

Illinois Environmental Protection Agency  
Bureau of Air  
Permit Section

October 2013

Response to Comments on the  
Planned Significant Modification of the  
Clean Air Act Permit Program (CAAPP) Permit Issued to  
Ameren Energy Generating Company for the  
Coffeen Energy Center  
Coffeen, Illinois

Source I.D. No.: 135803AAA  
Permit No.: 95090009

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## **DECISION**

On October 17, 2013, the Illinois EPA issued a modified Clean Air Act Permit Program (CAAPP) permit to Ameren Energy Generating Company for the Coffeen Energy Center.

## **BACKGROUND**

The Coffeen Energy Center (Coffeen) is a coal-fired electric power plant owned and operated by Ameren Energy Generating Company (Ameren). The plant has two coal-fired boilers that produce steam that is then used to generate electricity. Coffeen qualifies as a major source of emissions under Illinois' Clean Air Act Permit Program (CAAPP).

The CAAPP is Illinois' operating permit program for sources of emissions pursuant to Title V of the federal Clean Air Act. The CAAPP is administered by the Illinois EPA. It generally requires that the owner or operator of a major stationary source of emissions in Illinois apply for and obtain a CAAPP permit for the operation of such source. CAAPP permits contain conditions identifying applicable air pollution control requirements under the federal Clean Air Act and Illinois' Environmental Protection Act (Act). Compliance procedures, including testing, monitoring, recordkeeping and reporting requirements, are also established as required or necessary to assure compliance and accomplish the purposes of the CAAPP. The conditions of a CAAPP permit are enforceable by the Illinois EPA, USEPA and the public.

The Illinois EPA issued the initial CAAPP permit for Coffeen on September 29, 2005. Ameren appealed this permit to Illinois' Pollution Control Board (Board), contending that a number of conditions in the permit were erroneous or unwarranted. On February 16, 2006, the Board accepted Ameren's petition for appeal and granted an administrative stay of the issued CAAPP permit in its entirety.

Ameren and the Illinois EPA, with the assistance of the Office of the Illinois Attorney General, have been engaged in discussions to resolve the permit appeal. As outlined in the Statement of Basis for the draft permit, there are three steps in the process for the resolution of the appeal. The first step was to lift the administrative stay of the initial CAAPP permit for Coffeen. The Illinois EPA and Ameren jointly filed a motion with the Board on September 14, 2012, requesting that the stay of the initial CAAPP permit be lifted with respect to conditions of the permit that were not being contested in the appeal. On September 20, 2012, the Board granted this motion and the initial CAAPP permit for Coffeen took effect, as requested by the motion.<sup>1</sup>

The next step for the resolution of the appeal, as is presently occurring, is for the Illinois EPA to issue a modified CAAPP permit for Coffeen to resolve certain contested permit conditions. This involved certain changes to the initial permit, which have been made in the current permit action, using the procedures for significant modifications to CAAPP permits.<sup>2</sup> These

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<sup>1</sup> This permit now has a five-year term that will end on September 20, 2017.

<sup>2</sup> Concurrent with the various modifications to the CAAPP permit that have been made by means of the procedures for significant modification to CAAPP permits, certain

changes were discussed in Chapter III in the Statement of Basis that the Illinois EPA prepared to accompany the draft of the modified permit that the Illinois EPA prepared for review by the public.

Because a significant modification of this CAAPP permit triggered the applicable requirements of USEPA's rules for Compliance Assurance Monitoring (CAM), 40 CFR Part 64, Ameren submitted the information required by these rules, including a "Compliance Assurance Monitoring Plan" (CAM Plan) for the two coal-fired boilers at Coffeen for emissions of particulate matter (PM). Along with the modifications to the initial CAAPP permit that were made as part of resolution of the appeal, other appropriate conditions have been added in the modified permit to address CAM, including conditions that provide conditional approval of Ameren's CAM Plan for the coal-fired boilers.<sup>3</sup>

The third step in the settlement of the appeal, which is in its initial stages of development, is the formal reopening of the CAAPP permit for Coffeen using the procedures for reopening of CAAPP permits. In this step, new requirements that have been adopted under the Clean Air Act since the original permit was issued, which are now applicable to Coffeen, will be added into the permit.<sup>4</sup>

#### **OPPORTUNITY FOR PUBLIC COMMENTS**

The issuance of this modified permit was preceded by a public comment period, in accordance with Section 39.5(8) of the Act and 35 IAC Part 252. A draft of the modified permit and the accompanying Statement of Basis prepared by the Illinois EPA were available at the Coffeen Community Library in Coffeen and the Illinois EPA's Headquarters in Springfield for review by the public. This comment period began on September 25, 2012. A public hearing was held on November 15, 2012 at the East Fork Township Building in Coffeen. The comment period ended on December 17, 2012.

#### **AVAILABILITY OF DOCUMENTS**

Copies of this responsiveness summary and the modified permit that has been issued are being made available for viewing by the public at the Illinois EPA's Headquarters at 1021 North Grand Avenue East in Springfield and at the Coffeen Community Library, 201 West Main Street in Coffeen. Printed copies

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other modifications to the permit were also made by the procedures for administrative amendments and minor modifications to CAAPP permits.

<sup>3</sup> Ameren did not submit a CAM Plan with specific indicator ranges because of the absence of appropriate test data for the PM emissions of the coal-fired boilers with concurrent data for opacity and the operation of the flue gas desulfurization (FGD) systems now installed on these boilers. Consistent with 40 CFR 40 CFR 64.4(e) and 64.6(b), the conditional approval of the CAM Plan requires Ameren to conduct the necessary PM emission testing, under representative conditions, to establish indicator ranges, submit those ranges to the Illinois EPA and begin operation of the monitoring within 180 days of the issuance of the modified permit.

<sup>4</sup> Key rules for the emissions of coal-fired utility boilers that have been adopted since the CAAPP Permit for Coffeen was initially issued that would be addressed in the reopening proceeding include the Clean Air Interstate Rule (CAIR) and the Mercury and Air Toxics Standards (MATS). Ameren is already subject to and complying with the relevant requirements of CAIR. The compliance date for MATS is in the future.

of these documents are also available free of charge by contacting Brad Frost at the Illinois EPA's Office of Community Relations by telephone (888/372-1996 - Toll Free Environmental Helpline; 217/782-7027 - desk line; or 217/782-9143 - TDD), by facsimile (217/524-5023) or by email (brad.frost@illinois.gov).

## **COMMENTS WITH RESPONSES BY THE ILLINOIS EPA**

### **Comment I (page 1) - Procedural Flaw**

There are serious deficiencies with the process that the Illinois EPA has undertaken to issue the CAAPP permit for the Coffeen plant, and may well use for the CAAPP permits for Illinois' other coal-fired power plants. In the case of this plant, the Illinois EPA would put in place until 2017 a CAAPP permit that omits many legally applicable requirements, based on an application submitted 17 years ago and an initial permit that should have expired in 2010, five years after it was issued. This would leave unacceptable gaps in the permit's conditions. The permit does not contain any references to the flue gas desulfurization (FGD) control systems that are now installed on the coal-fired boilers, much less any requirement to operate these systems. This is because these systems had not yet been installed when the permit was initially issued. The Statement of Basis, page 7, notes that USEPA has expressed concern that the Illinois EPA's stated intent to reopen the permit "lacks a sufficiently enforceable component". I share this concern. The Illinois EPA's statement that it "considers the reopening provision to constitute an unambiguous statutory duty on the part of the Illinois EPA that is fully enforceable under the CAAPP" addresses but does not fully resolve that concern. A more appropriate process than the current process would have been a full-scale permit renewal. A permit renewal would have been more consistent with and supported by the CAAPP and the timelines provided by Section 503 of the Clean Air Act.

### **Response**

The Illinois EPA's objective in this and related permitting actions has been to achieve permit effectiveness and resolve the related CAAPP permit appeals involving the Illinois coal-fired power plants. The legal process for doing so is set forth in CAAPP's procedures, which the Illinois EPA is obliged to follow. The Illinois EPA disagrees that there are deficiencies with the process set forth in the applicable laws and regulations. However, if any such deficiencies with the process exist, it is a product of the statutory and/or regulatory framework of the Title V permitting program, which largely derive from the Clean Air Act and federal regulations implementing the same, and cannot be cured by way of this permitting action.

As explained in the Statement of Basis that accompanied the draft permit, the Illinois EPA did exercise limited discretion in choosing between the procedures available under CAAPP to accomplish the goals identified above. To be more specific, the Illinois EPA declined to initiate a comprehensive review of the initial CAAPP permit, as doing so would have delayed resolution of the appeals and prolonged the period during which the affected sources, including the Coffeen Energy Station, operate without an effective CAAPP permit. It would also have been repetitious for a large body of the permit

that was not challenged in this or the other appeals. The Illinois EPA did not consider the permit renewal process, as suggested by the comment. Permit renewal procedures are not a viable legal option in the present context, as they can only become applicable after an initial CAAPP permit has run its full term.

The Illinois EPA opted instead to use the CAAPP's modification procedures to make the CAAPP permit for the Coffeen Energy Station effective and to resolve the related appeal. This decision reflected a considered judgment of the permit authority and was subsequently endorsed by USEPA/Region V. Further, in recognizing that the 2005 permit does not currently reflect recent regulatory developments, the Illinois EPA has committed to reopen the permit in the future to incorporate Clean Air Act requirements that have become applicable to the source since the 2005 permit issuance. Although such requirements have and will continue to remain independently enforceable, a permit reopening incorporating such requirements into a Title V permit should adequately address the concern expressed by the comment regarding perceived gaps in the CAAPP permit.

x. Comment III.D (page 11): The modified CAAPP permit should make clear that the future incorporation into the permit of ranges for opacity and scrubber recycle pumps, and all other ESP and FGD parameters selected to supplement them, will constitute a *significant* permit modification. Draft Condition 7.1.13-1(b) (ii) would provide that Ameren, no later than 60 days following completion of CAM testing, shall submit an application for a proposed modification to the permit to "incorporate information for the opacity and circulation pump values that was derived from testing . . . ." This condition should specify that Ameren must apply for a significant modification to the permit. Pursuant to Section 39.5(14)(c)(ii) of the Act and 40 CFR 70.7(e)(4)(i), the addition to a permit of specific ranges for indicators that are monitored under a CAM Plan constitutes a "significant change in existing monitoring permit terms." As such, it should be subject to an opportunity for public comment, either as a significant modification to the permit or in a reopening of the permit.

An opportunity for public comment is particularly important given that the CAM Plan would "replace" certain periodic monitoring for PM emissions currently required by the permit (Statement of Basis at 16). The initiation of a new approach to monitoring, in the form of the final CAM Plan, certainly will constitute a "significant change in existing monitoring permit terms."

**It is not necessary for the modified CAAPP permit to specify that the future incorporation into the permit of the specific ranges for indicators will constitute a *significant* permit modification. Because of the conditional approval of the CAM Plan, the future approval of actual indicator ranges by the Illinois EPA must be preceded by an opportunity for public comment.<sup>5</sup> These indicator ranges could be incorporated into the permit through a significant modification of the permit. It is also possible that inclusion of the indicator ranges could be made in a reopening proceeding or other type**

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<sup>5</sup> It is also relevant that the CAM Plan submitted by Ameren did not specify any notice procedure by which the indicator ranges would be established or re-established (40 CFR 64.6(c)(2)).

of permit proceeding that includes an opportunity for public comment. Permit proceedings are governed by the applicable laws and rules that govern the CAAPP and their requirements cannot be established by a provision in the modified permit.

Incidentally, while a future opportunity for public comment will be provided by the Illinois EPA, it will not be provided for the further reason claimed by this comment. That is, this opportunity for public comment will not be provided because the new approach to monitoring, with monitoring pursuant to a CAM Plan, would "replace" certain requirements for Periodic Monitoring for the Coffeen boilers. Condition 7.1.13-2(b) of the modified permit (which is identical to Condition 7.1.13-2(b) of the draft of the permit) already provides that the monitoring required under the CAM Plan will replace those Periodic Monitoring requirements in accordance with the CAM Rule.<sup>6</sup>

**Comment II - Legal Requirements (page 2)**

x. For subject emission units relative to relevant emission limits, 40 CFR 64.3(a)(2) of the CAM Rule provides that in order to assure compliance with such limits, the monitoring under CAM must meet the following criterion, among others:

The owner or operator shall establish an appropriate range(s) or designated condition(s) for the selected indicators such that operation within the ranges provides a reasonable assurance of ongoing compliance with the emission limitations or standard for the anticipated range of operating conditions.

In the preamble to the CAM Rule, the USEPA explained that:<sup>7</sup>

The CAM approach builds on the premise that if an emission is proven to be capable of achieving compliance as documented by a compliance or performance test and is thereafter operated under the conditions anticipated and if the control equipment is properly operated and maintained, then there will be a reasonable assurance that the emission unit will remain in compliance. *...Thus, a critical issue that the CAM approach must address is establishing objective indicators of whether a source is properly operated and maintained.* 62 FR 54,926 (Oct. 22, 1997) (emphasis added)

Accordingly, the basic approach to indicator ranges laid out by the CAM Rule is to determine what parametric indicator ranges reflect the proper operation and maintenance of the relevant pollution control devices, and to make sure that the source properly addresses any deviance from those ranges by responsive actions. In this manner, compliance with the applicable emission is assured because operational problems that would otherwise cause violations are properly corrected.

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<sup>6</sup> See 40 CFR 64.7(a), 40 CFR 64.6(d), & 40 CFR 64.4(e)

<sup>7</sup> Elsewhere in the preamble to the adoption of the CAM Rule, the USEPA also explained that, "Logically, therefore, once an owner or operator has shown that the installed control equipment can comply with an emission limit, there will be a reasonable assurance of ongoing compliance with the emission limit as long as the emission unit is operated under the conditions anticipated and the control equipment is operated and maintained properly. This logical assumption is the basis of EPA standard setting under the NSPS program and serves as the model for the CAM approach as well." 62 FR 54,918 (Oct. 22, 1997)

Illinois EPA disagrees with this interpretation of the CAM Rule and the preamble to the adoption of the CAM Rule.

A more careful reading of USEPA's preamble for the adoption of the CAM Rule shows that USEPA determined that the CAM Rule will act to support or facilitate the proper operation and maintenance of emission units and their control devices by sources. This is because the CAM Rule requires that indicator ranges be established that provide a reasonable assurance of compliance with the applicable emission limitations or standards.<sup>8</sup> As specifically related to the establishment of indicator ranges for purposes of CAM, USEPA stated the following:

"...the presumptive approach for establishing indicator ranges in part 64 is to establish the ranges in the context of performance testing. To assure that conditions represented by performance testing are also generally representative of anticipated operating conditions, a performance test should be conducted under conditions specified by the applicable rule or, if not specified, generally under conditions representative of maximum emission potential under anticipated operating conditions. In addition, the rule allows for adjusting the baseline values recorded during a performance test to account for the inappropriateness of requiring that indicator conditions stay exactly the same as during a test. The use of operational data collected during performance testing is a key element in establishing indicator ranges; however, other relevant information in establishing indicator ranges would be engineering assessments, historical data, and vendor data. Indicator ranges do not need to be correlated across the whole range of potential emissions."

62 FR 54,926 (Oct. 22, 1997)

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<sup>8</sup> As explained by USEPA in the preamble to the adoption of the CAM Rule, "These examples point to the underlying assumption that there is a reasonable assurance of compliance with emission limits so long as the emission unit is operated under the conditions anticipated and the control equipment that has been proven capable of complying continues to be operated and maintained properly. In most cases, this relationship can be shown to exist through the performance testing without additional site-specific correlation of operational indicators with actual emission values. The monitoring design criteria in Sec. 64.3(a) build on this fundamental premise of the regulatory structure.

Thus, Sec. 64.3(a) states that units with control devices must meet certain general monitoring design criteria in order to provide a reasonable assurance of compliance with emission limitations or standards for the anticipated range of operations at a pollutant-specific emissions unit. These criteria mandate the monitoring of one or more indicators of the performance of the applicable control device, associated capture system, and/or any processes significant to achieving compliance. The owner or operator shall establish appropriate ranges or designated conditions for the selected indicators such that operating within the established ranges will provide a reasonable assurance of compliance for the anticipated range of operating conditions. The requirement to establish an indicator range provides the objective screening measure to indicate proper operation and maintenance of the emissions unit and the control technology, i.e., operation and maintenance such that there is a reasonable assurance of compliance with emission limitations or standards." [62 FR 54918 (Oct. 22, 1997)]

It is relevant that USEPA focuses upon the demonstration of compliance made for an emission unit without any mention of "proper operation and maintenance" of control devices. In addition, with respect to indicator ranges and proper operation and maintenance, the CAM Rule only provides that:

*"...Such range(s) or conditions(s) shall reflect the proper operation and maintenance of the control device (and associated capture system), in accordance with applicable design properties, for minimizing emissions over the anticipated range of operation conditions at least to the level required to achieve compliance with the applicable requirements. ..."*

40 CFR 64.3(a)(2) (emphasis added)

x. Comment III - Intro (page 4): I support the proposed CAM Plan's requirement that Ameren monitor both PM control devices for the coal-fired boilers, the ESPs and the FGD systems, in order to assure compliance with the PM emission limits that apply to the boilers.<sup>9</sup> However, the proposed CAM Plan would not assure proper operation of the control devices. The CAM Plan must include a requirement for indicator ranges that actually will demonstrate proper operation and maintenance of the ESPs.

**Under the CAM Rule, the indicator range(s) that are established in a CAM Plan must provide a reasonable assurance of compliance with the applicable standard or emission limitations. Illinois EPA disagrees that the CAM Rule requires indicator ranges to be set to directly "demonstrate proper operation and maintenance" of control devices. Therefore, there is no deficiency in the CAM plan.**

x. Comment III - Part A/A1 (page 5): The monitoring of the ESPs on the Coffeen boilers that would be required by the CAM Plan would not be designed to assure the proper operation of the ESPs. The CAM Plan would only require Ameren to monitor the operation of the ESPs by measuring the opacity in the flue gas stream at the outlet of the ESPs with continuous opacity monitoring systems (COMS). The plan does not specify the opacity levels that would trigger responsive actions for each boiler. The draft permit would instead require Ameren to perform PM emissions testing following the issuance of the permit and to then submit an application for a proposed modification "to incorporate information for the opacity." (Draft Conditions 7.1.13-1(a), (b)(1) and (2)). The draft permit would not specify how opacity is to be correlated with PM emissions. A central problem with this approach to monitoring the operation of the ESPs is that the CAM Plan does not contain an acceptable procedure for setting opacity indicators to assure proper operation of the ESPs.

**Response:**

**This comment makes the claim that the CAM plan submitted by Ameren is not designed to assure proper operation of ESP's. Illinois EPA addressed this comment in the previous response. The comment further states that the plan does not specify opacity levels that would trigger a responsive action, the**

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<sup>9</sup> In the CAM Plan, the indicator for the proper operation of the ESPs is the percentage of opacity in the flue gas stream. The indicator for the FGD systems is the number of recycle pumps that are in service.

permit does not specify how opacity is to be correlated with PM and the plan does not contain an acceptable procedure for setting opacity indicators. Although all of these observations are true, they do not support the claim that the CAM plan is inadequate to demonstrate reasonable compliance.

The comment appears to be confusing two separate options<sup>10</sup> allowed in the CAM Rule which are 1) inclusion of a specific numerical indicator range or 2) a procedure that would derive a specific numerical indicator range, that provides a reasonable assurance of compliance. Ameren has chosen the first option whereby emissions testing will be performed under anticipated operating ranges to establish a specific numerical indicator range for the parameters that have been conditionally approved by the Illinois EPA. Thus, the permit does not need to contain specific procedures for establishing the indicator ranges since these ranges will actually be set after completion of the testing<sup>11</sup> required by the conditional approval.

The CAM plan currently does not specify an indicator range because Ameren does not have data available over the anticipated operating conditions to reliably set this numerical indicator range. This is the reason for a conditional approval to provide a strict timeframe to gather this data.<sup>12</sup>

Lastly, the permit does not specify how PM and opacity would be correlated because the CAM rule does not require a correlation or regression analysis.<sup>13</sup> Rather, the permit would require Ameren to perform testing as specified in 40 § 64.6(d) to collect the necessary data consistent with 40 § 64.4(e).

Therefore, the Illinois EPA has no reason to believe that the CAM plan would not demonstrate reasonable compliance with the PM limitations for Ameren Coffeen.

x. Comment III.A.1 (page 5): The CAM Plan would not contain an acceptable procedure for setting an opacity indicator. To be legally sufficient, a CAM plan "must explain how the indicator range in the CAM plan provides a reasonable assurance of ongoing compliance with the underlying PM limits in accordance with 40 CFR 64.3(a)(2)."<sup>14</sup> The permit record does not explain or provide a clear description of how the opacity indicator ranges will be derived. The CAM Plan must include a procedure for setting opacity indicator ranges that will yield ranges reflecting the proper operation and maintenance of the ESPs, with an ample margin of compliance with PM emission limits.

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<sup>10</sup> See 40 CFR § 64.4(a)(2).

<sup>11</sup> See Condition 7.1.13-1(b)(i) in the Permit.

<sup>12</sup> Id.

<sup>13</sup> A regression analysis and a correlation are not necessarily the same. Although inter-related, these two concepts are different. A correlation quantifies the degree to which two variables are related. There is no cause-effect taken into consideration. Correlation is an index (just one number) of the strength of a relationship. A regression fits a line through the data. Cause-effect must be taken into consideration since the regression line is determined as the best way to predict Y from X. Regression is an analysis (estimation of parameters of a model and statistical test of their significance) of the adequacy of a particular functional relationship.

<sup>14</sup> In the Matter of WE Energy Oak Creek Power Plant, Order Responding to Petitioners Request That the Administrator Object to Issuance of State Operating Permit, p 18 (June 12, 2009)

At most, the Statement of Basis only implies that acceptable opacity ranges will extend to "the upper limit of opacity . . . which assures compliance with the PM limit." (Statement of Basis at 23).<sup>15</sup> This approach does not comport with the CAM rule. The CAM rule is not premised on identifying and selecting the most extreme indicator range under which a source can avoid violating an emission limit. The CAM rule, 40 CFR 64.3(a)(2), when addressing indicator ranges provides that:

Such range(s) or condition(s) shall reflect the proper operation and maintenance of the control device (and associated capture system), in accordance with applicable design properties, for minimizing emissions over the anticipated range of operation conditions at least to the level required to achieve compliance with the applicable requirements.

Describing indicator ranges generally, USEPA has stated that selected ranges "should be indicative of the normal operating range under good operation and maintenance practices". USEPA, *Technical Guidance Document: Compliance Assurance Monitoring, Revised Draft* (Aug. 1998), at p 2-27. As USEPA recognized in the preamble to the CAM Rule, this approach can lead to the setting of indicator ranges well below the "upper limit" of the indicator that would assure compliance with the monitored emission limit:

The Agency understands that many sources operate well within permitted limits over a range of process and pollution control device operating parameters. Depending on the nature of pollution control devices installed and the specific compliance strategies adopted by the source or the permitting authority, part 64 indicator ranges may be established that generally represent emission levels *significantly below* the applicable underlying limit.

62 FR 54,907, Oct. 22, 1997 (emphasis added)

USEPA also has directly addressed the issue of setting opacity indicator ranges in CAM plans designed to assure compliance with PM emissions limits by coal-fired utility boilers, making clear that a margin of compliance is necessary in setting an opacity indicator range. In particular, in its *Compliance Assurance Monitoring (CAM) Protocol for an Electrostatic Precipitator (ESP) Controlling Particulate Matter (PM) Emissions from a Coal-Fired Boiler*, proposed April 2003 (Proposed ESP Protocol), USEPA indicates that:

You will establish the opacity indicator range at a level equal to or less than an opacity at which the source demonstrates a margin of compliance with the PM emission limit of at least 10 percent at normal operating conditions...*You should not select an opacity higher than the maximum opacity you observed during the calibration test program.*

Proposed ESP Protocol, p 6 (emphasis added)

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<sup>15</sup> This interpretation is consistent with the answer of Illinois EPA staff to a question at the public hearing on November 15, 2012 on the proposed significant modification. They indicated they were unsure what an appropriate margin of compliance from this "upper limit of opacity" would be in setting an opacity indicator, or, indeed, if under a CAM plan...you actually need a compliance margin." Transcript, p 30.

The results of recent PM emission testing for the boilers, as given in the Statement of Basis, provide the opacity indicator ranges for the boilers that reflect proper operation and maintenance of the ESPs. They show opacity between 6 and 8 percent for Boiler 1 and between 14 and 16 percent for Boiler 2. As explained elsewhere in the Statement of Basis, these results demonstrate the boilers' performance "when the control technology for PM is functioning correctly." (Statement of Basis, p 25, n. 26 and p 15 n. 14). As such, these levels of opacity should be the basis for opacity indicator ranges when the ESPs are properly operated and maintained, and excursions from them should be addressed through responsive actions.

An additional consideration in setting the opacity indicator ranges for the Coffeen boilers is that the upper bound should be well below 30 percent, the opacity standard that applies to the boilers. Pursuant to 35 IAC 212.124(d), which is part of Illinois' State Implementation Plan (SIP), an exceedance of this standard is presumed to signal a violation of applicable PM emission standards. The opacity indicator ranges for the Coffeen boilers, again, should be set well below the boiler's opacity limit of 30 percent.

Accordingly, the Illinois EPA must revise the CAM Plan to set out a method that will yield opacity indicator ranges that reflect proper operation and maintenance of the ESPs, including an ample margin of compliance.

**The CAM Rule does not require that Ameren include the procedure by which it will develop indicator ranges in its CAM Plan. Accordingly, it was not necessary for Ameren or the permit record to explain or describe how the opacity indicator ranges for the Coffeen boilers will be derived. The CAM Rule directly establishes requirements for the indicator ranges that are part of CAM plans. In this regard, the CAM Rule provides the following:**

**"Monitoring design criteria.**

**(a) *General criteria.* To provide a reasonable assurance of compliance with emission limitations or standards for the anticipated range of operations at a pollutant-specific emissions unit, monitoring under this part shall meet the following general criteria: ...**

**(2) The owner or operator shall establish an appropriate range(s) or designated condition(s) for the selected indicator(s) such that operation within the ranges provides a reasonable assurance of ongoing compliance with emission limitations or standards for the anticipated range of operating conditions. ... "**

**40 CFR 64.3**

The other elements of this comment are premature because specific indicator ranges for opacity have not yet been proposed by Ameren under its CAM Plan. As already discussed, Ameren has not developed indicator ranges for the Coffeen boilers based on the limited testing reported in the Statement of Basis. This is generally because testing was not conducted for the purpose of developing indicator ranges for CAM and does not represent the full range of expected operating conditions for boilers or the air pollution control equipment. Ameren has proposed to conduct testing to determine appropriate indicator ranges for opacity and scrubber pump operation under expected boiler operating conditions that can reasonable assurance compliance. This testing will use USEPA test methods specified by 35 IAC 212.110 and be more extensive, addressing a number of operational configurations for the ESPs and

FGD systems.<sup>16</sup> As already discussed, when Ameren develops and proposes these indicator ranges, the public will have an opportunity to provide comments on them. This includes comments on whether the proposed ranges will provide a reasonable assurance of compliance with the applicable PM emission standard and meet other applicable requirements of the CAM Rule.<sup>17</sup>

In addition, the CAM Rule does not provide that once a putative indicator range has been developed that would provide such reasonable assurance of compliance that the "approved" indicator range pursuant to the CAM Plan must then be adjusted to provide a further margin of compliance. In other words, the CAM Rule does not use the term "margin of compliance". It uses the term "reasonable assurance of compliance".<sup>18</sup>

x. Comment III.A.2 (page 8): The CAM Plan should require monitoring of other parameters of ESP performance in addition to opacity. Specifically, pursuant to USEPA's *CAM Technical Guidance Document, Appendix A. 25, Electrostatic Precipitator of PM Control -- Facility FF*, June 2002 (ESP CAM Example), the CAM Plan should include monitoring of voltage and current for each ESP field. This additional monitoring is particularly appropriate for the Coffeen boilers because opacity and PM are measured at different points in the flue gas stream, making the correlation between them especially attenuated. In its Proposed ESP Protocol, USEPA specifically described the difficulties of using opacity as an indicator for PM emissions, in general, due to the lack of a linear relationship between opacity and PM:

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<sup>16</sup> It is expected that the future testing will address at least three different operational configurations or modes of the ESP, with three test runs for each mode. These modes would be selected to address the anticipated range of operating conditions of each ESP. For example, testing could be conducted for a typical configuration of the ESP, operation with a number of sections of the ESP at reduced power or out of service for higher PM emissions, and operation with more sections of the ESP at reduced power out of service for even higher PM emissions. This testing will provide more data to develop the indicator range for opacity than testing conducted under a single configuration, as typically occurs with performance testing.

Because Ameren has also proposed to address the FGD systems in its CAM Plan, the future testing will also address the operational configuration of these systems. For this purpose, it is expected that most of the PM emission testing would be conducted with the typical number of recirculation pumps operating. An additional test would be conducted with one less pump operating to span the anticipated range of operation of the FGD systems. This test would be conducted under the least efficient configuration of the ESP. This additional test would provide data to address the role of the FGD in PM emissions, again over the anticipated range of FGD operation. All testing would need to be conducted in the maximum load range of the boiler and the firing rate of the boiler would not be a variable for this testing.

<sup>17</sup> As this comment is premature, the excerpt for the USEPA Order cited by the comment (In the Matter of WE Energy Oak Creek Power Plant, Order Responding to Petitioners Request That the Administrator Object to Issuance of State Operating Permit, (June 12, 2009)), is also not applicable. In that order, USEPA was addressing a specific indicator range, 20 percent opacity, which the source had included in its CAM plan for the PM emissions of the boilers at the Oak Creek Power Plant in Wisconsin. The USEPA was not addressing an indicator range that would be set in the future pursuant to a conditional approval of a CAM plan.

<sup>18</sup> It is also acknowledged that the statement concerning the future indicator ranges in the Statement of Basis, which was quoted by this comment, was both incomplete and misleading. The future indicator ranges that will be established for opacity must be consistent with the CAM Rule. In this regard, these ranges will need to reasonably assure compliance with the applicable PM limits. This will constrain or limit the levels at which the indicator ranges would be established.

Opacity, a commonly used parameter, can indicate ESP performance. If the opacity is increasing, you can reasonably assume that the PM emissions are increasing. What generally is not known on a quantitative basis is the magnitude of the mass emissions relative to any one opacity value or the increase in mass emissions relative to the increase in opacity. In addition, and perhaps most importantly, the relationship between opacity and mass emissions can vary significantly with the particle size distribution and refractive index of the ash particles. The properties of the particulate matter can be influenced by fuel changes and the number and location of ESP electrical sections in service.

Proposed ESP Protocol, p 3

Because the relationship between opacity and PM "is not robust overall operating conditions," USEPA's Proposed ESP Protocol provides that monitoring opacity alone is not sufficient. Proposed ESP Protocol, p 14. Instead, USEPA's "presumptively acceptable" approach, as provided in USEPA guidance (see 40 CFR 64.4(b)(5)), provides that the source also should monitor other ESP operating parameters, specifically, voltage and current of each ESP field, and run a calibrated computer model to calculate ESP efficiency when elevated opacity occurs.

In the case of the Coffeen boilers, the correlation of opacity to PM emissions becomes even less robust than under typical coal-fired power plant operating conditions because of the intervening effect of the FGD in the stream. While opacity is measured at the output of the ESPs, PM is measured through stack tests that occur after the flue gas stream also has passed through the FGD. This will further complicate establishing a relationship between opacity and PM. While the ESPs are the primary control device, the FGD also will impact PM emissions. If the FGD is performing at a high level during testing, the testing will correlate a relatively higher level of opacity to a relatively lower level of PM, thus leading to the conclusion that a relatively higher level of opacity is sufficient to assure compliance with the PM emission limit. Also, the scrubber can, under some conditions, increase PM loading in the flue gas stream. Because of the particularly attenuated relationship between opacity and PM for the Coffeen boilers, the Illinois EPA should follow USEPA guidance and require monitoring of the voltage and current of the ESP fields in addition to opacity, in order to assure that the ESPs are properly operated and maintained.

**Illinois EPA believes that the CAM Plan submitted by Ameren satisfies the criteria and requirements in 40 CFR 64.3 for the plan to be conditionally approved in accordance with 40 CFR 64.6(a) and (b). USEPA indicates in the introduction to the *CAM Technical Guidance Document* that the examples of approaches to CAM that are attached to that document are merely examples and are not prescriptive.<sup>19</sup> As such, the use of total power to the ESP in the ESP CAM Example as the indicator for performance of an ESP does not mean that**

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<sup>19</sup> As stated in the introduction to Appendix A of the *CAM Technical Guidance Document*, "Note that the resulting examples are not necessarily the only acceptable monitoring approaches for the facility or similar facilities; they are simply examples of different approaches used by particular facilities. The owner or operator of a similar facility may propose a different approach that satisfies part 64 requirements. Also, the permitting authority may require additional monitoring." *CAM Technical Guidance Document*, September 2004, p A-v.

opacity, with continuous monitoring of opacity, is not an acceptable indicator of ESP performance in a CAM plan. Indeed, the ESP CAM Example specifically addresses relatively small coal-fired boilers, each with controlled PM emissions that are less than 100 tons per year so that continuous monitoring is not required under the CAM Rule, 40 CFR 64.3 (b)((4)(ii)). Thus, the ESP CAM Example does not address, nor does it provide any insight, on an appropriate approach to CAM for the ESPs on the Coffeen boilers, for which continuous opacity monitoring is required.

The Proposed ESP Protocol developed by USEPA, although also not prescriptive, is more informative, as it addresses boilers for which continuous opacity monitoring is performed.<sup>20</sup> In the Proposed ESP Protocol, the first performance parameter used for the ESP is opacity. The second performance parameter that is used is the output of a computer model for ESP performance. As explained by USEPA in the Proposed ESP Protocol, page 14: "Because the relationship between PM and opacity is not robust overall operating conditions, the second CAM indicator is the output of the computer model calculated to better calculate ESP performance." Thus, the question posed by the Proposed ESP Protocol as compared to Ameren's CAM Plan is whether Ameren's CAM plan should be found unacceptable because it does not also require use of a computer model for ESP performance so as to potentially "be better". The basic criterion for an acceptable CAM Plan, as specified by 40 CFR 64.3(a), is that the plan will provide "a reasonable assurance of compliance" with the applicable standard or emission limitation. This criterion has been satisfied.

In this regard, opacity monitoring is a well-established means to address emissions of PM.<sup>21</sup> While standards or limits for opacity commonly address average opacity over a period of six minutes, based on a number of individual readings or measurements during such period, opacity can also be determined for shorter or longer periods, including on an hourly basis, as proposed by Ameren in the CAM Plan. For the Coffeen boilers, the use of opacity as the CAM indicator will provide an effective means of assuring compliance with the applicable PM standards on an ongoing basis between the periodic emissions testing. Indeed, for these boilers, opacity monitoring is currently required by both federal rules (40 CFR 75.14) and state rules (35 IAC Part 201 Subpart L) as a means to address proper operation as related to PM emissions. Moreover, 40 CFR 64.3(d)(1) specifically provides that if a COMS is required for an emission unit pursuant to the Clean Air Act or regulations thereunder, the COMS shall be used to satisfy CAM. 40 CFR 64.3(d)(2) further provides that a COMS that must satisfy the monitoring requirements of 40 CFR Part 75, like the COMS on these boilers, shall be deemed to satisfy the general design criteria for a CAM plan, provided that monitoring with a COMS may be subject to the criteria for establishing indicator ranges.<sup>22, 23</sup>

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<sup>20</sup> While USEPA's Proposed ESP Protocol is more informative for the present case than the USEPA CAM Example, it is noteworthy that this protocol was only proposed by USEPA and was never finalized.

<sup>21</sup> Numerical values of opacity can be reliably determined by observations of the exhaust from emission units by individuals who have been properly trained and demonstrated their ability to make such observations in accordance with USEPA Method 9. Numerical measurements of observations can also be made with monitoring instruments that are installed in the stack or ductwork of an emission unit, in which case opacity can be determined on a continuous basis.

<sup>22</sup> In addition, 40 CFR 64.4(b) also provides that a COMS that satisfies the requirements and specifications in 40 CFR 64.3(d), as the COMS on these coal-fired

Given these provisions of the CAM rules, it was appropriate for Ameren to have selected opacity as the indicator related to the ESPs on the boilers. Ameren could have proposed in its CAM Plan to also use operational parameters of the ESPs. However, this would have made the CAM Plan far more complicated than the proposed plan. This is because, as recognized by USEPA in its Proposed ESP Protocol, ESPs installed on coal-fired utility boilers are composed of many sections, each with its own electrical system. The overall performance of an ESP is affected by how each section in the ESP is performing and the position of the ESP sections relative to each other. If Ameren had proposed in its CAM Plan to use ESP operating parameters, it would have been reasonable for it to address both of these aspects of the operation of the ESPs with a computerized ESP model.<sup>24, 25</sup>

The circumstances for the ESPs are not affected by the fact that opacity and PM emissions of the boilers are measured at different locations in the ductwork, upstream and downstream of the FGD systems, respectively.

x. Comment IIIB (page 9) - The CAM Plan's monitoring of the FGD systems is not designed to assure their proper operation. The CAM Plan must include monitoring of additional parameter(s) relating to the FGD systems. In this regard, neither the CAM Plan nor the Statement of Basis explain how monitoring

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boilers do, is "presumptively acceptable monitoring" for purposes of CAM. As Ameren's CAM Plan would use presumptively acceptable monitoring, Ameren did not have to provide justification for the appropriateness for the use of continuous opacity monitoring in its CAM Plan other than an explanation of the applicability of such monitoring to these boilers, unless data or information is brought forward to rebut that assumption.

<sup>23</sup> As explained by USEPA in the preamble to the adoption of the CAM Rule, CAM monitoring with a required COMS must be conducted using an appropriate indicator range for opacity that satisfies 40 CFR 64.3(a)(2) and (3). See 62 FR 54923, October 22, 1997.

<sup>24</sup> As already generally discussed, in its Proposed ESP Protocol, USEPA recognized that ESP operating parameters could not readily be used to directly address the performance of an ESP on a large coal-fired boiler. In this proposed protocol, USEPA suggested a two-stage approach to CAM monitoring for coal-fired boilers. The first stage relied on opacity. The second stage, which would involve ESP operating parameters, would only come into play when opacity exceeded a threshold value. However, the ESP operating parameters would not be directly used as indicators of compliance. Under USEPA's Proposed ESP Protocol, the indicator under a CAM plan would be the "required" efficiency of the ESP as set from emission testing. When the opacity threshold for a boiler was exceeded, the relevant operational data for its ESP would then be used with an appropriately tailored computerized ESP model. Finally, the control efficiency of the ESP calculated by the computer would be compared to the indicator value or range of control efficiency established under the CAM Plan, to determine whether an exceedance actually occurred. As explained by USEPA, a less accurate indication of ESP performance (opacity) would be used to warn a source that ESP performance had deteriorated to a level that required the source to run a computer model to confirm a reasonable assurance of compliance.

<sup>25</sup> The fact that the CAAPP permit requires Ameren to conduct operational monitoring for various operating parameters of the ESP does not show that the CAM Plan should be based on these operating parameters. It is appropriate that such operating records be required for the ESP. In particular, these records will serve to facilitate corrective action in the event of opacity excursions. In particular, when an opacity excursion is caused by an electrical problem with the ESP, as is often the case, these records enable Coffeen to readily determine this and assist in the diagnosis of such problems. If electrical problems at the ESP are not the cause of an excursion, it will also enable Ameren to focus on other aspects of the operation of the ESP and associated boiler.

scrubber recycle pumps will assure compliance with the PM emission limits or detail a procedure for determining an indicator range, again failing to meet the requirement that permitting authorities "must explain how the indicator range in the CAM Plan provides a reasonable assurance of ongoing compliance with the underlying PM limits in accordance with 40 CFR 64.3(a)(2)."

Based on USEPA guidance, though, monitoring the scrubber recycle pumps, alone, is insufficient to assure compliance with PM emission limits. USEPA has made clear that "monitoring which fails to take into account significant process or control device parameters is unlikely provide the reasonable assurance of compliance with emissions limitations or standards." 62 FR 54,919. With respect to wet scrubbers used for PM control, USEPA has stated:

Several parameters can be used as indicators of wet scrubber performance...For PM control, the primary indicators of wet scrubber performance re pressure differential and scrubber liquid flow. Other parameters that can indicate wet scrubber performance include gas flow rate, scrubber liquid solids content, scrubber outlet temperatures, and scrubber liquid makeup or blowdown rates. USEPA, *CAM Technical Guidance Document*, App. B.4, *Wet Scrubbers for PM Control* (Apr. 2002), at B-28.

USEPA does state that pump monitor current can be monitored as a surrogate for liquid flow rate; however, it is a "less reliable" indicator of scrubber performance than liquid flow rate itself. The CAM Plan should require Ameren to monitor the standard indicator of scrubber liquid flow rate. Accurate monitoring of scrubber operation is particularly important here because of the attenuated relationship between opacity and PM for the Coffeen boilers. As written, the CAM Plan's monitoring does not "provide the reasonable assurance of compliance with emissions limitations," as required by USEPA. See 62 FR 54,919. It is critical that the CAM Plan ensure proper operation and maintenance of both PM control devices.

**This comment is also premature as specific indicator ranges for the FGD systems have not been formally proposed by Ameren. This comment also reflects a flawed understanding of the nature and operation of the FGD systems on the Coffeen boilers. First, these FGD systems are control devices for emissions of sulfur dioxide (SO<sub>2</sub>).<sup>26</sup> They were not installed to assist the ESPs in controlling PM emissions. Ameren has submitted a CAM Plan that addresses the operation of the FGD systems only to address any secondary effect these systems may have on PM emissions. Second, for these FGD systems, the number of recycle pumps that are in service indicates liquid flow rate through the systems. Both of these systems have a number of identical recycle pumps that operate in parallel to supply slurry to the absorber sections in the systems. The rate of liquid flow to the absorbers is determined by the number of pumps that are in service.<sup>27</sup> Accordingly, for the FGD systems, Ameren's CAM Plan generally provides for the monitoring that**

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<sup>26</sup> As related to SO<sub>2</sub> emissions, the performance of the FGD systems on the Coffeen boilers is directly addressed as continuous monitoring systems are operated for SO<sub>2</sub> emissions.

<sup>27</sup> A minimum number of recycle pumps need to be on or in service for normal operation the FGD systems. The systems have "extra" pumps, which enables maintenance of pumps without interrupting the operation of the systems. Spare pumps are also immediately available when a pump fails. The pumps do not have variable speed drives. The liquid flow rate of the FGD systems is managed by the number of pumps that are in service.

would be recommended by USEPA guidance if these systems were PM control devices. That guidance accommodates monitoring of liquid flow rates by indirect means. This is appropriate here, where Ameren has elected to include the FGD systems in its CAM Plan for the PM emissions of the Coffeen boilers.<sup>28</sup>

x. Comment IIIC (page 10): The CAM Plan would not include sufficient corrective actions in response to excursions. New Condition 7.1.13-2(c)(ii)(A) in the draft of the modified permit would set out the actions that Ameren would be required to take under its CAM Plan in response to excursions of indicator ranges. Essentially, the draft condition would require Ameren to restore operation of the boilers (including the control device and associated capture system to their normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. This standard does not provide enough detail to assure prompt correction of improper operation. The CAM Plan must include practically enforceable responsive actions to excursions from indicator ranges and should be revised to include site-specific description of required responsive actions.

An example of effective responsive actions can be found in Condition 72.2.II.2 of the Title V permit for the Huntley Steam Generating Station in Tonawanda, New York, near Buffalo. This condition incorporates tiered responsive actions for the opacity indicator.<sup>29</sup> Under that permit, increasing levels of opacity trigger requirements of more aggressive responsive actions, culminating with a requirement that a unit be removed from service if rolling 24-hour opacity exceeds 19 percent or rolling 168-hour opacity exceeds 18 percent.

The CAM Plan for the Coffeen boilers should include a similar tiered requirement for responsive actions, beginning with inspection requirements at lower levels of opacity and culminating with required shutdown of a boiler at a level near the upper bound of opacity within which compliance with the PM emission limit can be assured. This site-specific description of necessary responsive actions will be more enforceable than the currently vague reference to returning boilers to their normal manner of operation "as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions."

**This comment did not justify any changes to Condition 7.1.13-2(c)(ii)(A) in the modified permit. This condition reiterates the relevant language in 40 CFR 64.7(d) (1) with respect to the response that Ameren must take to excursions or exceedances identified pursuant to its CAM monitoring.<sup>30</sup> As**

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<sup>28</sup> Direct measurements of liquid flow are also more challenging for slurry materials than for water or water with materials that are in solution.

<sup>29</sup> New York State Department of Environmental Conservation, Permit ID: 9-1464-00130/00020.

<sup>30</sup> 40 CFR 64.7(d) provides:

"(d) *Response to excursions or exceedances.* (1) Upon detecting an excursion or exceedance, the owner or operator shall restore operation of the pollutant-specific emissions unit (including the control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely

such, it is appropriate that this condition be included in the modified permit in the form in which it was set out in the draft permit without any changes.

The inclusion of "tiered response requirements" in the Title V Permit for the Huntley Station does not support development and imposition of similar requirements for the Coffeen boilers. A basic question posed by such requirements is whether they are consistent with the basic requirements for a CAM Plan, i.e., that they work to provide a reasonable assurance of compliance. In this regard, it is unclear whether the "Level One" actions required for the Huntley boilers even constitute a response to an excursion or exceedance.<sup>31</sup> Moreover, when an exceedance or excursion is identified, a CAM Plan, as approved by the permitting authority, should not predetermine the source's response based on the magnitude of the occurrence. As confirmed by 40 CFR 64.7(d) (2), the adequacy of a source's response to an exceedance or excursion is to be evaluated by a regulatory authority on a case-by-case basis.<sup>32, 33</sup>

x. "Other Conditions of the Permit" Comment IV"A" (page 11): The proposed changes to Conditions 7.1.9(c) (ii) and (iii), relating to records to address compliance with opacity and PM emission limits, would be legally insufficient. The Illinois EPA proposes to delete Condition 7.1.9(c) (ii), which would have required Ameren to identify the "upper bound of the 95 percent confidence interval (using a normal distribution and 1-minute averages) for opacity measurements from each boiler, considering an hour of operation, within which compliance with [PM emission limits] is assured . . . ." The Illinois EPA also proposes to delete the corresponding recordkeeping requirement in Condition 7.1.9(c) (iii), which would have required Ameren to keep records for "[e]ach hour when the measured opacity of an affected boiler was above the upper bound. In its place, Ameren would instead be required to keep records for "[e]ach three-hour block average period when the average opacity of an affected boiler was above 30 percent . . . ." According to the Statement of

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recurrence of the cause of an excursion or exceedance (other than those caused by excused startup or shutdown conditions). Such actions may include initial inspection and evaluation, recording that operations returned to normal without operator action (such as through response by a computerized distribution control system), or any necessary follow-up actions to return operation to within the indicator range, designated condition, or below the applicable emission limitation or standard, as applicable.

(2) Determination of whether the owner or operator has used acceptable procedures in response to an excursion or exceedance will be based on information available, which may include but is not limited to, monitoring results, review of operation and maintenance procedures and records, and inspection of the control device, associated capture system, and the process."

<sup>31</sup> Condition 72.2 .II.2.a of the Huntley permit, which addresses "Level One" actions, addresses certain actions that the source must take when "...the 24-hour or 168-hour baseline opacity is higher than normal and increased attention should be given to the operation of the boiler and the ESP performance."

<sup>32</sup> The cited provisions of the Huntley permit also appear problematic as opacity values with two different averaging times are used, i.e., 24 and 168 hours, both of which would be longer than the compliance period of the applicable PM limit, i.e., 0.17 pound/mmBtu, pursuant to 6 NYCRR 227-1.2(b).

<sup>33</sup> As a whole, the provisions of the Huntley permit cited by this comment would suggest that they were additional obligations taken on by a source in the context of settlement of an enforcement action, as they appear to go beyond those necessary for compliance with an applicable emission standard.

Basis, this value for opacity assures compliance with the PM limit; however, "it is not possible or appropriate to draw additional conclusions from the data beyond that limited conclusion." (Statement of Basis, p 15, n. 14).

This proposed revision to Condition 7.1.9(c)(ii) would not meet and would make the permit non-compliant with Title V requirements. 40 CFR 70.6(a)(3)(i)(B) and (c)(1) provide that Title V permits must require monitoring must provide data representative of the source's compliance with the underlying permit limits. As USEPA has stated numerous times in orders,<sup>34</sup> where opacity is used as a parameter to ensure compliance with a PM limit, the opacity range correlating to compliance with the PM emission limit must be "set as enforceable limits" in the permit. USEPA has required that the correlation be set so that it provides direct evidence of compliance or non-compliance with the permit. As a result, the draft permit would fail to meet the requirement that it include "monitoring . . . requirements sufficient to assure compliance with the terms and conditions of the permit". The modified permit must include enforceable opacity limits corresponding to violation of PM emission standards, set no lower than the 30 percent opacity standard in 35 IAC 212.123. While Illinois' SIP, 35 IAC 212.124(d)(2)(A), already also provides that violation of the 30 percent opacity standard presumptively constitutes a violation of the relevant PM standards, a lower enforceable opacity limit may be necessary to ensure compliance with the PM standards and to conclusively demonstrate violations.

**Illinois EPA disagrees that the proposed changes to Condition 7.1.9(c) would result in the Periodic Monitoring for the Coffeen boilers being insufficient in the period before CAM monitoring would begin. The changes to this condition maintain consistency with 40 CFR 70.6(a)(3)(i)(B) (Section 39.5(7)(d)(ii) of the Act).<sup>35, 36</sup> Compared to the initial permit, essentially**

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<sup>34</sup> Refer to:

*In the Matter of Tampa Electric Co., F.J. Gannon Station*, Objection to Proposed Part 70 Operating Permit No. 0570040-002-AV (Sept. 8, 2000), p 8.

*In the Matter of the Huntley Generating Station*, EPA Administrator Order (July 31, 2003), p 21.

*In the Matter of Dunkirk Power LLC*, EPA Administrator Order (July 31, 2003), pp 19 - 20 and 20.

*In the Matter of Midwest Generation, LLC, Waukegan Generating Station*, EPA Administrator Order (Sept. 22, 2005), pp 19 and 20.

<sup>35</sup> 40 CFR 70.6(a)(3)(i)(B) provides as follows: "(3) *Monitoring and related recordkeeping and reporting requirements.* (i) Each permit shall contain the following requirements with respect to monitoring: ... (B) Where the applicable requirement does not require periodic testing or instrumental or noninstrumental monitoring (which may consist of recordkeeping designed to serve as monitoring), periodic monitoring sufficient to yield reliable data from the relevant time period that are representative of the source's compliance with the permit, as reported pursuant to paragraph (a)(3)(iii) of this section. Such monitoring requirements shall assure use of terms, test methods, units, averaging periods, and other statistical conventions consistent with the applicable requirement. Recordkeeping provisions may be sufficient to meet the requirements of this paragraph (a)(3)(i)(B) of this section;"

<sup>36</sup> 40 CFR 70.6(c)(1) does not appear to impose any additional requirements for the subject monitoring. As reiterated by USEPA in the order for the Waukegan Generating Station cited by this comment, "EPA has interpreted section 70.6(c)(1) as requiring that title V permits contain monitoring required by applicable requirements under the Act (e.g., monitoring required under federal rules such as MACT standards and monitoring required under SIP rules) and such monitoring as may be required under 40 C.F.R. § 70.6(a)(3)(i)(B)." *In the Matter of Midwest Generation, LLC, Waukegan Generating Station*, EPA Administrator Order (Sept. 22, 2005), p 19.

all that has occurred in Condition 7.1.9(c) of the modified permit is that a specific value for the level of opacity, 30 percent, 3-hour average, is now set as part of the Periodic Monitoring to assure compliance with the PM standard. This value takes the place of the statistical criterion or "method" that would have been required for the future establishment by Ameren of value(s) of opacity that would serve to assure compliance with the PM standard.<sup>37</sup> The "alternative" approach to Periodic Monitoring for PM that is now present in the modified permit is consistent with the relevant conclusion from the USEPA's decision in *In the Matter of Midwest Generation, LLC, Waukegan Generating Station*.<sup>38</sup> This order does not state or suggest that the value of opacity that is selected for Periodic Monitoring must directly correlate with a violation of the PM standard, as implied by this comment:

"In this case, since IEPA used opacity and (sic) as one of the surrogate methods to assure compliance with PM limits, the Title V permit must include a specific opacity limit or a method for determining an opacity limit that would correlate the results of the PM testing results (sic) and the opacity limit."

*In the Matter of Midwest Generation, LLC, Waukegan Generating Station*, EPA Administrator Order (Sept. 22, 2005), p 20.

The selected value for opacity, 30 percent, was determined using available results for PM testing for the Coffeen boilers, as provided in the Statement of Basis. This data indicates that opacity from the boilers would have to be greater than 30 percent on a 3-hour average before PM emissions would actually be greater than the applicable PM standard.<sup>39</sup> Because 35 IAC 212.123

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<sup>37</sup> By way of further explanation, Ameren appealed Condition 7.1.9(c)(ii) in the initial CAAPP permit, which would have required it to develop a value for opacity based on the results of emissions testing, with a numerical value for opacity set at the "upper bound of the 95 percent confidence interval." Ameren argued that this requirement imposed an "unreasonable burden" and would not generate information that could be used in conjunction with other actions to address compliance with the PM standard(s). Settlement discussions confirmed the difficulties in this condition of the initial permit. Among other things, it required the correlation between opacity and PM emissions to meet a statistical criterion as related to the confidence interval. This criterion would not necessarily be able to be met given the nature of the correlation between opacity and PM emissions and the data that would be available from emissions testing to develop the correlation.

<sup>38</sup> The USEPA's Order in *In the Matter of Midwest Generation, LLC, Waukegan Generating Station*, is considered the appropriate guidance from USEPA for this proceeding. This is because it is more recent and addressed Title V permitting of a coal-fired power plant in Illinois.

<sup>39</sup> The analysis for the selected opacity value focused on Boiler 2 because its measured PM emission rate and accompanying level of opacity were higher than those of Boiler 1. The analysis also focused on an opacity value of 30 percent because that is the opacity standard for the boilers set by 35 IAC 212.123(a). Since the analysis concluded that Boiler 2 would comply with the PM standard even if the opacity was 30 percent, 3-hour average, the analysis did not need to separately address Boiler 1 or to consider opacity values lower than 30 percent.

The testing for Boiler 2 showed PM emissions that were only 2 percent of the applicable standard with hourly opacity of 15 percent. With a linear relationship between PM emissions and opacity and the fact that opacity should be 0 percent if there are no PM emissions, these test results would indicate that if the opacity from Boiler 2 were 30 percent, its PM emissions would be only 4 percent of the standard. (2% x 30%/15% = 4%)

generally constrains opacity of the boilers to no more 30 percent, it would be of limited value to further consider the PM emission rates that might accompany higher levels of opacity. In this regard, such an evaluation would address circumstances in which Ameren should have already taken corrective actions because of the opacity of a boiler and for which enforcement could be initiated. It is also unlikely that such an evaluation would lead to definitive determinations of the levels of opacity that are indicative of a violation of the PM standard. This is because of the small amount of test data upon which such an evaluation would be based. The general nature of the relationship between PM emissions and opacity also means that levels of opacity from the boilers at which compliance with the PM standards are reasonably assured can be much more readily determined than values of opacity that constitute clear evidence of actual violations of those PM standards.<sup>40</sup> Finally, Illinois EPA did not view such an evaluation as a worthwhile use of resources, especially as its conclusions would likely only be applicable for a short period of time until the results from the more extensive CAM testing become available.

x. Other Conditions of the Permit "Comment IV-E" (page 14): Draft Condition 7.1.10-2(d)(ii), relating to the reporting, would be legally insufficient and must be revised. The Illinois EPA proposes to delete the language "if requested by the Illinois EPA" from the requirement that Ameren report with its quarterly operating report "the operating status of the opacity monitoring system, including the dates and times of any periods during which it was in operative". The Statement of Basis did not describe the basis for this change. Ameren should be required to report all periods of COMS downtime in its quarterly operating reports, whether or not requested by the Illinois EPA. In addition, the draft condition, as written, includes superfluous language following the proposed deletion.

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In fact, the analysis was more involved because the testing was conducted using USEPA Method 5B, as appropriate under the federal New Source Performance Standards, 40 CFR 60 Subparts D, Da, Db and Dc, for testing of the PM emissions of coal-fired boiler equipped with wet flue gas desulfurization systems. The testing was not conducted by USEPA Method 5 or another method specified by 35 IAC 212.110(a). For coal-fired boilers, the results of testing by USEPA Method 5 are generally much higher than those from testing by USEPA Method 5B. This is because Method 5 specifies that the filter in the testing apparatus be maintained at a lower temperature. After sampling, Method 5 also specifies that filters be desiccated or dried at a lower temperature before being weighed. The results of testing by Method 5B can be adjusted from Method 5B to Method 5 using a factor of 2.27, as developed from data reported by USEPA in *Development and Evaluation of Method 5B - Background Information for Proposed Reference Method*, EPA-450/3-84-16, September 1984. For Boiler 2, the adjusted test results, as would have been measured if Method 5 had been used, are about 5 percent of the applicable PM standard ( $2\% \times 2.27 = 4.54\%$ ,  $\approx 5\%$ ). Since the monitored opacity is unaffected by the PM test method, with the adjusted PM test results, the PM emissions of Boiler 2 would still be only 10 percent of the standard if the opacity from Boiler 2 were 30 percent ( $5\% \times 30\%/15\% = 10\%$ ).

<sup>40</sup> In this regard, the fact that levels of opacity from the Coffeen boilers at or below 30 percent reasonably assure compliance with the PM limit does not mean that opacity above 30 percent indicates actual violations of the PM standards. It is for this reason that the Statement of Basis, p 15, n 14, explains that "...although the emissions data was sufficient to confirm the adequacy of the relationship between the opacity limit and compliance assurance for PM, it is not possible or appropriate to draw additional conclusions from the data beyond that limited conclusion."

This comment does not demonstrate that the scope of the reporting required by Condition 7.1.10-2(d)(ii), which addresses routine reporting related to the operation of the continuous opacity monitoring systems on the Coffeen boilers, should be expanded.<sup>41</sup> Standard practice for the reporting of downtime of continuous monitoring systems by sources is to provide summary reporting of downtime unless the amount of downtime exceeds a particular threshold. In particular, refer to 40 CFR 60.7(c) and (d).<sup>42</sup> For the continuous opacity monitoring systems on the Coffeen boilers, this comment has not provided any reasons to deviate, on a case-by-case basis, from this standard practice. The comment also does not provide any explanation why the standard practice for reporting of down-time for continuous monitoring systems should be considered "legally insufficient."

The Illinois EPA agrees that there was a typographical error in the draft condition.<sup>43</sup> This error will be corrected in a future revision of the permit. Unfortunately, this correction was inadvertently missed when the proposed version of the modified CAAPP permit was prepared for submittal to USEPA.

x. Comment - Other Conditions of the Permit "Comment IV-B" (page 13): In the draft of the modified permit, the proposed deletion of Condition 7.1.10-2(d)(iv)(A)(IV), relating to reporting that is required for the Coffeen boilers "for periods when PM emission were in excess of the limitations in Condition 7.1.4(b)," is legally insufficient and must be revised. In particular, for violations of the PM standard, the Illinois EPA proposes to remove the requirement, as present in the initial CAAPP permit, that Ameren must include in its quarterly operating reports "[t]he percent opacity measured for each six-minute period during the exceedance". The Statement of Basis explains that this condition would "be changed to correspond with the new approach for monitoring opacity and PM as discussed above for Condition 7.1.9(c)". This explanation does not provide a basis for deleting the requirement to report the opacity measured from a boiler during a violation of

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<sup>41</sup> The element that has been removed from this condition, which required reporting of certain information "if required by the Illinois EPA," was redundant and/or inappropriate. It was also inconsistent with reporting requirements of the NSPS, 40 CFR 60.7(c) and (d), for operation of monitoring systems, which generally provide guidance on the appropriate nature of these requirements and are indirectly applicable to the boilers via the provisions of the Acid Rain Program, 40 CFR Part 70.

In this regard, upon specific request from the Illinois EPA, Ameren is generally required to provide copies of any records that are required to be kept by the permit to the Illinois EPA. It was not necessary for this provision to restate this general obligation.

<sup>42</sup> 40 CFR 60.7(d)(1) provides that a source does not need to supply detailed information about the operation of a continuous monitoring system if the downtime of the system is less than 5 percent of the total operating time for the reporting period and may instead provide a summary report as further described in the remainder of 40 CFR 60.7(d).

Condition 7.1.10-2(d)(i) requires Ameren to submit summary reports for the continuous opacity monitoring systems on the Coffeen boilers.

<sup>43</sup> When deleting the phrase "required by the Illinois EPA" in Condition 7.1.10-2(d)(ii), instead of deleting the conjunction "or" that followed the phrase, the "if" that preceded this phrase was incorrectly deleted. This will be corrected by restoring the word "if" and deleting the "or". In particular, Condition 7.1.10-2(d)(ii) would be corrected as follows, "The operating status of the opacity monitoring system, including the dates and times of any periods during which it was inoperative, if ~~or~~ the opacity monitoring system downtime was more than 5 percent of the total operating time for an affected boiler during the quarter."

the PM standard. Given that opacity is continuously monitored by the COMS, this requirement would not be burdensome. It would supply useful information to both the Illinois EPA and the public to enforce other permit requirements. The original condition should be retained.

Illinois EPA disagrees that Condition 7.1.10-2(d)(iv)(A)(IV) from the initial CAAPP permit should be retained in the modified permit. In the modified permit, the Periodic Monitoring that initially applies for the boilers for PM, as well as the CAM monitoring that will shortly apply, are based on average opacity for periods longer than 6-minutes. As such, data for average opacity for individual 6-minute periods during a PM exceedance will not provide information that is meaningful relative to the exceedance of the PM standard.<sup>44</sup> The modified permit continues to require Ameren to report information that is relevant for exceedances of the PM standards.<sup>45</sup>

Incidentally, it is certainly reasonable to expect that Ameren would be able to readily provide 6-minute average opacity data for a boiler for periods when the PM standard is exceeded. However, this does not constitute a sufficient basis by itself to require reporting of this data by Ameren. In order for reporting of this data to be required, the data must serve a useful purpose that justifies any effort that would be needed for Ameren to report this data. While the comment claims that this data "would supply useful information to both the Illinois EPA and the public to enforce other permit requirements," the comment does not identify those "other permit requirements". It is not apparent what those other requirements might be since the modified permit does require Ameren to report appropriate information for exceedances of the PM standard, as well as exceedances of the opacity standard.

x. Other Conditions of the Permit "Comment IV-C" (page 13): Draft Condition 7.1.10-3(a)(i), relating to requirements for immediate reporting for continued operation during malfunctions and breakdowns, is legally insufficient and must be revised. The Illinois EPA proposes to increase the duration of opacity exceedances that triggers Ameren's requirement to immediately notify the Illinois EPA from five or more 6-minute averaging periods to eight or more periods. The Statement of Basis, page 18, explains that the additional 18 minutes are necessary to provide "a sufficient opportunity for Ameren to take corrective action before needing to immediately report to the Illinois EPA". This explanation is not reasonable.

Pursuant to 35 IAC 212.123 and 212.124, opacity exceedances of two six-minute averaging periods constitute violations of opacity and PM emission standards. Exceedances of 30 minutes in duration are serious violations that should be brought to the Illinois EPA's attention immediately. This condition allows Ameren to notify Illinois EPA by "telephone (voice, facsimile, or electronic)," a process that with modern communication technologies would take one worker less than one minute. This process is not burdensome and would not

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<sup>44</sup> The contents of the quarterly operating reports for exceedances of the 30 percent opacity standard is separately addressed in Condition 7.1.10-2(d)(iii). For opacity exceedances, Ameren is required to include information for each 6-minute exceedance in its quarterly reports (Condition 7.1.10-2(d)(iii)(C)).

<sup>45</sup> For example, Condition 7.1.10-2(d)(iv)(A)(5) requires that Ameren provide "A detailed explanation of the cause of the exceedance, including whether the exceedance occurred during startup, malfunction or breakdown."

interfere with the corrective action process described in the Statement of Basis, page 17, note 17. The original condition should be retained.

This comment does not show that the planned change to this condition was improper and that the initial condition should have been retained in the modified permit. Condition 7.1.10-3(a) deals with reporting for continued operation of a boiler with excess opacity or PM emissions, including continued operation during malfunction or breakdown. It requires Ameren to provide certain "incident specific" notifications and reports to the Illinois EPA for such incidents. All such incidents must also be reported by Coffeen in its quarterly reports under Condition 7.1.10-1(b) (periodic reporting of deviations) and Condition 7.1.10-2(d) (reporting of opacity and PM emissions).<sup>46</sup> This comment specifically addresses the requirement in Condition 7.1.10-3(a)(i) that Ameren must immediately notify the Illinois EPA when the opacity from a boiler exceeds the opacity standard for a specified number of 6-minute averaging periods, unless Ameren has begun shutdown of the boiler by such time.

Ameren appealed Condition 7.1.10-3(a)(i) in the initial permit. In the settlement negotiations, Ameren explained that it objected to having to provide notifications for opacity exceedances at a point in time when the circumstances surrounding the exceedances may still be unfolding or investigations are only at an initial stage. It became apparent that some of the assumptions that the Illinois EPA had made when initially selecting a timeframe of 30 minutes (five 6-minute averaging periods) for immediate notification were not correct. The Illinois EPA had assumed that 30 minutes would provide a reasonable opportunity for Ameren to complete corrective action so that it would not need to undertake immediate reporting to the Illinois EPA for opacity exceedances that were relatively brief and accordingly likely minor in nature. In addition, it was expected that 30 minutes would provide adequate time for Ameren to conduct an initial evaluation for more serious incidents, for which immediate reporting would be needed, so that such reports would be able to include useful information. Finally, it was also expected that 30 minutes would provide appropriate incentives for rapid implementation of corrective actions. However, it is now recognized that 30 minutes is not adequate for these purposes. Therefore, the length of time before the immediate notification requirement is triggered has been increased from five to eight 6-minute averaging periods (30 minutes to 48 minutes). Ameren will now have 18 additional minutes in which to correct the problem causing excess opacity or begin to shut down a boiler before it needs to provide immediate notification. This will more effectively accomplish the underlying purposes of this requirement. The resulting consequences for compliance are expected to be trivial given the relatively small amount of additional time that Ameren has been provided.<sup>47</sup>

Comment - Other Conditions of the Permit "Comment IV-D" (page 13): Draft Condition 7.2.6(a)(i), relating to work practices for fugitive dust sources,

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<sup>46</sup> Condition 7.1.10-3(a)(ii) also requires incidents in which the PM standard(s) may have been exceeded (i.e., actually were exceeded or may have been exceeded based on relevant information that is available for an incident) to be reported to the Illinois EPA within 15 days.

<sup>47</sup> While the rule set forth at 35 IAC 212.124(d)(2) may provide that violations of the opacity standard may be presumed to also constitute violations of the applicable PM standard, the nature and extent of any such presumption has not been adjudicated in the context of an actual enforcement action.

would be legally insufficient and must be revised. The Illinois EPA proposes to require control measures that are "established," which is defined as control measures that "may include" a list of identified controls. This change would render the condition so vague as to be unenforceable. In the original condition, the fugitive emission sources were *required* to implement the identified controls (enclosure, natural surface moisture, application of dust suppressants, and use of dust collection devices). Based on the revised language, though, it would be impossible to know whether any specific control is "established", and therefore whether the source has complied with the requirement to apply the control (and the corresponding reporting requirements in Condition 7.2.9). Additionally, one proposed change should be revised to remove superfluous language.

### Response

The revised conditions originated from settlement discussions involving the administrative appeal, which included legal challenges to various components of periodic monitoring for the coal handling, coal processing and fly ash handling operations. In comparison to the initial permit issued in 2005, the revisions were mostly stylistic in nature, with the primary aim of introducing the concept of "established control measures" from the record-keeping condition to the earlier inspection condition. The language of the revisions retained the intent of the original inspection condition allowing the Permittee to select the control measures used to prevent dust and, similarly, contained an illustrative list of the types of control measures that would be employed in this effort.

The Illinois EPA disagrees that the revised conditions lack specificity or are not practically enforceable. The permit issued in 2005, as well as the draft permit conditions, simply codify the use of dust control measures that have been employed by the power plants for quite some time. The Illinois EPA did not identify the specific control measures that will be used for each affected operation unit but, rather, placed the onus of such identification upon the source, who must identify such measures within 60 days of permit issuance and thereafter maintain an on-going record of the same. However, the permit does generally identify the control measures to be employed by the source, as they are described in both the equipment descriptions and equipments lists contained within the subject conditions. When coupled with the requirement to implement and maintain control measures,<sup>48</sup> which is a basic obligation of the permit to provide a reasonable means of periodic monitoring for the coal handling and processing activities, the permit clearly obligates the source to employ the use of control measures as so described or listed in the accompanying condition.<sup>49</sup>

The revised conditions to the permit did not alter the substantive requirements of the work practices from the earlier permit. Notably, the same contentions regarding the lack of specificity and practical enforceability of those requirements were raised in earlier CAAPP

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<sup>48</sup> These requirements addressed by the comment are found in Conditions 7.2.6(a) (i), 7.3.6(a) (i) and 7.4.6(a) (i).

<sup>49</sup> The Illinois EPA also did not establish whether, or which, control measures must always be operated, as doing so would contradict the intended use of such controls as necessary to assure compliance or on an as-needed basis.

proceedings. Such contentions were rejected by USEPA. The USEPA order responding to a petition to object involving Midwest Generation's Fisk facility observed that "some control measures" are to be implemented under the affected conditions, rejecting the notion that the company might choose to implement no control measures at all. USEPA's orders relating to the Fisk and Romeoville facilities also rejected the notion that the permits were unenforceable, holding that the work practices set forth in the affected conditions were "enforceable as a practical matter".

Notwithstanding the aforementioned, in its consideration of this comment the Illinois EPA approached Ameren about the possibility of addressing this issue by reverting to the language of the earlier permit. In furtherance to expediting the issuance of the modified CAAPP permit for the Coffeen Energy Center, and with the concurrence of Ameren, the Illinois EPA has opted to remove the proposed revisions to the conditions. The language of the relevant conditions will now generally reflect the language in the initial 2005 permit, with the simplifying clarification that the "control measures" identified in the recordkeeping provisions are now being addressed in lieu of "established control measures."<sup>50</sup> In addition, the recordkeeping requirements for the control measures are set out in more detail to ensure both enforceability and consistency with prior settlement discussions regarding the nature of the required record.

The draft permit allows the Permittee to select any type of control measure(s), and provides the Permittee discretion to change those control measures. Therefore, the draft CAAPP permit does not comply with 40 C.F.R. § 70.6(a) because it does not contain sufficient operational requirements to assure compliance with the applicable opacity limits for the coal handling, coal processing and fly ash equipment. In addition, the draft permit does not provide the public with the opportunity to meaningfully comment on the selected control measures.

To address these concerns, EPA suggests that the permit conditions be revised to require review and approval by EPA of the control measures selected by the Permittee.

### Response

The permit conditions addressed by the comment require Ameren to implement control measures on the affected operations, as well as to "operate and maintain" those measures on an on-going basis.<sup>51</sup> The permit also requires Ameren to create and maintain a list of various control measures being implemented,<sup>52</sup> which are currently identified in the permit as natural surface moisture, various dust suppressants, enclosures and covers,<sup>53</sup> and to apprise the Illinois EPA of revisions to the list.<sup>54</sup> The associated inspection and

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<sup>50</sup> The use of "established" to describe the control measures was believed to be redundant and potentially confusing, as the record of the control measures would necessarily reflect those measures selected or established by the Permittee to minimize dust.

<sup>51</sup> See, Conditions 7.2.6(a)(ii), 7.3.6(a)(ii) and 7.4.6(a)(ii).

<sup>52</sup> See, Conditions 7.2.9(b)(ii), 7.3.9(b) and 7.4.9(b).

<sup>53</sup> See, Conditions 7.2.1 and 7.2.2, Conditions 7.3.1 and 7.3.2, and Conditions 7.4.1 and 7.4.2.

<sup>54</sup> See, Conditions 7.2.9(b)(iv), 7.3.9(b)(ii) and 7.4.9(b)(ii).

recordkeeping requirements<sup>55</sup> are designed to ensure that the control measures are being followed. Cumulatively, these control measures, recordkeeping and inspections establish the permit's approach to periodic monitoring for these affected operations.

As noted in the previous response, the Illinois EPA established the use of control measures to facilitate periodic monitoring for the subject operations. Developed as work practice standards in the initial 2005 permit and retained in the negotiated revisions to the permit,<sup>56</sup> the use of control measures was deemed appropriate as one component of periodic monitoring for the affected operations.<sup>57</sup> This requirement provided a reliable means of verifying compliance with the emission standards that apply to the affected operations (i.e., visible and fugitive emissions).<sup>58</sup> The legal basis for the control measures is derived from the authority of Section 39.5(7)(a) of the Act but does not stem from applicable requirements expressly derived from underlying regulations.

The nature of the permit requirements is analogous to regulatory programs under the Illinois State Implementation Plan<sup>59</sup> and certain New Source Performance Standards.<sup>60</sup> Those programs typically require an affected source to identify best management (or good engineering) practices to minimize emissions as may be needed, or as appropriate, for site conditions. Within the regulatory framework, subject sources retain considerable latitude in selecting the type and suitability of control measures relative to circumstances that directly bear upon the usefulness and/or performance capabilities of those measures. Such flexibility enables sources to address varying types and degrees of site conditions, range of operation and changes in the characteristics of resulting emissions.

The Illinois EPA's approach to periodic monitoring in the CAAPP permit for the affected operations is similar to the regulatory framework described above. However, the Illinois EPA opted against requiring a formal approval process for the selected control measures, or for subsequent changes to the list of established control measures. In the absence of underlying regulatory requirements existing in federal or state law, mandating these additional requirements is unnecessary given the limited purpose meant to be served by the control measures (i.e., periodic monitoring).<sup>61</sup>

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<sup>55</sup> See, Condition 7.2.8 and 7.2.9, Condition 7.3.8 and 7.3.9, and Condition 7.4.8 and 7.4.9 respectively.

<sup>56</sup> As previously noted, the requirements for control measures in the revised CAAPP permit are substantially identical to those contained in the initial CAAPP permit. The changes being made to these conditions depict mostly stylistic changes to the language and do not modify or alter the substantive elements relating to control measures.

<sup>57</sup> The Illinois EPA acknowledged this reasoning in the Responsiveness Summary accompanying the issuance of the initial CAAPP permit, observing that it was requiring the on-going implementation of the work practices and that, together with inspection and recordkeeping, the requirements will assure compliance with periodic monitoring. See, Response to Public Comments for CAAPP Permit Applications for Midwest Generation et al, at 33 (September 29, 2005).

<sup>58</sup> See, Conditions 7.2.4, 7.3.4 and 7.4.4.

<sup>59</sup> See, 35 IAC Part 212.309.

<sup>60</sup> See, 40 CFR Part 60 Subpart Y.

<sup>61</sup> In addition, an attempt to impose such requirements would potentially raise dubious questions of legal authority, as USEPA and federal courts alike have

The comment also expresses concern regarding the absence of an opportunity for public comment on the control measures. The revised CAAPP permit, like the initial permit, requires the source to submit a list of established control measures that will be operated and maintained within 60 days of permit issuance. Owing to the lack of permit effectiveness for the initial CAAPP permit, the source has yet to generate this record and the comment is therefore premature. Once the record is submitted to the Illinois EPA, it will be available for public viewing and inspection upon receipt of a request filed under the state's Freedom of Information Act.<sup>62 63</sup>

#### USEPA Comment

The draft CAAPP permit contains inspection requirements for the coal handling, coal processing and fly ash equipment.<sup>3</sup> These include monthly inspections of the coal handling and coal processing equipment, and weekly inspections of the fly ash equipment. In addition, the draft permit requires that the Permittee perform visible emissions observations using EPA Reference Method 22 once per calendar year.

Given that the majority of the affected equipment operates continuously, 365 days a year, the draft CAAPP permit inspection requirements are not adequate to yield reliable and accurate emissions data, as required by 40 C.F.R. § 70.6(a)(3)(i)(B). In order to address this concern, EPA recommends that Conditions 7.2.8(b), 7.3.8(b) and 7.4.8(b) be revised to require the Permittee to conduct at least one daily 15-second observation each operating day for each affected operation (during normal operation). If emissions are observed, the permit should identify the Permittee's next steps, e.g., when corrective action must be taken and/or Method 9 observations be conducted. These daily

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recognized the general rule that Title V permit authorities may not create new substantive requirements. To replicate, through a Title V permit, principal elements of a regulatory program that could not otherwise be imposed on a source as an applicable requirement would likely exceed the scope of gap-filling and/or other implied authorities available to Title V permitting agencies. It can be noted that the Illinois EPA will be reviewing relevant material generated by the permit (e.g., record of control measures) to ensure, for purposes of any future permit action, that the use of control measures being implemented by the source consistent with applicable permit requirements.

<sup>62</sup> Further, it is presently anticipated that the generated record will be incorporated into the CAAPP permit by way of a future permit proceeding (e.g., permit reopening or significant modification) and would therefore be a part of any permit record regarding the same.

<sup>63</sup> It should also be noted that the substance of the comment is beyond the scope of changes being addressed in this permitting action. The subject requirements relating to control measures underwent public comment and USEPA review at initial permit issuance and were clearly ascertainable at that time. More fundamentally, the permit modification procedures undertaken for resolving the CAAPP utility appeals appropriately do not encompass a comprehensive review of the permit. Rather, review is limited to the issues directly arising from the significant modifications to a permit. This approach is supported by the preamble discussion accompanying the Part 70 rules and was adopted by the Administrator in a subsequent petition response. For reasons that relate to the policy of administrative finality, the approach is equally essential in the current proceeding to achieve a complete resolution of the CAAPP appeal.

observations may be performed by plant operators who already conduct routine equipment inspections.

**Response:**

**This comment focuses narrowly on only one aspect of periodic monitoring for the subject equipment (i.e., monthly inspection requirement), while overlooking other aspects of the overall monitoring approach.<sup>64</sup> The concept of periodic monitoring eschews a one-size-fits-all framework and is therefore regarded as something of a case-by-case evaluation. In a similar vein, one component of periodic monitoring should not trump other components, or be singled out without giving due regard to its relationship to the other components of the monitoring. The approach to periodic monitoring crafted for the subject equipment in 2005, centering around the work practice requirement for the use of control measures, was both sound and practical.<sup>65</sup>**

**A key component of the periodic monitoring is an on-going requirement that Ameren operate and maintain designated control measures for the equipment on an as-needed basis or, similarly stated, as necessary to assure compliance. This obligation, which is required whenever equipment is operating and material is being handled,<sup>66</sup> is now codified in the permit, although various uses of control measures have long been practiced by Ameren and the other utility sources.<sup>67</sup>**

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<sup>64</sup> As observed with the previous comment, the Illinois EPA notes that the subject comment is beyond the scope of changes being addressed in this permitting action. The CAAPP procedures governing here restrict this proceeding to only those issues directly arising from the planned significant modifications to the 2005 permit.

<sup>65</sup> The original 2005 permit established a comprehensive regimen for periodic monitoring. In its consideration of periodic monitoring for the subject equipment, the Illinois EPA recognized that varying combinations of components could serve to establish sufficient periodic monitoring, depending upon the nature of the subject equipment and the applicable emissions control requirements. In the case of the coal handling, coal processing, and fly ash equipment, this consideration necessarily accounted for the type, function, placement and locations of these units and the straight-forward nature of the emission standards that apply to these units. See, Response to Public Comments for CAAPP Permit Applications for Midwest Generation et al, at 33 (September 29, 2005) ("these requirements need not be identical for each unit" and "various combinations of the requirements will suffice depending on the nature of a unit and the emission control requirements to which it is subject.").

<sup>66</sup> The fact that the equipment operates on a regular basis does not constitute a sufficient basis to require more frequent inspections, as suggested by the comment, when control measures must be used whenever equipment operates. Moreover, it is inaccurate to suggest that the subject equipment operates "continuously, 365 days a year". In fact, most of the equipment operates intermittently. For instance, based on available information, the unloading of silos and reclamation of coal from the storage pile takes only about 6 hours per day. The load-out of fly ash takes only about 8 hours per day. The duration of daily equipment operation is lower when only one of the boilers is operating and the other boiler is out for maintenance, which occurs more than 20 percent of the time each year.

<sup>67</sup> Certain work practices are and will continue to be implemented for the subject equipment, independent of the CAAPP permit, for reasons related to worker safety, equipment reliability and longevity, and operational costs. The introduction of the requirement for control measures to the CAAPP permit is significant in that it codifies past and continuing dust minimization practices and establishes a supporting means of oversight and verified record-keeping.

The use of control measures is accompanied by periodic verifications that must be formally undertaken by the source. Detailed records must be maintained for each instance in which an affected operation/process operates without the presence of the designated control measures.<sup>68</sup> Deviations from the requirement to operate and maintain control measures must also be reported.<sup>69</sup> The inspection and record-keeping requirements are the remaining components of periodic monitoring. The formal inspections, by design, will provide specific confirmation that the designated control measures are being properly operated and maintained. Records must be kept for each required inspection to document the operation and condition of the applicable control measures, as well as the performance of the inspection.<sup>70</sup>

It should be noted that the use of control measures is required independent of the informal verifications (or observations) of the subject equipment that are contemplated by the permit. Lapses in the use of such measures must be corrected by Ameren independent of the formal inspections that are required. Because the collective requirements relating to control measures should be adequate to verify implementation of the control measures, the imposition of a daily, formal observation is not necessary to provide periodic monitoring that satisfies Title V's requirements. For these reasons, the comment does not justify changes to the frequencies of the formal inspections specified by the permit.<sup>71</sup>

Moreover, more frequent observations for visible emissions would not provide useful information. Neither the applicable standards nor the permit prohibit visible emissions from the subject equipment. For purposes of periodic monitoring, the absence of visible emissions is a criterion that will act to simplify the periodic inspections for certain equipment, such as the coal crushers which are located in a closed building.<sup>72</sup> For such equipment, the absence of visible emissions will likely readily confirm proper implementation of control measures. If visible emissions are not present from such equipment, either during an initial observation for visible emissions or following timely repair, it would also be unproductive to

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<sup>68</sup> Such records include a description of the event, probable cause of the occurrence, any preventative measures taken, and an explanation of whether the relevant opacity standards were exceeded. See generally, Conditions 7.2.9(e), 7.3.9(e) and 7.4.9(e).

<sup>69</sup> Occasions during which the subject equipment is not in compliance for more than a specified time require notification within 30 days. Otherwise, the deviation must be reported in a quarterly report. See generally, Conditions 7.2.10(a) (ii) and (iii) (A), 7.3.10(a) (ii) and (iii) (A), and 7.4.10(a) (ii) and (iii) (A).

<sup>70</sup> The inspections must document the date and time of the inspection, as well as the particular equipment being observed; the "observed condition" of the control measures, including both the "presence of any visible emissions or atypical accumulations of coal fines;" a description of the "maintenance or repair" of equipment relating to the control measures, as well as a review of pending recommendations from prior inspections; and a description of any corrective action, including whether such action occurred within two hours of discovery and returned the operation to normal (i.e., no visible emissions). See generally, Conditions 7.2.9(d), 7.3.9(d) and 7.4.9(d).

<sup>71</sup> Formal inspections of the coal handling equipment and coal processing equipment are required monthly pursuant to Conditions 7.2.8(a) and 7.3.8(a), respectively. Inspections of fly ash equipment are required weekly pursuant to Condition 7.4.8(a).

<sup>72</sup> It is also expected that visible emissions will normally not be present for a number of other pieces of equipment. The transfer point from the railcar loading pit to the coal transfer conveyor is located underground. Fly ash is transferred from the boilers with pneumatic conveying systems that operate under negative pressure.

require observations for the opacity of emissions by USEPA Method 9, as are necessary for equipment from which visible emissions are normally present.

**Questions from the Public Hearing**<sup>73</sup>

1. Is the agency aware of all the permits for coal-fired power plants that have had CAM plans that have used parametric monitoring of the scrubber as part of the CAM plan?

**Response:**

At present, there are no other coal fired plants in Illinois that have parametric monitoring of the scrubbers as part of their CAM plan. It should be noted that multiple other facilities do operate this type of equipment and could always modify, at a later date, their CAM application to include it.

Outside of Illinois, there are two Ameren facilities in Missouri that address the use of parametric monitoring of the scrubbers in their approved CAM plans.

2. Once Ameren would determine the upper limit of opacity which assures compliance with the PM limit, what margin of compliance does Illinois EPA view as appropriate in then setting opacity indicators for the CAM plan?

**Response:**

This question was addressed above in the previous discussion about the margin of compliance.

3. What is the closest IEPA air monitoring station to this area?

**Response:**

The nearest SO<sub>2</sub> monitor is a station located in Nilwood. The nearest PM monitors are stations in Springfield and Decatur.

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<sup>73</sup> These are the questions that Illinois EPA would respond to with written comments.

**FOR ADDITIONAL INFORMATION**

Questions about the public comment period and permit decision should be directed to:

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