more conservative of the two.[13]

For its evaluation of CAM indicators for the Illinois SIP PM standards, the state determined in each case that operation at the opacity limit provided a wide margin of compliance with the PM limit and that a reasonable assurance of compliance with the PM standard would be maintained by demonstrating that opacity remained below the limit over an averaging period corresponding to the amount of time needed to conduct a performance test. For Newton, IEPA evaluated Unit 1 and (now retired) Unit 2. IEPA concluded that "the test results indicate that the PM emissions of the boilers at 20 percent opacity are less than 50 percent of the applicable state PM emission limits, i.e., 0.1 lb/mmBtu for each boiler."[14] For Kincaid, the IEPA indicated "for the state limit, at 30 percent opacity, the analysis of test results indicates that the compliance margin of the boilers would be approximately 25 percent compared to the applicable emission limit of 0.1."[15]

For Baldwin Units 1 and 2, the opacity and corresponding PM emissions are typically very low, and the performance test data reflected a very limited range of the potential PM emissions. "To confirm a good correlation between opacity and PM emissions," Illinois EPA based its determination of the CAM indicator limit for both units on PM test data collected from Unit 2 where the PM was elevated by ash re-injection (a.k.a. "spiking") during Performance Specification 11 correlation testing.[16] While the testing range was only about 6% opacity during the elevated PM runs, in conjunction with the PM emissions during performance testing conducted under normal conditions showing a mere fraction of the PM limit ("only about 3.5 percent of the applicable state standard") at 5% opacity, the Illinois EPA determined it was "reasonable to use 30 percent opacity as the indicator value."[17]

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[13] The Method 5 data were higher in two cases and MATS Method 5 data were higher in the other two cases.

[14] *Statement of Basis for Planned Changes to CAAPP Permit No. 95090066 And Planned Issuance of a Revised Acid Rain Permit. Newton Power Station*, ID No. 079808AAA, July 14, 2016, p. 24.

[15] *Statement of Basis for Planned Changes to CAAPP Permit No. 95090078 And Planned Issuance of an Acid Rain Permit*. Kincaid Power Station, ID No.: 021814AAB, July 21, 2016, p. 24.

[16] The use of ash re-injection tends to produce conservative correlation results for opacity or light scattering-based PM CEMS because the ash tends to agglomerate, and the larger particles will create less opacity (or light scattering) for a given mass concentration.

[17] *Statement of Basis for Planned Changes to CAAPP Permit No. 95090026 And Planned Issuance of an Acid Rain Permit*. Baldwin Energy Complex, ID No. 157851AAA, February 27, 2018, p. 54.

For Powerton boilers 51/52 and 61/62 (comprising Units 5 and 6), PM testing was conducted using low, mid and high opacity values, with test runs ranging from about 5% to 25% opacity. Illinois EPA summarized the results of this testing as follows: "at 30 percent opacity, the analysis of test results indicates that the compliance margin of the boilers would be approximately 18 percent compared to the applicable emission limit of 0.1 lb/mmBtu."[18]

F. The AELs Will Not Result in Higher Allowable Hourly PM Emissions.

The AELs do not change *any* applicable standard or other emission limitation that currently applies to PM or any other pollutant.

As noted above, opacity is an *indicator* for PM emissions, but opacity is not, itself, a pollutant. Nonetheless, as the analysis above shows, the Companies' proposed AELs are set at a level that assures compliance with the applicable Illinois SIP hourly PM limits—meaning that, when these units operate at 20% or 30% opacity, as applicable, for three-hour periods (or one-hour for Baldwin), their PM emissions would be lower than (and compliant with) the applicable Illinois SIP PM limits on a lb/MMBtu basis. This conclusion holds true irrespective of whether a three-hour period (or one-hour for Baldwin) includes one or more six-minute periods of opacity higher than 20% or 30%, so long as the three-hour opacity average (or one-hour for Baldwin) remains at or below 20% or 30%, as applicable.

G. The AELs Will Not Interfere with Attainment, Reasonable Further Progress, or Any Other Clean Air Act Requirement.

The proposed AELs will not impact the emissions of any criteria pollutants in a manner that might "interfere with any applicable requirement concerning attainment and reasonable further progress" or other Clean Air Act (CAA) requirements that would need to be addressed under CAA § 110(l).

While the proposed approach would assess performance for each 6-minute period during SMB events based on a three-hour (180-minute) average of data (or one-hour for Baldwin), the shortest duration PM NAAQS is a 24-hour standard for PM_{10} and $PM_{2.5}$. The State of Illinois is currently in attainment with the 24-hour and annual PM_{10} and $PM_{2.5}$ NAAQS. Since there is no impact on allowable PM on a one-hour basis, let alone a 24-hour or annual basis, the proposed AELs will have no impact on the State's continued ability to remain in attainment with these PM standards.

The Companies are seeking AELs only for *opacity* during SMB and not for any emissions of any pollutant. In other words, the Companies will not be authorized to exceed any applicable emission limit for any pollutant as a result of promulgating their proposal AELs for opacity. The

[18] *Statement of Basis for the Planned Issuance of a Revised CAAPP Permit Through Reopening and Significant Modification*. Powerton Generating Station, ID No. 179801AAA, August 25, 2016, p. 24.

discussion above illustrates that the proposed alternative for opacity will continue to be an indicator for compliance with the state SIP PM limits and will not have any impact on the PM NAAQS.

Nor will the AELs result in increased emissions of any other criteria pollutant. The PM emissions and associated opacity from the units are controlled via electrostatic precipitators ("ESPs") and, in the case of Baldwin Units 1 and 2, also with fabric filter baghouses. ESPs and baghouses do not affect gaseous pollutants (e.g., VOM, NO_X, SO_2, or CO); consequently, opacity is not correlated with the other gaseous pollutants.[19] For that reason, the AELs will not affect the emissions of any gaseous criteria pollutant, and will have no impact on NAAQS for gaseous pollutants. The only other criteria pollutant is lead. The NAAQS for lead is based on a three-month average of data. Lead is one component of particulate emissions. The AELs would not affect the proportion of lead in the particulates. The relationship between opacity and lead would be limited to the relationship between opacity, on the one hand, and all particulates (including lead), on the other hand. Just as the AELs will not result in any increase in PM emissions, they will not result in any increase in lead emissions. Notably, the Companies are not seeking relief in connection with any limits that apply to those criteria pollutants—or any other pollutants. Thus, there is no concern that the AELs would negatively affect any NAAQS or any other Clean Air Act requirement.

H. Potential Unintended Consequences of Removing SMB Exemptions.

As stated previously, the opacity standards were developed to address normal operation and were not designed in consideration of the unusual or transient events during SMB periods. If the Companies cannot rely on the AELs to allow operation during SMB events, one could envision that the Companies might shut down a unit in the midst of a startup or malfunction in response to short-term opacity exceedances that they cannot immediately resolve by other means. Such a response could force a unit into a repetitious loop of aborted startups, resulting in lost power generation, reduced reliability, and potential damage to the coal-fired boilers. Such operating practices would mean that the boilers would be operating in "startup" mode rather than in regular operation for longer periods of time.

Operating in startup mode for longer periods of time would mean that the boilers would operate with higher NO_X and CO_2 lb/MMBtu emission rates for longer periods of time because those rates are higher during startup than during normal operations. The scenario would increase NO_X emission rates for Baldwin and Kincaid because the ammonia injection for the selective catalytic reduction ("SCR") systems used to control NO_X on the Baldwin and Kincaid

[19] Conversely, PM can be influenced by dry sorbent injection or scrubber operation. However, in these cases, the operation of the other controls may impact PM rather than the PM affecting the control of the other emissions. On the Companies' coal-fired boilers in Illinois, the PM controls (ESPs or baghouses) are downstream of the other emission controls, so operation of the upstream devices would not be affected by the PM controls. With dry scrubbers, once the filter cake develops, any additional control by the sorbent material within the baghouse would be expected even during an SMB event that might cause a PM spike.

units cannot be engaged until the units reach a critical load/flue gas temperature. If a startup period is extended, NO_x emission rates continue at a higher level for a longer period of time. Likewise, the units are much less efficient at low loads, resulting in higher rates of CO_2 emissions in comparison to heat input or power output than the emission rates during normal operation. To be sure, there are times when a shutdown could be required under the Companies' proposed AELs; however, the absence of authorization to operate in excess of standards during SMB could greatly increase the frequency of needing to shut down a boiler in response to an unavoidable opacity exceedance.

I. Air Dispersion Modeling Results.

IEPA requested that the Companies perform air dispersion modeling to assess worst-case emissions assumptions for these coal-fired boilers in relation to the PM_{10} and $PM_{2.5}$ NAAQS. The Companies contracted Trinity Consultants, Inc. (Trinity) to perform such modeling. The results of the air modeling, which was done to verify a similar modeling exercise conducted by IEPA, is documented in the *Air Dispersion Modeling Report – Alternative Emission Limitations for Opacity* (March 22, 2024) prepared by Mr. Tony Schroeder of Trinity (attached as **Exhibit A**). A short summary is provided below.

Trinity conducted its analysis using the current U.S. EPA regulatory model, AERMOD (version 23132), incorporated within Trinity's *BREEZE*™ *AERMOD Pro* software to calculate ground-level concentrations. As discussed in the report, the modeling analysis was completed using base files prepared by the IEPA for each of the four stations with updates to certain model inputs to better reflect the configuration of the facilities.

Trinity modeled two different "worst-case" PM emission rate scenarios. First, Trinity modeled the potential "worst-case" impact of the existing PM standard based on the calculated PM mass emission rates determined using the applicable emission limits during full load operation (at each boiler's nominal maximum heat input). For Newton and Powerton, the PM emission rates were calculated based on the applicable state limit of 0.1 lb/MMBtu. For Baldwin and Kincaid, Trinity calculated the worst-case PM mass emissions based on the respective consent decree (CD) limits of 0.015 lb/MMBtu (based on a three-hour average) and 0.030 lb/MMBtu (based on a six-hour average) because those values are lower than the state PM limits. Second, Trinity modeled "worst-case" scenarios representing the potential impact under the AELs based on the correlated PM emissions rates at the opacity limit (i.e., the values in Table 1) during full load operation (at the nominal maximum heat input). For both scenarios, PM_{10} and $PM_{2.5}$ emission rates were calculated from PM emissions assuming speciation based on U.S. EPA's AP-42 emission factor reference document.

The results of the modeling are summarized in Table 2, with the impacts expressed in terms of a percentage of the applicable National Ambient Air Quality Standard (NAAQS). The results of this modeling demonstration illustrate that potential "worst-case" impacts under either scenario represent a very small fraction of the NAAQS. Note that, because each of the requirements would apply independent of one another (that is, the Companies must comply with their SIP PM limits, the opacity limits (or AELs, when available), and their Consent Decree limits (where applicable)), the lower of the % of NAAQS values on the table for the two modeled scenarios represents the "worst-case" for that facility.

Table 2. "Worst-Case" Air Dispersion Modeling Impact Results

NAAQS Standard		Facility	"Worst-Case" Modeled Impact (% of NAAQS)	
			Full Load Operation at PM Limit	**Full Load Operation at Proposed AEL**
$PM_{2.5}$	24-hr (35 µg/m^3)	Baldwin	0.18%	0.55%
		Kincaid	0.55%	0.88%
		Newton	1.29%	0.59%
		Powerton	1.87%	1.46%
	Current Annual (12 µg/m^3)	Baldwin	0.07%	0.20%
		Kincaid	0.20%	0.32%
		Newton	0.48%	0.22%
		Powerton	0.70%	0.55%
	New Annual (9 µg/m^3)[20]	Baldwin	0.09%	0.27%
		Kincaid	0.27%	0.42%
		Newton	0.63%	0.29%
		Powerton	0.93%	0.73%
PM_{10}	24-hr (150 µg/m^3)	Baldwin	0.44%	1.37%
		Kincaid	0.41%	0.65%
		Newton	1.22%	0.56%
		Powerton	1.34%	1.05%

IV. Conclusions

The evaluation shows that the Companies' proposed AELs will provide a large margin of compliance with applicable Illinois SIP PM standards and will raise no concerns with respect to "attainment and reasonable further progress" or compliance with other CAA requirements under CAA §110(l). Applying the AELs would also avoid the potential unintended consequence of higher NOX and CO2 emission rates, loss of reliability, and potential damage to the boilers that could result from increasing the frequency of immediately shutting down a boiler in response to an unavoidable opacity exceedance.

[20] The new annual PM NAAQS for $PM_{2.5}$ was finalized on March 6, 2024, and will become effective on May 6, 2024.

EXHIBIT A

AIR DISPERSION MODELING REPORT ALTERNATIVE EMISSION LIMITATIONS FOR OPACITY

Midwest Generation, LLC
Dynegy Midwest Generation, LLC
Illinois Power Generating Company
Kincaid Generation, LLC

Prepared By:

Tony Schroeder, CCM, QEP, Principal Consultant
TRINITY CONSULTANTS
Beachwood, OH 44122
(216) 278-0500

Tony Schroeder

March 22, 2024

Project 243602.0028

Trinity Consultants

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1. INTRODUCTION

Trinity Consultants Inc. (Trinity) was contracted by ArentFox Schiff LLP (AFS) to prepare this air dispersion modeling report on behalf of Dynegy Midwest Generation, LLC, Illinois Power Generating Company, and Kincaid Generation, LLC (collectively, "Dynegy"), and Midwest Generation, LLC ("MWG") (together with Dynegy, the "Companies") in connection with R2023-018(A), *In the Matter of: Amendments to 35 Ill. Adm. Code Parts 201, 202, and 212*, pending before the Illinois Pollution Control Board.

The purpose of this modeling analysis is to support rule development for Alternative Emission Limitations (AELs) for Opacity for coal-fired boilers at the four electric generating stations listed below.

- Baldwin Energy Complex (Illinois EPA Facility ID 157851AAA) ("Baldwin")
- Kincaid Power Station (Illinois EPA Facility ID 021814AAB) ("Kincaid")
- Newton Power Station (Illinois EPA Facility ID 079808AAA) ("Newton")
- Powerton Generating Station (Illinois EPA Facility ID 179801AAA) ("Powerton")

Adhering to the *Guideline on Air Quality Models* (40 CFR 51, Appendix W), this modeling analysis is intended to evaluate the magnitude of ambient concentrations of particulate matter associated with operating the coal-fired boilers at varying emission rates.

2. MODEL SETUP / METHODOLOGY

The modeling analysis was completed using base files for particulate matter with aerodynamic diameters less than or equal to a nominal 10 micrometers (PM_{10}) and particulate matter with aerodynamic diameters less than or equal to a nominal 2.5 micrometers ($PM_{2.5}$) prepared by the Illinois Environmental Protection Agency (Illinois EPA) for each of the four stations and provided to AFS on January 22, 2024.[1]

Base Model Review

Trinity reviewed these base files and updated certain model inputs to better reflect the configuration of the facilities. The following parameters were updated compared with the base files prepared by Illinois EPA.

- Baldwin – The meteorological station elevation was updated from 204.8 meters above sea level to 123.4 m above sea level to reflect the elevation of the surface meteorological station used in the modeling analysis for Baldwin. The elevation of the Cahokia St. Louis Downtown Airport was obtained from the National Oceanic and Atmospheric Administration's (NOAA's) Historical Observing Metadata Repository (HOMR) website.[2]
- Newton – The building heights for the buildings included in the base model files were inconsistent between the PM_{10} and $PM_{2.5}$ for this station. The building heights for the buildings included by Illinois EPA in these models were updated to 250 ft (76.2 m) to reflect the actual building heights.
- Powerton - The exhaust flow rate for the Powerton stack was determined to not be an accurate representation of the exhaust flow rate during operation of the station at high load. Data on exhaust flow rate measured for the stack during high load operations were provided by the facility and an average exhaust flow rate of 6,407,838 actual cubic feet per minute (acfm) was calculated from this data.

Source Parameters

These updates and the other stack parameters modeled for each facility are detailed in Table 2-1 below.

Table 2-1. Modeled Stack Parameters

Facility	Stack ID	UTM East* (m)	UTM North* (m)	Elevation (m)	Stack Height (m)	Stack Temperature (K)	Stack Velocity (m/s)	Stack Diameter (m)
Baldwin	BOILER1	249931	4232364	132.82	184.404	355.93	26.808	5.944
	BOILER2	249933	4232426	132.73	184.404	358.15	26.808	5.944
Kincaid	021814AAB	285609	4385298	183.29	186.842	415.37	26.820	9.022
Newton	NEWTON	389291	4310519	166.15	161.544	435.37	26.810	6.096
Powerton	POWERTON	273148	4491221	141.60	150.571	433.15	35.850	10.363

* Coordinates provided in Universal Transverse Mercator (UTM) Zone 16, North American Datum 1983 (NAD83).

Two different emission rate scenarios were modeled as shown in Table 2-2 below. The first scenario, titled "Worst-Case Full Load at PM Limits," was based on calculated lb/hr PM emission rates derived by multiplying

[1] January 22, 2024 email from Cari Rutherford of Illinois EPA to Andrew Sawula of AFS.

[2] https://www.ncei.noaa.gov/access/homr/#ncdcstnid=10003173&tab=MSHR

the applicable lb/MMBtu PM emission limits by each boiler's nominal maximum heat input (MMBtu/hr), and then converting to g/s. For Newton and Powerton, this calculation utilized the applicable state limit of 0.1 lb/MMBtu under 35 IAC 212.203 and 212.204, respectively.[3] For Baldwin and Kincaid, this calculation utilized limits of 0.015 lb/MMBtu and 0.030 lb/MMBtu, respectively, as established by Consent Decrees and incorporated into the stations' Clean Air Act Permit Program permits. Compliance with the Consent Decree limits is based on a three-hour average of emissions data for Baldwin and a six-hour average of emissions data for Kincaid. The Consent Decree emission rates are equal to or longer-term averages than the three-hour averages on which 35 IAC 212.203 and 212.214 limits are based. The Consent Decree limits are appropriate to use for particulate matter modeling because the National Ambient Air Quality Standards (NAAQS) with the shortest averaging period (24-hour) has a longer averaging period than either limit, making the Consent Decree-based emission rates a conservatively high estimate of 24-hour average emissions. The second scenario, titled "Worst-Case Full Load at AELs," is based upon estimated PM emissions during full load operation (at nominal maximum heat input) that are correlated with compliance with the proposed AELs. For both scenarios, PM_{10} and $PM_{2.5}$ emission rates are calculated from PM emissions assuming speciation based on U.S. EPA's AP-42 emission factor reference document. A more detailed explanation for the assumptions in these scenarios is set forth in the Second Supplemental Technical Support Document prepared by Stephen Norfleet of Agora Environmental Consulting.

Table 2-2. Modeled Emission Rates

Scenario	Facility	PM_{10} Emission Rate (g/s)	$PM_{2.5}$ Emission Rate (g/s)
Worst-Case Full Load at PM Limits	Baldwin (each stack)	7.44	3.94
	Kincaid	33.52	17.74
	Newton	50.65	21.92
	Powerton	141.03	74.66
Worst-Case Full Load at AELs	Baldwin – Boiler 1	22.31	11.82
	Baldwin – Boiler 2	23.80	12.60
	Kincaid	53.62	28.39
	Newton	23.30	10.08
	Powerton	110.03	58.25

Dispersion Modeling Selection

The current U.S. EPA regulatory model, AERMOD (version 23132), was used as incorporated within Trinity's *BREEZE*™ *AERMOD Pro* software to calculate ground-level concentrations with the regulatory default parameters. Appropriate averaging periods, based on federal and state ambient air quality standards, and model options were considered in the analysis.

Building Downwash

The purpose of a building downwash analysis is to determine if the plume discharged from a stack will become caught in the turbulent wake of a building (or other structure), resulting in downwash of the plume. The downwash of the plume can result in elevated ground-level concentrations.

[3] The Newton boiler is also subject to a 0.10 lb/MMBtu limit pursuant to 40 C.F.R. § 60.42(a)(1).

The Building Profile Input Program (BPIP) with Plume Rise Model Enhancements (PRIME) (version 04274) was used to determine the building downwash characteristics for each stack in 10-degree directional intervals. The PRIME version of BPIP features enhanced plume dispersion coefficients due to turbulent wake and reduced plume rise caused by a combination of the descending streamlines in the lee of the building and the increased entrainment in the wake. For PRIME downwash analyses, the building downwash data include the following parameters for the dominant building:

- Building height,
- Building width,
- Building length,
- X-dimension building adjustment, and
- Y-dimension building adjustment.

Meteorological Data

The meteorological data used for this modeling demonstration was obtained from the stations included in Table 2-3 below. The data was pre-processed for AERMOD using AERMET (version 23132) and provided by the Illinois EPA for the years 2018 through 2022.

Table 2-3. Meteorological Data

Facility	Surface Station	Upper Air Station	PROFBASE (m)
Baldwin	Cahokia St. Louis Downtown Airport	Lincoln, IL	123.4
Kincaid	Springfield Abraham Lincoln Capital Airport	Lincoln, IL	179.6
Newton	Springfield Abraham Lincoln Capital Airport	Lincoln, IL	179.6
Powerton	Peoria General Wayne A. Downing International Airport	Lincoln, IL	199.6

3. MODELING RESULTS SUMMARY

The section below summarizes the results of the $PM_{2.5}$ and PM_{10} modeling in comparison to the National Ambient Air Quality Standards (NAAQS) for each of the two scenarios.

Worst-Case Full Load at PM Limits Scenario

The modeling results for the Worst-Case Full Load at PM Limits scenario for each facility are detailed in Tables 3-1 and 3-2 below. The modeled impacts shown are in the form of the relevant NAAQS: 5-year average of 98th percentile daily average concentrations for 24-hour $PM_{2.5}$, 5-year average concentrations for $PM_{2.5}$, and highest 6th high concentrations over a 5-year period for 24-hour PM_{10}. Table 3-1 shows the results for each facility modeled against the $PM_{2.5}$ 24-hr and annual NAAQS, and Table 3-1 shows the results modeled against the PM_{10} 24-hr NAAQS. As shown in the tables, the results of this modeling demonstration are a small fraction of the NAAQS.

Table 3-1. Worst-Case Full Load at PM Limits Scenario: $PM_{2.5}$ Results

Averaging Period	Facility	Modeled Impact (µg/m³)	Current NAAQS (µg/m³)	% of the NAAQS	New NAAQS[4] (µg/m³)	% of the NAAQS
24-hr	Baldwin	0.062	35	0.18	N/A	N/A
	Kincaid	0.191		0.55		
	Newton	0.452		1.29		
	Powerton	0.653		1.87		
Annual	Baldwin	0.008	12	0.07	9	0.09
	Kincaid	0.024		0.20		0.27
	Newton	0.057		0.48		0.63
	Powerton	0.084		0.70		0.93

Table 3-2. Worst-Case Full Load at PM Limits Scenario: PM_{10} Results

Averaging Period	Facility	Modeled Impact (µg/m³)	NAAQS (µg/m³)	% of the NAAQS
24-hr	Baldwin	0.663	150	0.44
	Kincaid	0.612		0.41
	Newton	1.823		1.22
	Powerton	2.014		1.34

Worst-Case Full Load at AELs Scenario

The modeling results for the Worst-Case Full Load at AELs scenario for each facility are detailed in Tables 3-3 and 3-4 below. Table 3-3 shows the results for each facility modeled against the $PM_{2.5}$ 24-hr and annual

[4] Pursuant to the Federal Register notice issued on March 6, 2024, the EPA is revising the primary annual $PM_{2.5}$ NAAQS standard by lowering the level from 12.0 µg/m^3 to 9.0 µg/m^3 which will be effective May 6, 2024.

NAAQS, and Table 3-4 shows the results modeled against the PM_{10} 24-hr NAAQS. As shown in the tables, the results of this modeling demonstration are a small fraction of the NAAQS.

Table 3-3. Worst-Case Full Load at AELs Scenario: $PM_{2.5}$ Results

Averaging Period	Facility	Modeled Impact (µg/m³)	Current NAAQS (µg/m³)	% of the NAAQS	New NAAQS[5] (µg/m³)	% of the NAAQS
24-Hr	Baldwin	0.192	35	0.55	N/A	N/A
	Kincaid	0.306		0.88		
	Newton	0.208		0.59		
	Powerton	0.510		1.46		
Annual	Baldwin	0.024	12	0.20	9	0.27
	Kincaid	0.038		0.32		0.42
	Newton	0.026		0.22		0.29
	Powerton	0.065		0.55		0.73

Table 3-4. Worst-Case Full Load at AELs Scenario: PM_{10} Results

Averaging Period	Facility	Modeled Impact (µg/m³)	NAAQS (µg/m³)	% of the NAAQS
24-Hr	Baldwin	2.053	150	1.37
	Kincaid	0.979		0.65
	Newton	0.839		0.56
	Powerton	1.571		1.05

[5] Pursuant to the Federal Register notice issued on March 6, 2024, the EPA is revising the primary annual $PM_{2.5}$ NAAQS standard by lowering the level from 12.0 µg/m³ to 9.0 µg/m³ which will be effective May 6, 2024.