



**ENVIRONMENTAL PROTECTION AGENCY**

**40 CFR Part 52**

**[EPA-R05-OAR-2015-0700; FRL-10005-64-Region 5]**

**Air Plan Approval; Indiana; Attainment Plan for Sulfur Dioxide  
in Southwest Indiana**

**AGENCY:** Environmental Protection Agency (EPA).

**ACTION:** Proposed rule.

**SUMMARY:** The Environmental Protection Agency (EPA) is reproposing to approve under the Clean Air Act an element of the State Implementation Plan (SIP) revision for attaining the 1-hour sulfur dioxide (SO<sub>2</sub>) primary national ambient air quality standard (NAAQS) for the Southwest Indiana nonattainment area (including parts of Daviess and Pike Counties), based on revised limits for the Indianapolis Power and Light's Petersburg facility (IP&L-Petersburg) that Indiana submitted on September 18, 2019. Indiana's revised limits are based on the same dispersion modeling and the same 1-hour average emission rates that EPA proposed to conclude would result in attainment. However, the revised limits reflect revised calculations of the degree of adjustment needed for the 30-day average limits to be comparably stringent to 1-hour limits at the modeled emission rates. EPA is soliciting additional comments that may arise from these revisions.

**DATES:** Comments must be received on or before **[Insert date 30 days AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

**ADDRESSES:** Submit your comments, identified by Docket ID No. EPA-R05-OAR-2015-0700 at <http://www.regulations.gov>, or via email to [arra.sarah@epa.gov](mailto:arra.sarah@epa.gov). For comments submitted at [Regulations.gov](http://www.Regulations.gov), follow the online instructions for submitting comments. Once submitted, comments cannot be edited or removed from [Regulations.gov](http://www.Regulations.gov). For either manner of submission, EPA may publish any comment received to its public docket. Do not submit electronically any information you consider to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Multimedia submissions (audio, video, etc.) must be accompanied by a written comment. The written comment is considered the official comment and should include discussion of all points you wish to make. EPA will generally not consider comments or comment contents located outside of the primary submission (*i.e.* on the web, cloud, or other file sharing system). For additional submission methods, please contact the person identified in the "For Further Information Contact" section. For the full EPA public comment policy, information about CBI or multimedia submissions, and general guidance on making effective comments, please visit <http://www2.epa.gov/dockets/commenting-epa-dockets>.

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**SUPPLEMENTARY INFORMATION:**

Organization of this document. The following outline is provided to aid in locating information in this preamble.

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**I. History of Nonattainment Planning for SO<sub>2</sub> in Southwest Indiana**

In 2013, in implementing its 2010 1-hour primary SO<sub>2</sub> NAAQS of 75 parts per billion (ppb), EPA designated a first set of 29 areas of the country as nonattainment for this NAAQS, including the Southwest Indiana area (defined to include portions of

Daviess and Pike Counties). See 78 FR 47191 (August 5, 2013), codified at 40 CFR part 81, subpart C. In response to the resulting Clean Air Act requirements to adopt and submit to EPA a SIP demonstrating attainment of the NAAQS, Indiana submitted nonattainment plans for this and for three other areas on October 2, 2015. Indiana then submitted supplemental material pertinent in part to Southwest Indiana on November 15, 2017.

On August 15, 2018, EPA published a proposed rule that proposed to approve the SO<sub>2</sub> nonattainment plans for the Southwest Indiana, Indianapolis, and Terre Haute areas. (See 83 FR 40487.) EPA received no comments addressing the Indianapolis and Terre Haute areas, and EPA published a final rule regarding these two areas on March 22, 2019 (84 FR 10692). EPA also published separate actions regarding the SO<sub>2</sub> attainment plan for Morgan County, including a proposed rule published on July 9, 2019 (at 84 FR 32672) and a final rule published on September 23, 2019 (at 84 FR 49659). This rule therefore does not address these three areas that were addressed in Indiana's 2015 submittal, and only addresses SO<sub>2</sub> in Southwest Indiana.

Indiana's plan for SO<sub>2</sub> in Southwest Indiana addresses a number of Clean Air Act requirements that SO<sub>2</sub> nonattainment plans must meet in order to be approved by EPA, including requirements for emission limits sufficient to provide for attainment, a modeling demonstration that these limits in fact provide for

attainment, and requirements for an emissions inventory, reasonably available control, reasonable further progress (RFP), and contingency measures.<sup>1</sup> Emission limits were submitted in October 2015 for both IP&L-Petersburg and the Frank E. Ratts facility. EPA's August 15, 2018 proposed action on this rule addressed these requirements.

In response to the August 15, 2018 proposed rule, EPA received comments on Indiana's 30-day average limits for IP&L-Petersburg, which prompted Indiana to reevaluate these limits.<sup>2</sup> This reevaluation led Indiana to adopt a revised set of limits for IP&L-Petersburg, incorporated in Commissioner's Order Number 2019-2, which Indiana submitted to EPA on September 18, 2019. As explained below, these revised limits are based on the same modeling that was used to derive the limits in Indiana's October 2015 submittal and, thus, reflect the same critical emission values that Indiana identified in its October 2015 submittal. However, as explained further below, Indiana reevaluated the adjustment factor that it used to determine the 30-day average

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<sup>1</sup> As discussed in the notice of proposed rulemaking, 83 FR 40487, 40497 (Aug. 15, 2018), EPA already approved Indiana's nonattainment new source review rules on October 7, 1994, with subsequent amendments approved July 8, 2011. See 59 FR 51108 and 76 FR 40242. EPA explained that these rules provide for appropriate new source review for SO<sub>2</sub> sources undergoing construction or major modification without the need for modification of the approved rules. Therefore, EPA concluded that Indiana had satisfied nonattainment new source review requirements previously for the Southwest Indiana area and did not need to include any provisions to address these requirements in its 2015 submittal.

<sup>2</sup> EPA received no comments regarding the 1-hour limits for the Frank E. Ratts facility.

emission limits for IP&L-Petersburg, which resulted in calculation of a revised adjustment factor and therefore revised emission limits. These limits were incorporated in Commissioner's Order Number 2019-2, which was issued on July 31, 2019 and became effective on August 18, 2019.

Indiana's October 2, 2015 submittal addresses reasonably available control measures (RACM) and RFP by means of its adopted limits, so the limit revisions implicitly affect these elements of the plan. However, Indiana's recent submittal did not otherwise revise its plan with respect to these elements, and EPA continues to believe that Indiana has met these requirements. The primary focus of this proposed action is to evaluate whether these revised limits, in conjunction with other limits that Indiana submitted previously, provide for attainment of the SO<sub>2</sub> NAAQS in Southwest Indiana and continue to support EPA's proposed conclusions regarding Indiana's satisfaction of the RACM and RFP elements.

## **II. Indiana's Revisions to Limits for IP&L-Petersburg**

Indiana's October 2015 submittal included two sets of limits for IP&L-Petersburg, including one set using 1-hour average emission limits and one set using 30-day average limits, with provisions for IP&L to select which limits would apply. IP&L has requested that the 30-day average limits apply, and IP&L's involvement in pursuing modified 30-day average limits

suggests that IP&L envisions continuing to be subject to 30-day average limits. Nevertheless, Indiana requested that EPA approve both the 1-hour limits in 326 IAC 7-4-15 and the 30-day average limits in the commissioner's order, and EPA is reproposing action accordingly.

Historically, EPA required states to establish short-term emission limits at the level that modeling shows provides for NAAQS attainment, a level known as the critical emission value, with averaging times of limits expected to match the averaging time of the relevant NAAQS. EPA guidance for SO<sub>2</sub> nonattainment plans under the 2010 1-hour NAAQS states that limits with averaging times up to 30 days may, in appropriate circumstances, provide a suitable basis for plans to ensure attainment of that NAAQS. However, EPA recommends that, to serve this purpose, any such limit should be designed to have comparable stringency to a 1-hour average limit at the critical emission value. Appendix C of EPA's guidance provides a recommended procedure for determining adjustment factors which may be multiplied by the value of a candidate 1-hour limit to estimate a longer term averaged limit that is presumptively comparably stringent. This procedure uses a pertinent hourly emissions data set to determine the 99<sup>th</sup> percentile among 1-hour average emission values, to determine the 99<sup>th</sup> percentile among longer term averaged values, and to calculate the ratio between these two

99<sup>th</sup> percentile values in order to determine an adjustment factor to be applied in determining the longer term average limit. This adjustment factor represents an estimate of the change in stringency from applying the limit on a longer term average basis rather than on a 1-hour basis, so that the adjusted longer term limit is estimated to be comparably stringent to a 1-hour limit at the critical emission value. The guidance document (including appendix C) provides extensive guidance on the data sets and the calculation procedures that EPA advises be used in these determinations.<sup>3</sup>

Indiana used this general approach to determine the 30-day average limits adopted for purposes of its 2015 submittal. Based on historical emissions data from a stack that vents controlled emissions from Unit 2 of IP&L-Petersburg, Indiana calculated an adjustment factor of 80 percent, leading Indiana to establish 30-day average limits at a level that was 80 percent of 1-hour emission rates that were reflected in its attainment demonstration modeling.

EPA's proposed rulemaking on Indiana's 2015 submittal elicited public comments that, among other issues, addressed the

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<sup>3</sup> This guidance, issued on April 23, 2014, entitled, "Guidance for 1-Hour SO<sub>2</sub> Nonattainment Area SIP Submissions," is available at [https://www.epa.gov/sites/production/files/2016-06/documents/20140423guidance\\_nonattainment\\_sip.pdf](https://www.epa.gov/sites/production/files/2016-06/documents/20140423guidance_nonattainment_sip.pdf). This guidance is discussed at length in the August 15, 2018 notice of proposed rulemaking identified above.

suitability of elements of the derivation of this adjustment factor. In response, Indiana recalculated the adjustment factor to be applied in determining the 30-day average limits for IP&L-Petersburg, and submitted these revised calculations and the resulting adopted limits on September 18, 2019. Although this recalculation used the same data set as the original submittal, namely the 2006 to 2010 emissions from the main stack at IP&L-Petersburg Unit 2, Indiana used an edited data set reflecting removal of a number of inappropriate zero entries (for hours with no operation and, thus, no valid pound per million British Thermal Unit (lb/MMBTU) value) and removal of selected hours with questionable data. The revised calculations are provided in a spreadsheet that is available in the docket for this action, along with spreadsheets showing related EPA calculations described below.

Indiana's recalculated adjustment factor was 68 percent. That is, Indiana's revised evaluation determined that the 30-day average limits for IP&L-Petersburg should be 68 percent (reduced from 80 percent) of the 1-hour average emissions limit indicated by the attainment demonstration modeling. Indiana conducted no additional modeling, and instead relied on the same critical emission values as were described in its 2015 submittal. The revised limits are shown in Table 1, along with the original limits. This table also shows the emission rates (identified as

critical emission rates, expressed in lbs/MMBTU) that correspond (at maximum heat input) to the modeled critical emission values.

**Table 1. Revised limits for IP&L-Petersburg**

Unit	Critical Emission Rate (lbs/MMBTU)	Revised Limit (lbs/MMBTU)	Original limit (lbs/MMBTU)
Unit 1	0.15	0.10	0.12
Unit 2	0.15	0.10	0.12
Unit 3	0.37	0.25	0.29
Unit 4	0.35	0.24	0.28

Indiana provided additional rationale for its selection of data for performing these calculations. IP&L reports data for two emission streams at Petersburg Unit 2, identified as main stack emissions and bypass stack emissions. Indiana explained that the main stack vents emissions that have been controlled by the unit's flue gas desulfurization equipment, whereas the bypass stack vents emissions that bypass such control. Therefore, Indiana explained, data on emissions from the main stack<sup>4</sup> provide the best representation of the prospective variability of emissions that are controlled well enough to meet the limits necessary to provide for attainment. Indiana explained further that while its limits govern all emissions from each unit (which is to say the sum of emissions from the main stack and from the bypass stack at Unit 2, and similarly for the pair of stacks at Unit 1), compliance with the adopted

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<sup>4</sup> Indiana refers to this stack as the "FGD stack," i.e., the stack venting emissions controlled by the flue gas desulfurization system.

limits will require nearly eliminating emissions that bypass the control system.

In addition to the availability of a data set of controlled emissions at Unit 2, Indiana also provided an additional rationale for using data from Unit 2 to assess variability expected upon compliance with SIP limits. Unit 1 has a similar setup as Unit 2, with separate vents for controlled versus uncontrolled emissions. However, Indiana explained that historic data from Unit 1 included a high fraction of times when emissions exited through the bypass stack, so that the resulting data set is both less robust and less predictive of effective control equipment operation. Units 3 and 4 do not have separate vents for controlled versus uncontrolled emissions, so data from these units do not properly represent the variability of controlled emissions. Units 3 and 4 only have single stacks, venting a combination of controlled and uncontrolled emissions, so the historic data from these units show variability that is dominated by variability in control level, thus providing a poor data set for projecting the variability of controlled emissions.

Indiana's October 2015 submittal included both mass limits (in pounds per hour (lbs/hr)) and emission rate limits (lbs/MMBTU) for IP&L-Petersburg, and applied the same adjustment factor to the modeled 1-hour values for these respective

variables. EPA guidance provides for separate calculations of adjustment factors for these separate limits, which would reflect the different impact on stringency that can result from expressing a mass limit versus an emission rate limit as a 30-day average limit. Accordingly, Indiana reconsidered this feature of its October 2015 submittal, with the result that the replacement 30-day average limits for IP&L-Petersburg only include emission rate limits (in lbs/MMBTU), based on a view that limits on emission rates alone suffice, even at maximum heat inputs, to assure that the area will attain the standard.

An important aspect of any longer term average emission limit is the set of data handling procedures to be used in determining compliance. Indiana's commissioner's order makes no direct statement regarding data handling procedures. However, the order states that the "requirements of this Order are in addition to any less stringent requirements applicable to [IP&L] pursuant to 326 IAC 7-4-15," implying that the state intends that compliance with the 30-day average limits in the order is to be evaluated using the same procedures as those for the 30-day average limits in the rule. Paragraph (d) of 326 IAC 7-4-15, which Indiana requests be incorporated into the SIP, states that "Compliance with [the 30-day average limits in the rule] shall be determined by calculating the thirty (30) boiler operating day rolling arithmetic average emission rate at the

end of each boiler operating day using all of the quality assured hourly average continuous emission monitoring system data for the previous thirty (30) boiler operating days.”

Indiana’s submittal also includes a copy of the letter which transmitted the commissioner’s order to IP&L. This letter describes the order as applying the data handling procedures of 326 IAC 7-4-15(d), and notes further that the “methodology is documented in IPL-Petersburg’s [compliance] assessment protocol, which follows methodologies recommended in U.S. EPA’s Mercury and Air Toxics Standard (MATS) rule guidance and the U.S. EPA memorandum ‘Guidance for 1-Hour SO<sub>2</sub> Nonattainment Area SIP Submissions’.”

### **III. EPA Guidance Regarding Data Handling for Calculating Longer Term Average SO<sub>2</sub> Emission Limits**

EPA’s guidance on 1-hour SO<sub>2</sub> nonattainment plans, issued in April 2014, provides numerous detailed recommendations regarding longer term average SO<sub>2</sub> emission limits, including several recommendations regarding data handling procedures.<sup>5</sup> The guidance states that the rule promulgating MATS provides a good prototype for procedures for data handling. The guidance recommends the MATS approach of only averaging data obtained during operating hours, so that the compliance assessment

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<sup>5</sup> Guidance is cited in footnote 3 above. See especially page 32.

focuses on how well emissions are controlled and is not influenced by the fraction of time that the facility operates. The guidance recommends that emission limits averaged over multiple days be addressed by averaging emissions over the pertinent number of operating days, as is done in MATS, which improves robustness of the compliance determination by helping assure that the compliance determination reflects an adequate set of data. The guidance recommends determining compliance with limits on emission factors (e.g., limits on pounds of emissions per megawatt-hour) by dividing total mass over the 30 operating days by the total electrical output during that period. (The analogous approach for a limit expressed in pounds per MMBTU is to divide total pounds of emissions over the averaging period by total heat input in MMBTU during the period.) The guidance explains that this approach effectively weights each hour's data point according to the hour's emissions (more precisely, according to the hour's electrical output or heat input), and thus better indicates the average rate of emissions than, for example, computing an average of hourly average emission rates.

Unfortunately, in this last respect, EPA's SO<sub>2</sub> nonattainment planning guidance misrepresents the data handling procedures in MATS. In fact, MATS, consistent with common practice, determines compliance by averaging the pertinent

hourly values, either in pounds per megawatt or in pounds per MMBTU (reflecting the units of the applicable limit). See 40 CFR 63.10021. On the other hand, while EPA promulgated MATS as a national emission standard for hazardous air pollutants (NESHAP) under Clean Air Act section 112, EPA also simultaneously promulgated revisions to new source performance standards (NSPS) under Clean Air Act section 111 with limits in which, for facilities constructed, modified, or reconstructed after May 3, 2011, "compliance . . . is determined by dividing the sum of the SO<sub>2</sub> . . . emissions for the 30 successive boiler operating days by the sum of the [energy output] for the 30 successive boiler operating days." See 40 CFR 60.48Da(d), promulgated on February 16, 2012, 77 FR 9304, 9454. Thus, while the substance of EPA's recommendations was clear, the guidance was incorrect in its description of the data handling procedures of MATS, and the guidance should have cited the revisions to the NSPS for sources that began construction, modification or reconstruction after May 3, 2011 as a template for relevant data handling provisions, rather than the procedures of MATS. The following section reviews Indiana's revised submittal in light of this clarified guidance.

#### **IV. EPA's Evaluation of the IP&L-Petersburg Limit Revisions**

EPA conducted multiple analyses of the expected variability of emissions at IP&L-Petersburg upon compliance with

Indiana's limits. These analyses inform EPA's judgment as to whether Indiana's revised limits can be expected to be comparably stringent to 1-hour limits at the critical emission values.

The first analysis used the data provided by Indiana but used a different data handling procedure. Indiana's rule (326 IAC 7-4-15) specifies that compliance with the 30-day average limits in the rule shall be evaluated by determining the "30 boiler operating day rolling arithmetic average emission rate at the end of each boiler operating day using all of the quality assured hourly average continuous emission monitoring system data." This indicates that if, for example, a 30-operating day period has 700 operating hours with valid data, the compliance determination for that period would be based on the average of those 700 hourly values.

The variability analysis provided by Indiana deviates from this procedure by first calculating daily average emission rates and then calculating averages of 30 operating days of daily averages. This approach gives more weight to days with fewer operating hours than the approach in 326 IAC 7-4-15. To evaluate the significance of this difference, EPA calculated a set of 30-day average emission rates based on the arithmetic average of all hourly emission rates. EPA's guidance is to use the same data handling approach in the assessment of variability

as is provided in the state's compliance determination procedures, in order best to determine the degree to which use of a long term average limit affects stringency of the limit with those compliance procedures. Nevertheless, EPA's analysis found that the use of averaging procedures consistent with Indiana's compliance determination procedures only modestly affected the resulting adjustment factor; compared to IP&L's adjustment factor of 68 percent, use of Indiana's compliance determination procedures using the same data set yielded an adjustment factor of 68.2 percent.

IP&L explained that the data it used in its analysis are for the "FGD stack," which corresponds to the monitoring site identified in data reported to EPA as "MS2S." However, the data reported to EPA for these emissions differ from the emissions used by IP&L; for slightly over the first three years, most of the data reported to EPA appear to reflect approximately an 11 percent bias adjustment that is not reflected in the data used by Indiana. Therefore, EPA conducted an additional analysis of data reported to EPA for the MS2S monitoring site. Despite the difference in magnitudes of the emissions in these two data sets, the variability of emissions is similar, with EPA suggesting an adjustment factor of 65.0 percent, modestly lower than the 68.0 percent estimated by Indiana.

EPA also examined data reported to EPA for the main stack at Unit 1 for the same period examined by Indiana (2006 to 2010). EPA concurs with Indiana that this is a less robust data set that appears less representative of future controlled operations at this plant. The adjustment factor calculated from data for this stack (62.2 percent) is somewhat lower than the 68.0 percent adjustment factor that IP&L calculated from Unit 2 main stack data, which may reflect what appears to be comparatively unstable operation of control at Unit 1. Therefore, these Unit 1 data are consistent with Indiana's view that the historic data from the main stack at Unit 2 are the best predictors of variability from the four units at IP&L-Petersburg upon compliance with the limits.

EPA's general objective is to evaluate the degree of variability, in particular the impact of variability on the stringency of an emission limit expressed in this case as a 30-day average limit rather than as a 1-hour limit. EPA seeks for this evaluation to be predictive of the degree of variability that can be expected once the source is complying with the control requirements of the SIP. The rules Indiana submitted in October 2015 required compliance with the limits by January 2017. Although Indiana's September 18, 2019 submittal imposes slightly more stringent limits than its October 2, 2015 submittal, the control measure in either case is the existing

flue gas desulfurization equipment, and EPA anticipates that the slight increase in control efficiency needed to meet the new limits will not materially increase the variability in emissions upon compliance with these limits. Therefore, the data that are available for 2-1/2 years starting January 2017 provide a valuable indication of the likely degree of emissions variability that can be expected to apply into the future with compliance with the newer limits.

For these reasons, EPA analyzed the emissions data from January 2017 to June 2019 for each of the four units at IP&L-Petersburg. In this analysis, for Units 1 and 2, in both cases EPA used the sum of emissions from the main stack and from the bypass stack, reflecting the fact that Indiana's limits govern total emissions from each unit. In order to apply the same data handling procedures as are used to determine compliance with the limits, EPA considered only days in which the unit operated, EPA computed 30-operating-day averages ending at the end of each operating day, and EPA computed the average emission rate as an arithmetic average among the valid operating hour emission rate data. Substitution data (conservative emission estimates derived according to trading program requirements in cases where information needed for a precise emission calculation was missing) appeared to be rare and unlikely to affect results

significantly, and so EPA's analyses used a complete data set that reflected no deletion of any substitution data.

EPA summarizes the results of these analyses in Table 2. Two spreadsheets that are included in the docket, including one for 2006 to 2010 data and one for 2017 to 2019 data, show the data and the calculations used in these analyses.

**Table 2. Adjustment factors for IP&L-Petersburg.**

Analysis	Resulting Adjustment Factor
IP&L analysis, using Unit 2 Main Stack data (2006-2010)	68.0 percent
Using IP&L data with Indiana compliance statistics	68.2 percent
Using EPA data (Unit 2 main stack, 2006 - 2010)	65.0 percent
Using 2017 - mid-2019 data	Unit 1: 73.0 percent
	Unit 2: 57.6 percent
	Unit 3: 68.6 percent
	Unit 4: 70.4 percent
	Average: 67.4 percent

As noted above, Indiana used data from the stack at Unit 2 that vents controlled emissions to determine an adjustment factor to apply in determining 30-day average limits. Indiana has confirmed that these limits govern the total of all emissions from the respective units; in particular the limits for Units 1 and 2 govern the sum of emissions from the main stack plus the emissions from the bypass stack for each of these two units. The determination of an adjustment factor from just the main stack data reflects a premise that the historic data for the controlled emission stack is most indicative of the

prospective variability of all emissions once the control requirements of the SIP are met. This premise in turn reflects an expectation that implementation of the control strategy will result in (uncontrolled) bypass stack emissions being minimal.

EPA used the available 2017 to 2019 data to test these premises. For 2006 to 2010, according to data reported to EPA, bypass stack emissions for the 5 years accounted for 89 percent of the total Unit 1 emissions and 30 percent of the total Unit 2 emissions. In contrast, for 2017 to mid-2019, bypass stack emissions accounted for only 3 percent of emissions from Unit 1 and 0.2 percent of emissions from Unit 2.

In any case, the adjustment factors shown in Table 2 above for 2017 to mid-2019 are based on statistics for total emissions for each unit, which for Units 1 and 2 reflect the sum of emissions from the main stack plus emissions from the bypass stack. Thus, the results in Table 2 for recent emissions represent the strongest evidence that the 2006 to 2010 data for the main stack at Unit 2 provides a suitable projection of the degree of variability in total emissions upon implementation of the SIP limits.

Since the methods recommended in appendix C of the guidance rely on 99<sup>th</sup> percentile values, the guidance recommends assuring that these assessments be based on a robust data set. For this reason, the guidance recommends using a data set with

three to five years of data. The post-control data being used here represent only 2-1/2 years. Therefore, EPA averaged the adjustment factors for the four units (shown in Table 2) in order to improve the robustness of the analysis.

As shown in Table 2 above, the post-control data for the four units at IP&L-Petersburg support an average adjustment factor of 67.4 percent, very close to the 68.0 percent adjustment factor applied by Indiana.<sup>6</sup> The similarity of these percentages support several findings. First, the 2006 to 2010 data for the stack known as MS2S, the stack that vents controlled emissions from Unit 2, provide a good representation of the variability of emissions to be expected upon implementation of the limits in Indiana's plan. Most plants do not have separate vents for controlled versus uncontrolled emissions, but the availability here of separate data for controlled versus uncontrolled emissions results in the availability of a good representation of the variability of emissions to be expected when the plan requires virtual elimination of uncontrolled emissions. Second, the similarity of percentages further supports Indiana's assertion that the

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<sup>6</sup> The slightly lower adjustment factor suggests the possibility that the limits Indiana adopted correspond to (are comparably stringent to 1-hour limits at) slightly higher emission rates than Indiana modeled. However, Indiana's attainment demonstration (with a design value of 189.68 micrograms per cubic meter) provides a sufficient attainment margin so that these differences in adjustment factors would not alter the conclusion that Indiana's limits provide for attainment.

controlled emissions from Unit 2 provide a better forecast of emissions variability for controlled emissions of all four units than would be obtained from the controlled emissions from Unit 1. Finally, this similarity supports a finding that the use of 2006 to 2010 data for the controlled emission stack for Unit 2 provides a good basis for estimating the degree of adjustment for determining 30-day average limits at IP&L-Petersburg that are comparably stringent to the 1-hour limits that would otherwise apply.

As noted in Section II, Indiana's rule provides for computing 30-day average emission rates as an arithmetic average of the hourly lbs/MMBTU values during operating hours. Notwithstanding the potential for confusion regarding EPA's guidance on this point (as discussed above), this approach differs from the recommendation in EPA's guidance to compute 30-day average emission rates as the ratio between the 30-day total emissions divided by the 30-day total heat input.

Therefore, EPA conducted additional evaluation, using the 2017 to mid-2019 data from the four units at IP&L-Petersburg, to compare the results of these two data handling approaches. This evaluation focused on 99<sup>th</sup> percentile values of the 30-day average emission rates calculated using these two approaches, in order to focus on periods when compliance is most challenging. Table 3 shows the results of this evaluation.

**Table 3. Effect of data handling approach on 99<sup>th</sup> percentile 30-day average emission rates**

Unit	Arithmetic average (lbs/MMBTU)	Total emissions/total heat input (lbs/MMBTU)	Ratio
1	0.097	0.088	110%
2	0.117	0.121	97%
3	0.214	0.219	98%
4	0.214	0.220	97%
Average			100%

These results suggest several conclusions. First, the results of these approaches, at least at times of most concern (i.e., times with relatively high emissions), tend to be quite similar. Second, neither approach is necessarily more conservative than the other. Third, the variation in results across the four units lends some support to the view that the arithmetic average approach gives slightly less stable results, but the results are sufficiently similar that either approach is a suitable approach for evaluating compliance.

While Indiana's submittal (in the State's letter to the company dated September 18, 2019) describes the commissioner's order as applying the compliance methodology "recommended" in MATS, the applicable compliance provisions (in 326 IAC 7-4-15(d)) provide for averaging "all of the quality assured hourly average . . . data," which would include data collected during startup and shutdown of the units. Thus, Indiana's submittal does not raise questions as to whether it is permissible to exclude data during startup and shutdown in an attainment plan.

As noted above, EPA guidance recommends calculating adjustment factors using data obtained according to the procedures used in determining compliance. Since compliance with IP&L's 30-day average limits is evaluated on the basis of an arithmetic average of operating hour emission rates, the appropriate adjustment factors here are calculated on that basis. For reasons discussed above, EPA believes that Indiana has adopted limits that reflect suitable adjustments, such that these limits are comparably stringent to the 1-hour limits that Indiana's modeling has demonstrated would provide for attainment.

The August 2018 proposed rule observed that this facility, upon complying with its 30-day average limits, can be expected to have only a limited frequency and magnitude of hours with emissions exceeding the critical emission value. Since the changes in Indiana's plan for IP&L-Petersburg retain the same critical emission value but establish lower 30-day average emission limits, these changes can be expected to reduce the frequency and magnitude of occasions when emissions exceed the critical emission value.

Nevertheless, more pertinent data are now available to address this question. EPA previously examined this question based on 2006 to 2010 data from the main stack at Unit 2, but EPA now has data for 2017 to mid-2019 for all four units, for a

period when IP&L was required to meet limits similar to the final limits. For this period, Units 1, 3, and 4 are complying with the revised emission limits and are exceeding the critical emission values (*i.e.*, the modeled mass emissions in lbs/hour) for 0.9 percent, 0.1 percent, and 0.4 percent of the hours, respectively. Unit 2 is exceeding its revised limit 17 percent of the time, while exceeding the critical emission value 3 percent of the time.<sup>7</sup> This suggests that the necessary improvements in scrubber efficiency at Unit 2 would likely yield a percentage of hours with emissions above the critical emission value that is similar to the percentages found for the three units that are already complying with limits.

EPA proposed previously that Indiana's modeling provides an appropriate estimation of the critical emission values that will provide for attainment, and Indiana has made no changes that warrant EPA revisiting that finding. Instead, Indiana has changed only its calculation of an adjustment factor and, by applying the resulting revised adjustment factor, determined and adopted a revised set of 30-day average limits that EPA now judges to be comparably stringent to 1-hour limits at the critical emission values. Accordingly, in this proposed rule,

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<sup>7</sup> The exceedances of the new Unit 2 limit, while somewhat frequent, are modest in magnitude; during this 2-1/2-year period, Unit 2 met the prior limit for all but one 30-day average period, and a majority among the 30-day periods with averages above 0.10 lbs/MMBTU had average emission rates below 0.11 lbs/MMBTU.

EPA is soliciting comments on the revised adjustment factor calculations, the resulting revisions in Indiana's plan, and EPA's evaluation of these revisions. EPA is not soliciting additional comments on Indiana's plan and EPA's evaluation of that plan other than with respect to those elements of Indiana's plan and EPA's evaluation that have changed since EPA's prior proposed rulemaking.

Indiana's September 18, 2019 submittal requests that EPA approve 326 IAC 7-4-15, including the 1-hour limits for IP&L-Petersburg, except for the 30-day average limits for IP&L-Petersburg in that rule, and approve the commissioner's order, which includes substitute 30-day average limits. In seeking approval of both the rule and the commissioner's order, Indiana seeks to allow IP&L to switch between 1-hour limits in 326 IAC 7-4-15(a) and the 30-day average limits in the commissioner's order. Indiana clarified that the 30-day average limits in the commissioner's order are to be viewed as substitutes for the 30-day average limits in 326 IAC 7-4-15(c), and that references to the limits in subsection (c) in 326 IAC 7-4-15 should be understood as references to the limits in the order. See email from Mark Derf to John Summerhays dated November 19, 2019. Indiana further clarified that 326 IAC 7-4-15(e) thus provides terms under which IP&L may choose to switch between being required to comply with the 30-day average limits in the

commissioner's order and being required to comply with the 1-hour limits in 326 IAC 7-4-15(a). EPA is proposing action in accordance with this interpretation.

#### **V. EPA's Proposed Action**

EPA is proposing to conclude that, based on revised adjustment factor calculations, the revised emission limits that Indiana has adopted for IP&L-Petersburg are a suitable element of an approvable plan for attaining the 2010 1-hour SO<sub>2</sub> NAAQS for Southwest Indiana. This action is a supplement to a prior proposed rule, published August 15, 2018, at 83 FR 40487, which addressed the full range of requirements that the SO<sub>2</sub> nonattainment plan for Southwest Indiana must meet.

EPA is not soliciting additional comments on the other elements of Indiana's plan for Southwest Indiana, aside from any ramifications of Indiana's revised emission limits for IP&L-Petersburg. In response to comments received, Indiana has only revised its calculation of the degree of adjustment needed for 30-day average limits at IP&L-Petersburg to be comparably stringent to the 1-hour limits that would otherwise be necessary, and has adopted the limits that this revised calculation indicated to be warranted. Accordingly, EPA is only soliciting comments on the revisions that Indiana made and EPA's evaluation of these revisions. EPA acknowledges receipt of other comments on Indiana's plan and EPA's August 2018 proposed

action, including comments on the general acceptability of 30-day average limits. EPA plans to address those comments as part of final rulemaking on Indiana's plan for SO<sub>2</sub> in Southwest Indiana.

EPA's August 2018 proposed action specifies particular Indiana rules that EPA proposed to incorporate by reference into the Indiana SIP. Two of these rules (Title 326 Indiana Administrative Code Rules 7-1.1-3 and 7-2-1 (326 IAC 7-1.1-3 and 7-2-1)) provide compliance deadlines, reporting requirements and compliance determination procedures not just for sources in Southwest Indiana but also for sources in the Indianapolis, Terre Haute, and Morgan County areas. EPA has already approved these rules as part of its action on the Indianapolis and Terre Haute area plans, as published on March 22, 2019 at 84 FR 10692, and so no further action on these rules is necessary. EPA also proposed to approve limitations for Pike County, in 326 IAC 7-4-15, which includes limitations for IP&L-Petersburg and for the Frank E. Ratts power plant. EPA continues to intend to approve most of this rule, specifically paragraphs a, b, d, and e, incorporating the limits for the Frank E. Ratts plant, the 1-hour limits for IP&L-Petersburg, and associated compliance provisions into the SIP. The only portion of 326 IAC 7-4-15 that EPA is proposing not to take action on is paragraph c, the paragraph with the prior 30-day average limits for IP&L-

Petersburg; as requested by Indiana, EPA is instead proposing to approve the commissioner's order that Indiana submitted September 18, 2019, which EPA considers to provide substitute 30-day average limits for the 30-day average limits in 326 IAC 7-4-15(c).

#### **VI. Incorporation by Reference**

In this rule, EPA is proposing to include in a final EPA rule regulatory text that includes incorporation by reference. In accordance with requirements of 1 CFR 51.5, EPA is proposing to incorporate by reference Commissioner's Order Number 2019-2, effective August 18, 2019, and 326 IAC 7-4-15 Pike County sulfur dioxide emission limitations (except for paragraph (c)), effective October 30, 2015. EPA has made, and will continue to make, these documents generally available through [www.regulations.gov](http://www.regulations.gov), and at the EPA Region 5 Office. (Please contact the person identified in the "For Further Information Contact" section of this preamble for more information.)

#### **VII. Statutory and Executive Order Reviews**

Under the Clean Air Act, the Administrator is required to approve a SIP submission that complies with the provisions of the Clean Air Act and applicable Federal regulations. 42 U.S.C. 7410(k); 40 CFR 52.02(a). Thus, in reviewing SIP submissions, EPA's role is to approve state choices, provided that they meet the criteria of the Clean Air Act. Accordingly, this proposed

action merely approves state law as meeting Federal requirements and does not impose additional requirements beyond those imposed by state law. For that reason, this proposed action:

- Is not a "significant regulatory action" subject to review by the Office of Management and Budget under Executive Order 12866 (58 FR 51735, October 4, 1993) and 13563 (76 FR 3821, January 21, 2011);
- Does not impose an information collection burden under the provisions of the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*);
- Is certified as not having a significant economic impact on a substantial number of small entities under the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*);
- Does not contain any unfunded mandate or significantly or uniquely affect small governments, as described in the Unfunded Mandates Reform Act of 1995 (Public Law 104-4);
- Does not have federalism implications as specified in Executive Order 13132 (64 FR 43255, August 10, 1999);
- Is not an economically significant regulatory action based on health or safety risks subject to Executive Order 13045 (62 FR 19885, April 23, 1997);
- Is not a significant regulatory action subject to Executive Order 13211 (66 FR 28355, May 22, 2001);

- Is not subject to requirements of Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (15 U.S.C. 272 note) because application of those requirements would be inconsistent with the Clean Air Act; and
- Does not provide EPA with the discretionary authority to address, as appropriate, disproportionate human health or environmental effects, using practicable and legally permissible methods, under Executive Order 12898 (59 FR 7629, February 16, 1994).

In addition, the SIP is not approved to apply on any Indian reservation land or in any other area where EPA or an Indian tribe has demonstrated that a tribe has jurisdiction. In those areas of Indian country, the rule does not have tribal implications and will not impose substantial direct costs on tribal governments or preempt tribal law as specified by Executive Order 13175 (65 FR 67249, November 9, 2000).

**List of Subjects in 40 CFR Part 52**

Environmental protection, Air pollution control,  
Incorporation by Reference, Intergovernmental relations,  
Reporting and recordkeeping requirements, Sulfur oxides.

Dated: February 10, 2020.

Kurt A. Thiede,  
Regional Administrator, Region 5.

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