

Responsiveness Summary
Sunflower Electric Power Corporation
Holcomb Expansion
Air Quality Construction Permit Addendum

Kansas Department of Health and Environment
Bureau of Air



May 30, 2014

Table of Contents

Topic	Page
I. KDHE Recommendation.....	1
II. Project Description.....	1
III. KDHE Permit Considerations.....	1
IV. Response to General Public Comments	2
A. Energy efficiency, cleaner energy, renewable energy, conservation.....	2
B. Concerns about water consumption, conservation and pollution, solid waste pollution and environmental damage.....	2
C. General request KDHE should or should not issue permit; no public funds should be used for discussions on construction of power plants	3
D. Jobs and the economy.....	3
E. General concerns regarding health effects from pollution.....	4
F. Health effects from mercury, arsenic, and other hazardous air pollutants.....	4
G. Sulfur Dioxide contributes to acid rain.....	5
H. Particulates emitted from burning coal can contain Uranium.....	5
I. Carbon Dioxide (CO ₂) emissions are too high.....	5
J. Concerns regarding mountaintop coal removal and coal wash water slurry causing pollution of streams and drinking water.....	6
V. Response to Technical Comments	6
A. Sierra Club and its Members in Kansas and Nationwide	6
B. True Blue Women, Prairie Village, KS	21
C. Sunflower Electric Power Corporation.....	24
D. Citizen BC, Garden City, KS	29
E. Citizen CC, Lawrence, KS.....	29
F. Citizen TC, Lawrence, KS	30
G. Citizen EH, Shawnee Mission, KS.....	30
H. Citizen MH, Lawrence, KS.....	30
I. Citizen BS, Shawnee, KS.....	31
J. Citizen ES, Wichita, KS.....	31
K. Citizen CV, Kansas City, KS	32
L. Citizen SY, Ottawa, KS	33
Attachment A	A-1

I. KDHE RECOMMENDATION

The Kansas Department of Health and Environment (KDHE) Bureau of Air (BOA) recommends the issuance of an Addendum to the December 16, 2010 Air Quality Prevention of Significant Deterioration (PSD) Construction Permit to Sunflower Electric Power Corporation (Sunflower) for construction of one (1) new 895 megawatt (MW) supercritical pulverized coal (PC) fired steam generating unit and associated ancillary equipment (Holcomb expansion) at their generating station located in Holcomb, Kansas. The addendum and permit related documents can be found at the BOA website address:

<http://www.kdheks.gov/bar/sunflower/sunflower.html>

or contact: (785) 296-6423.

II. PROJECT DESCRIPTION

The operator, Sunflower Electric Power Corporation (Sunflower), on behalf of the owners, was granted authorization on December 16, 2010, to construct and operate one new 895 megawatt (895 MW) coal fired generating unit and associated equipment, including one steam generator (H2), one companion cooling tower, one auxiliary boiler, one emergency diesel power generator, one replacement diesel fire pump (DFP) to replace an existing emergency diesel fire pump at Holcomb 1, one emergency DFP booster pump and coal, lime, powdered activated carbon (PAC), and waste powder handling equipment, collectively known as the Holcomb Expansion Project (Project) or Holcomb 2, to be located at the site of the existing Holcomb 1 generating unit and associated equipment at Sunflower's Holcomb Generating Station.

The Kansas Supreme Court reviewed the decision of KDHE to issue the December 16, 2010 permit upon litigation filed by Sierra Club. On October 4, 2013 the Court issued an opinion and remanded the permit back to KDHE for: 1) application of the new federal regulations establishing 1-hour NO₂ and SO₂ National Ambient Air Quality Standards; and 2) application of the new (Hazardous Air Pollutants) HAPs emission limits to the H2 steam generator.

III. KDHE ADDENDUM CONSIDERATIONS

KDHE drafted an Addendum to the December 16, 2010 permit to incorporate the requirements of the Kansas Supreme Court. The Addendum includes 1-hour NO_x and SO₂ permit limits and applies the new Hazardous Air Pollutants regulations: 40 CFR Part 63, Subpart UUUUU – “National Emission Standards for Hazardous Air Pollutants for Coal and Oil-Fired Electric Utility Steam Generating Units”. The Addendum

supplements the December 16, 2010 permit. All provisions of the December 16, 2010 permit remain in effect, except as specified in the Addendum.

The draft Addendum was available for public review and comment from January 16, 2014 to February 19, 2014. A public hearing was conducted on February 19, 2014 in Garden City, Kansas to obtain oral and written comments concerning the proposed Addendum. Three commenters spoke at the public hearing and two of these commenters submitted their written testimony. There were 29 other commenters who submitted written and email comments during the public comment period for a total of 32 commenters.

KDHE is responding to the comments in Sections IV and V below. General concerns and comments are addressed in Section IV. Several of the general comments were similar in nature, so KDHE has grouped them and responded to them under ten separate topics. Technical comments which specifically pertain to the addendum requirements are addressed in Section V. All comments can be viewed upon request by contacting KDHE at 785-296-6423.

IV. RESPONSE TO GENERAL PUBLIC COMMENTS

(Note: When referring back to General Public Comments, they will be referenced by their comment letter, such as Comment A).

Comment A:

Several comments regarding energy efficiency, cleaner energy, renewable energy, conservation

KDHE Response:

These comments address Sunflower's basic technology selection and KDHE lacks statutory or regulatory authority to redefine the source that Sunflower seeks to permit. There are no current federal provisions to regulate energy rates, energy efficiency, renewable energy and energy conservation practices in PSD permits. K.S.A. 2009 Supp. 65-3005(b)(1) precludes KDHE from promulgating regulations more stringent than federal requirements without approval from the Kansas legislature.

Comment B:

Concerns about water consumption, conservation and pollution, solid waste pollution and environmental damage

KDHE Response:

KDHE Bureau of Air does not have regulatory authority over matters related to water supply, usage, and pollution, or solid waste pollution. The Kansas Department of Agriculture (KDA), Division of Water Resources (DWR) is responsible for regulating the use of water in Kansas. The KDHE Bureau of Water regulates water pollution. The KDHE Bureau of Waste Management is responsible for regulating solid waste.

Comment C:

General request KDHE should or should not issue permit; no public funds should be used for discussions on construction of power plants.

KDHE Response:

KDHE must follow all federal and state requirements when reviewing the application and making a determination on whether or not to issue a permit. When a source submits an air permit application proposing the type of facility that is to be built, it is KDHE's responsibility to determine if the facility utilized the Best Applicable Control Technology (BACT) for reducing emissions and met all other applicable federal and state air rules and regulations. If the application does meet all requirements, KDHE must issue the permit, as required by law. The Permit Addendum supplements the December 16, 2010 permit to include the 40 CFR part 63, Subpart UUUUU – “National Emission Standards for Hazardous Air Pollutants for Coal and Oil-Fired Electric Utility Steam Generating Units” requirements and specifies the one-hour emission limits for oxides of nitrogen (NO_x) and sulfur dioxide (SO₂). KDHE followed the Kansas Supreme Court's requirements to incorporate these provisions of 40 CFR part 63, Subpart UUUUU (this regulation requires operating limits, work practice standards, performance testing, continuous compliance and reporting upon startup of H2) and to add one-hour permit limits for NO_x and SO₂.

KDHE does not have authority to make decisions on whether or not public funds should be used for discussions of new coal-fired power plants.

Comment D:

Comments regarding jobs and the economy;

KDHE Response:

There are no current state or federal provisions to regulate the impact on the types of jobs or economic advantages/disadvantages in PSD permits. K.S.A. 2009 Supp. 65-3005(b)(1) precludes KDHE from promulgating regulations more stringent than federal requirements without approval from the Kansas legislature. Economic considerations

are only taken into account when the applicant is conducting the Best Available Control Technology (BACT) analysis to determine if the cost of the control option(s) will cause adverse economic impact to the facility. The long or short term impacts on the local/regional economy are not included in the criteria for determining BACT.

Comment E:

General concerns regarding health effects from pollution

KDHE Response:

A critical element of the air permitting process and Kansas' State Implementation Plan (SIP) of the federal clean air laws and regulations, in general, is protection of the ambient air quality. The Environmental Protection Agency (EPA) has established primary and secondary national ambient air quality standards (NAAQS) for six criteria pollutants, which include ozone, particulate matter (PM), sulfur dioxide (SO₂), oxides of nitrogen (NO_x), carbon monoxide (CO), and lead. The primary standards protect human health and the secondary standards protect public welfare. In setting the standards, EPA considers sensitive populations (e.g., asthmatics, children, elderly) and the type of effect (chronic versus acute). EPA periodically receives new health-based scientific studies, and using the standard administrative rulemaking process, revises those NAAQS standards, if appropriate. Finney County is in attainment/unclassifiable for the NAAQS, which is why the PSD permitting process is applicable to Holcomb 2. As part of its application, Sunflower provided information demonstrating that air emissions from Holcomb 2 would not cause or contribute to an exceedance of any NAAQS.

Comment F:

Health effects from mercury, arsenic, and other hazardous air pollutants

KDHE Response:

The EPA promulgated 40 CFR Part 63, Subpart UUUUU – “National Emission Standards for Hazardous Air Pollutants for Coal and Oil-Fired Electric Utility Steam Generating Units” rule (also known as the Mercury and Air Toxic Standards or MATS rule). The MATS rule will require large reductions of mercury and other heavy metals, including arsenic, cadmium, hexavalent chromium, nickel and lead. Also regulated are acid gases, including hydrochloric acid and hydrofluoric acid, which contribute to acid rain and are known carcinogens. Previously existing sulfur dioxide and nitrous oxide standards were also updated and tightened. The Addendum requires Sunflower to be in compliance with the MATS rule.

Comment G:

Sulfur Dioxide contributes to acid rain

KDHE Response:

Acid rain is primarily caused by Sulfur Dioxide (SO₂) and Oxides of Nitrogen (NO_x). These pollutants are regulated through the EPA Acid Rain Program which Congress created as Title IV of the 1990 Clean Air Act Amendments. Sunflower is required to comply with EPA's acid rain regulations. For more information about acid rain regulations, see the following web site:

<http://www.epa.gov/airmarkets/index.html>

Comment H:

Particulates emitted from burning coal can contain Uranium

KDHE Response:

Coal contains trace quantities of uranium, a naturally-occurring radionuclide. When coal is burned, the minerals in the coal do not burn and they concentrate in the ash. Most of the ash is captured, although very small particles, known as "fly ash," escape from the boiler into the atmosphere. Although EPA has no current uranium emission limits, the federal air regulations do include the use of control technology to reduce the amount of fly ash that escapes. The containment/disposal of the fly ash solids is regulated by the KDHE Bureau of Waste Management (BWM). For more information about uranium in coal fly ash, see the following web site:

<http://www.epa.gov/radiation/tenorm/about.html>

Comment I:

Carbon Dioxide (CO₂) emissions are too high

KDHE Response:

For purposes of KDHE's responses in this document, any reference to CO₂ is intended to include all greenhouse gases (GHGs). The term GHGs includes: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and the fluorinated gases, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. When the 2010 permit was issued, there was no federal law requiring evaluation of CO₂ emissions in PSD permit application reviews, or requiring application of BACT to projects with significant emission increases of CO₂.

K.S.A 2009 Supp. 65-3005(b)(1) precludes KDHE from promulgating regulations more stringent than federal requirements without prior approval from the Kansas legislature.

Comment J:

Concerns regarding mountaintop coal removal and coal wash water slurry causing pollution of streams and drinking water

KDHE Response:

The KDHE BOA does not have regulatory authority over solid waste/coal ash disposal or water pollution from coal mining activities. The Surface Mining Section (SMS) of KDHE's Bureau of Environmental Remediation regulates operation of coal mines in Kansas. The KDHE Bureau of Waste Management (BWM) regulates solid waste/coal ash disposal. Water pollution from coal mining activities in Kansas is regulated by the KDHE Bureau of Water. Coal brought in to the plant from other states, (typically, Powder River Basin coal from Wyoming) is regulated by the authorities in that state.

V. RESPONSE TO TECHNICAL COMMENTS

A. Sierra Club (SC) and its Members in Kansas and Nationwide

Comment 1 (SC 2/4/14 Submittal):

We are writing on behalf of the Sierra Club and its members to request a full and fair public process for the addendum to the "Air Emission Source Construction Permit" issued for the new 895 MW pulverized-coal generating unit which Sunflower Electric Power Corporation is proposing to construct at Holcomb Station, located near Holcomb, Kansas. Due to the overwhelming public interest in this controversial project, we are requesting a 30-day extension of the public comment period, until March 21, 2014, to allow the public a full opportunity to comment on the revised permit. We are also requesting an additional public hearing in Lawrence, Kansas to ensure that citizens in eastern Kansas have an opportunity to attend a public hearing and present their views to KDHE. These two reasonable requests will ensure a more meaningful and complete opportunity for the public to comment on KDHE's proposed decision.

First, the Sierra Club is requesting an extension of the comment period to allow the public a full opportunity to comment on the permit addendum. The proposed construction of the new coal-fired generating unit at Holcomb has sparked substantial public controversy, and Sunflower's 2010 proposal drew unprecedented levels of public participation in the public process following issuance of that draft permit. Given the strong public interest in this issue, the Sierra Club respectfully submits that an extension of the comment period will allow the public and other stakeholders the opportunity to

fully evaluate the permit addendum and offer meaningful and well-informed comments on the proposal. Therefore, the Sierra Club requests that the Kansas Department of Health and the Environment extend the public comment period on the permit by 30 days. This reasonable and necessary extension would set the comment period to close on March 21, 2014.

Second, the Sierra Club is requesting that KDHE schedule a public hearing in Lawrence, Kansas. Currently the only public hearing on the proposed addendum is scheduled in Garden City, Kansas. While holding a public hearing in western Kansas is certainly appropriate, having the only public hearing on the addendum on the far western side of the state presents a substantial obstacle for the many citizens residing in the eastern portion of the state who wish to participate in the process surrounding the addendum. For Sunflower's 2010 draft permit, KDHE scheduled multiple hearings in Garden City, Lawrence, and Topeka; the hearings in the eastern Kansas cities (Lawrence and Topeka) were very well attended and allowed all Kansans an opportunity to present their views to KDHE. In contrast, the February 19, 2014 public hearing in Garden City does not provide many Kansans with an opportunity to make their views on this controversial project heard. For any Kansan who must work during the week, a public hearing on a weeknight (Wednesday, February 19) that is such a substantial distance from their homes and places of employment presents an insurmountable obstacle to their participation. By scheduling the only public hearing on the addendum on a weeknight and in a city that is a prohibitive distance for many Kansans, KDHE is preventing the public from providing their views on the addendum. Therefore, the Sierra Club requests that KDHE schedule a public hearing in Lawrence, Kansas, and give at least 30-days notice of that hearing in accordance with K.A.R. § 28-19-204.

Sierra Club further disagrees that the permit "addendum" appropriately responds to the Supreme Court's remand order or that the truncated permit "addendum" process proposed by KDHE is an adequate substitute for a full new permitting decision, for reasons that Sierra Club will explain further in comments on the permit "addendum." But regardless of whether the "addendum" process is appropriate here or not, KDHE should at a bare minimum ensure that the public process for the addendum allows for meaningful public participation by providing a modest extension to the comment period and one additional public hearing.

Sierra Club's requests for a full and fair public process on the permit addendum comport with the emphasis in both the Clean Air Act and the Kansas Air Quality Act and regulations on the importance of public process and comment. 42 U.S.C. § 7475(a); K.S.A. § 65-3008a(a); K.A.R. §§ 28-19-350(k); 28-19-204. The purpose of the public participation provisions guaranteed by both federal and Kansas law would be thwarted by a comment period that is too brief to allow for meaningful public comment, and a public hearing that is too distant for many Kansans to attend. Indeed, in 2010, when KDHE issued the initial draft permit for the Sunflower facility, KDHE recognized the importance of public participation and scheduled public hearings across the state. Additionally, KDHE granted the Sierra Club's request for an extension of the comment period in 2010. Such an extension is as necessary now as it was then-if not more so.

Sierra Club and its members in Kansas and nationwide have a strong interest in ensuring that a massive new facility such as the one Sunflower proposes to construct be subject to appropriately stringent emissions controls to preserve the quality of the air we breathe. The importance of ensuring that Sunflower's proposed facility is subject to restrictions that minimize the harm it causes to the citizens of Kansas and the country underscores the need for KDHE to ensure that the public has a full opportunity to offer meaningful and thorough comments on the revised permit.

Thank you for your consideration of this important matter. Due to the short time currently allocated for the public comment period and the impending hearing and comment deadline, I look forward to hearing from you at your earliest possible convenience regarding your decision.

KDHE Response:

A plain reading of the opinion issued by the Kansas Supreme Court in Sierra Club v. Moser, 310 P.3d 360, WL 5495270 105,493 (2013) directs the Kansas Department of Health and Environment how to proceed and gives the Department wide latitude in determining the scope of those proceedings on remand. The procedures that the Kansas Department of Health and Environment has established for the public comment period and public hearing in Garden City, Kansas is consistent with Kansas statutes and regulations.

Secretary Robert Moser gave your request substantial consideration and found that it contained no justification to extend the public comment period or to conduct additional hearings.

Comment 2 (SC 2/18/14 Submittal, Section II):

In its decision reversing and remanding KDHE's issuance of an air emission source construction permit to Sunflower, the Supreme Court explicitly held that, on remand, KDHE must include emission limits in the permit to ensure compliance with the Mercury and Air Toxics Rule. *See Sierra Club v. Moser*, 310 P.3d 360 (2013), slip op. at 45 ("On remand, the KDHE must apply the new HAPs emission limits that are explicitly retroactive to this permit."). The proposed permit "addendum" fails to respond to this specific direction from the Court. The permit addendum contains a statement noting that the MATS rule applies to the Sunflower plant, but the addendum does not include any modification to the emission limits in the 2010 permit. The emission limits in the earlier permit plainly are not as stringent as the standards in the MATS rule. Moreover, the technology specified in the permit is not adequate to allow the proposed plant to comply with the MATS.

Under the Clean Air Act and the Kansas State Implementation Plan, KDHE must include emission limits in the permit that are stringent enough to meet the MATS standards. *See*

Reconsideration of Certain New Source Issues, 78 Fed. Reg. 24,073-24,094 (Apr. 24, 2013); *see also* Mercury and Air Toxics Standards (“MATS”), 77 Fed. Reg. 9304-9513 (Feb. 16, 2012); *see also* *Sierra Club v. Moser*, 310 P.3d 360, slip op. at 45. The emission limits in the existing permit are not adequate to comply with the MATS standards, however. First, for mercury, the MATS rule requires an emission limit of no more than 0.003 lb/GWh. *See* 78 Fed. Reg. at 24,075-76 (Tables 1 & 2). The current permit for the Holcomb Expansion, however, only includes an emission limit of 0.02 lb/GWh. The limit in the final permit, on its face, allows emissions that are many times higher than the limit required by the MATS rule—limits the Supreme Court has specifically held apply to this permit.

Second, for filterable particulate matter, the MATS rule requires an emission limit of no more than 0.09 lb/MWh. *See* 78 Fed. Reg. at 24,075-76 (Tables 1 & 2). The final permit for the Holcomb Expansion, however, includes a limit of 0.012 lb/MMBtu, which is equivalent to a limit of 0.1166 lb/MWh, *see* Sahu Decl. ¶ 5, attached as Appendix B (converting permit limits from lb/MMBtu to lb/MWh). As with mercury, the filterable particulate matter emission limit in the final permit is not as stringent as the limit required by the MATS rule, a rule that would apply to this permit by its own terms but also which the Supreme Court specifically held applies to this permit. The addendum does not modify the relevant permit emission limits to meet the MATS and so does not comply with the Supreme Court’s directive, the Clean Air Act, or the Kansas State Implementation Plan.

Not only is the permit inadequate on its face because the emission limits are not stringent enough to ensure compliance with the MATS, but the permit additionally fails to specify control technology that would allow the plant to meet the compliance testing requirements specified in the MATS. For example, as explained in greater detail in the attached technical comments by Dr. Ranajit Sahu, substantial changes to the pollution control technology for mercury would be necessary to enable the plant to meet the MATS mercury limit. *See* Sahu Report and Comments at 1-5, attached as Appendix A. Moreover, such changes may significantly impact the control technology for other pollutants, such as particulate matter. *See id.* Accordingly, Sunflower must submit a new permit application specifying the control technology it will actually use in the proposed facility to comply with MATS, including considering how the specified control technologies for all controlled pollutants will affect other aspects of the plant and other control technologies. KDHE must offer a new public comment period on the new permit application, and only then may KDHE evaluate and decide whether to issue a new permit for this facility.

KDHE Response:

The draft addendum states “[the] owner or operator shall comply with all applicable provisions of 40 CFR Part 63 Subpart UUUUU for an EGU as defined per 40 CFR 63.9985. Applicable ... sections from the 40 CFR Part 63 Subpart UUUUU (MATS) in effect upon startup of H2 shall apply.” This requirement is in addition to and supersedes

any limit in the permit issued in the December 16, 2010 that is less stringent than the limits in the MATS in effect upon startup.

The control technology in the December 10, 2010 permit was, and still is, the technology that is used in PSD pollutants and hazardous air pollutants (HAPs) control alike. The control technology in the permit shall meet the compliance testing requirements of the MATS in effect upon startup or face enforcement actions until compliance is met.

The most effective control for mercury is a combination of fuel blending, selective catalytic reduction (SCR) to oxidize the gaseous mercury, carbon or sorbent injection to absorb the mercury and fabric filter (FF) or electrostatic precipitator to capture the absorbed mercury. The December 16, 2010 permit requires an SCR be used to control NO_x and an FF be used to control PM, lead and H₂SO₄. The permit states that emission limits will be met by blending various coals, or by the injection of powdered activated carbon (PAC) or other sorbent or both. PAC or sorbent injection equipment will be installed for the H₂ steam generator.

Comment 3 (SC 2/18/14 Submittal, Section III):

The one-hour emission limits are not BACT. In its decision reversing and remanding KDHE's issuance of an air emission source construction permit to Sunflower, the Supreme Court also held that, on remand, KDHE must include emission limits in the permit to ensure compliance with the one-hour standards for nitrogen oxides and sulfur oxides. *See Sierra Club v. Moser*, 310 P.3d 360, slip op. at 43 ("Because the issuance of the Holcomb 2 PSD permit to Sunflower was based on errors of law under the CAA, we remand the permit to the KDHE for application of the new federal regulations setting out 1-hour NO₂ and SO₂ standards."). In the proposed permit "addendum," KDHE includes provisions limiting NO_x emissions to "1740 lbs/hour on a one hour block average basis, including during startup and shutdown" and limiting SO₂ emissions to "4089 lbs/hour on a one hour block average basis, including during startup and shutdown." Proposed Addendum at 2. These limits are based on modeling and analysis conducted in association with the 2010 permit. Sierra Club incorporates by reference its 2010 comments on this modeling and the limits based on it. KDHE can and should include more stringent one-hour limits in the permit to protect against the many health risks posed by these pollutants.

KDHE Response:

The EPA established the NAAQS for 1-hour SO₂ and NO₂ to protect human health, in addition to previous standards set to protect human health, and secondary standards to protect public welfare. In setting the standards, EPA considered sensitive populations (e.g., asthmatics, children, elderly) and the type of effect (chronic versus acute). EPA periodically receives new health-based scientific studies, and using the standard administrative rulemaking process, revises those NAAQS standards, as appropriate.

The dispersion modeling analysis conducted in 2010 showed that with an emission rate from H2 of 4089 lb/hour SO₂ and 1740 lb/hour of NO_x, the Holcomb expansion project is not expected to cause or contribute to an exceedance of the 1-hour SO₂ NAAQS or the 1-hour NO₂ NAAQS.

Sunflower submitted modeling results in 2014 generated using conservative inputs with the latest version of AERMOD. The emission rate from H2 used in the model was 4089 lb/hour SO₂ and 1740 lb/hour of NO_x. Their modeling report showed that the expansion project is not expected to cause or contribute to an exceedance of the 1-hour SO₂ NAAQS or the 1-hour NO₂ NAAQS.

Please refer to the December 2010 Responsiveness Summary for a response to 2010 comments. Emission rates originally described as action levels have now been included in the Permit Addendum as emission limits.

Comment 4 (SC 2/18/14 Submittal, Section IV):

A new BACT determination is necessary. KDHE's response to the Supreme Court's reversal of the permit is procedurally inadequate. For several reasons, KDHE must conduct a new permitting process, including a new BACT determination, before issuing a new permit to Sunflower.

The emission limits in the 2010 permit are no longer BACT because they are outdated; more current information demonstrates that lower emission limits can and should be included in the final permit. The 2010 Sunflower permit is based on a 2008 and 2009 permit application, including an analysis of the "best available control technology" (BACT) for regulated pollutants at that time. The BACT requirement is meant to ensure that new facilities are built using state-of-the-art pollution control technology, taking into account the most recent emission levels achieved by other similar sources, and EPA's NSR Manual emphasizes that a BACT determination is not made until a final, complete permit is issued. *See, e.g., NSR Manual at B.54-B.55.* It has now been five years or longer since the BACT analysis supporting the Sunflower permit was developed, and the information in that analysis is no longer current. As explained in greater detail in the attached expert report by Dr. Sahu, the emission limits for SO₂, NO_x, and PM are not BACT. Even assuming that the control technology selected in the 2010 permit was BACT (it was not, for the reasons discussed in Sierra Club's 2010 comments and appended expert reports), actual emission levels achieved by similar plants in recent years demonstrate that the emission limits for the Sunflower plant should be lower in order to meet the BACT requirement. *See Sahu Report at 5-7.* The fact that similar plants have consistently achieved emission limits far lower than the Sunflower permit limits in the last several years, using the same or similar technology as that which forms the basis for the Sunflower permit, demonstrates that the limits in the permit are now outdated and cannot be supported as BACT.

KDHE Response:

As indicated in Response to Comment 5, the December 16, 2010 permit is still under the initial 18 months from issuance of the permit to commence construction. Because of the ongoing litigation after issuance of the permit, the facility requested and was granted a “stay” by the Secretary of KDHE’s July 11, 2011 Stay Order effective June 1, 2011. The facility further requested confirmation on November 7, 2013 that the Stay was still in effect until completion of the remand decision. On November 12, 2013 the Secretary of KDHE’s letter stated the Stay Order continues in effect since the reversal and remand did not result in final disposition of the permit and the terms of that permit. The facility will still have 12 months and 2 weeks to construct once the Stay is lifted before an application for an extension, and possible re-evaluation of BACT, would be required.

Comment 5 (SC 2/18/14 Submittal, Section IV):

Additionally, as discussed above and in the attached expert report by Dr. Sahu, the permit does not include emission limits or control technology to ensure compliance with the MATS. Accordingly, Sunflower will have to substantially change the design of the proposed facility to incorporate control technology that will allow the project to meet MATS limits, and these changes will likely necessitate significant changes to other aspects of the project design and specified control technology for other pollutants. For example, adding pollution control technology to reduce mercury emissions to the levels required by the MATS rule may well decrease the efficiency of the pollution control technology for particulate matter, also a controlled pollutant. KDHE and Sunflower will have to consider how the controls for various pollutants will work together and will have to substantially redesign the control technology to ensure all relevant emission limits are met. The Clean Air Act and Kansas SIP require a new permit, new BACT decision, and new permitting process for significant changes such as these.

Finally, KDHE’s alleged “stay” is unlawful and without effect. Accordingly, the permit has expired, and Sunflower must apply for a new permit and new BACT determination. Under CAA regulations and the Kansas SIP, a PSD permit becomes invalid after 18 months. 40 C.F.R. § 52.21(r), incorporated by reference in K.A.R. 28-19-350; *see also* K.A.R. 28-19-301(c). EPA has developed guidance specifically addressing whether and how sources may obtain extensions of this 18-month deadline. *See* Memorandum, Revised Draft Policy on Permit Modifications and Extensions 1, Darryl D. Tyler, Director, EPA Control Programs Development Division (July 5, 1985) (“Tyler Memo”); *see also* Letter, PREPA San Juan Repowering Project, Steven C. Riva, Chief, EPA Region II Permitting Section (June 10, 2002); Memorandum, EPA Region IX Policy on PSD Permit Extensions, Wayne Blackard, Chief, EPA Region IX New Source Section (Sept. 8, 1988) (“Blackard Memo”).

KDHE Response:

Compliance with the emission limits in the December 16, 2010 and the limits in the MATS rule in effect upon startup are enforceable limits and must be met (see Response to Comment 2).

In the “Guidance on Extension of Prevention of Significant Deterioration (PSD) Permits under 40 CFR 52.21(r)(2)” of January 31, 2014 by Stephen Page, director of Office of Air Quality Planning and Standards (OAQPS), EPA, (Page memo, included as Attachment A), it said “[i]n addition to the 1988 Region 9 policy memorandum described above, in 1985 an EPA headquarters office developed a draft policy addressing PSD permit extension requests that was distributed for review among the EPA staff. This EPA headquarters office also developed a similar (but not identical) draft policy dated June 11, 1991. However, these documents were never issued in final form. Because the documents referenced in the comment above were drafts that were never finalized, they did not establish a controlling interpretation of the text in 40 CFR 52.21(r)(2).”

The stay is not unlawful and without effect, as stated in the comment. Even if this were the case, the Page memo states “the EPA believes that in order to give meaning to the extension provision in 40 CFR 52.21(r)(2), review or redo of substantive permit analyses such as BACT, air quality impacts analysis (AQIA) or PSD increment consumption analyses should generally not be necessary for a first permit extension request.”

Comment 6 (SC 2/18/14 Submittal, Section IV):

As established by EPA’s guidance, KDHE may grant extensions of the 18-month deadline for “virtually all good faith applications.” Tyler Memo at 26. An application for an extension must include an updated BACT analysis, and the application must be subject to a public comment period. *Id.* at 28-29. The updated BACT analysis must incorporate any new regulatory requirements. Blackard Memo at 3. A new increment consumption analysis and air quality impact analysis are generally not necessary, but may be required in some instances. Tyler Memo at 28. Extensions should generally be granted for no more than 18 months, or less where appropriate. *Id.* at 29.

EPA’s guidance notes that a timely BACT determination is particularly critical in new source review. *Id.* at 27. Accordingly, EPA determined that granting extensions to the 18-month deadline without requiring full PSD permit review may be appropriate, but only following a substantive review of such extension requests, including an updated BACT analysis. *Id.* at 26. This position presents a “reasonable compromise” that allows sources the flexibility to gain extensions, where justified, while still “assuring important environmental protection.” *Id.* This requirement ensures that if an extension is granted, a new major polluting source will still be subject to the most current pollution control technology and most recent regulations.

KDHE Response:

The January 31, 2014 Page memo states “[t]he EPA's recent experience is that improvements in pollution control technology for criteria pollutants have not been occurring as rapidly as was anticipated at the time of the earlier draft EPA policies on permit extensions. Thus, the time and resource burdens involved in reviewing an earlier permitting decision after the initial 18 months do not produce as much value in this context.”

An extension is not required, since the “stay” stopped the 18 month clock on June 1, 2011 and is still in effect. If an extension was required, the Page memo states the “first PSD permit extension request should include a detailed justification of why the source cannot commence construction within the initial 18-month deadline. For example, relevant factors for this justification could include ongoing litigation over the PSD permit, natural disasters that directly affect the facility, significant or unusual economic impediments (including inability to secure financial resources necessary to commence construction) and/or delays in obtaining other required permits.”

Comment 7 (SC 2/18/14 Submittal, Section IV):

Under the approved Kansas SIP, which incorporates the federal requirements, KDHE cannot evade the requirement that an extension include an updated BACT determination by issuing an unlawful “stay.” KDHE’s “stay” conflicts with the core purposes of the CAA as well as EPA’s explicit guidance. Sunflower must apply for a new permit, or at the very least must update its BACT determination to ensure that the plant it constructs incorporates the most current and most protective pollution controls.

KDHE Response:

The Page memo referred to above states “[t]he earlier draft documents also did not demonstrate that re-evaluation of permit conditions was necessary when other factors may otherwise provide a reasonable justification for an extension, such as litigation over the PSD permit or a lack of other approvals that precludes a source from commencing construction. In recent years, the EPA has noticed an increase in the number of PSD permits subject to judicial review and the time required to complete this process...” In light of the Page memo and the specific direction from the Kansas Supreme Court, there is no requirement for a new permit application or updated BACT determination.

Comment 8 (SC 2/18/14 Submittal, Section V):

As explained above, the Sunflower permit must include an updated BACT determination for all pollutants—and in addition, the permit must comply with all applicable standards in effect at the time the permit is issued on remand. Beginning on January 2, 2011,

greenhouse gases became a regulated pollutant under the “Tailoring Rule” issued by EPA. See “Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule; Final Rule,” 75 Fed. Reg. 31514 (June 3, 2010). Since that time EPA has issued additional guidance on greenhouse gas permitting in the context of the PSD program. See PSD and Title V Permitting Guidance for Greenhouse Gases, attached as Appendix C. As EPA has made clear, PSD permits must include a BACT determination for greenhouse gases. The proposed Holcomb plant is a major source and subject to this requirement; however, the draft permit and addendum issued by KDHE do not include a BACT determination for greenhouse gases. Accordingly, on remand KDHE must revise the permit to include a BACT determination for greenhouse gases and must allow public comment on its draft determination before issuing a final permit.

KDHE Response:

The Page memo states “[i]n certain circumstances, the EPA has not imposed PSD requirements resulting from a newly regulated pollutant or a new or revised national ambient air quality standard (NAAQS) or PSD increment on permit applicants that have already submitted complete PSD permit applications or on projects for which draft PSD permits have already been issued at the time when a new requirement would otherwise go into effect. These sources and modifications have been “grandfathered” from having to demonstrate compliance with the new or revised PSD regulatory requirements. Thus, the EPA has used grandfathering as a means of transition to new PSD requirements.”

The permit was issued on December 16, 2010 and the BACT determination for greenhouse gases rule went into effect January 2, 2011. Since the Supreme Court did not remand the permit on any re-analysis of BACT, or for an initial BACT analysis of greenhouse gases, KDHE did not do the analyses. As the Kansas Supreme Court referenced, KDHE relies on prior BACT determinations. Therefore, KDHE has determined that addressing the NAAQS and HAPs remands does not require reevaluation of the 2010 BACT determinations.

Sierra Club’s comments included Appendix A, entitled, SUNFLOWER-HOLCOMB 2014 PERMIT ADDENDUM, MERCURY AND BACT COMMENTS, Submitted by Dr. Ranajit Sahu. Comments in Appendix A have been addressed in the Sierra Club comments above, plus the following Comments 9 and 10.

Comment 9 (SC 2/18/14 Submittal, Appendix A):

The applicable mercury MACT limit for this new coal-fired unit was finalized on April 24, 2013.¹ We have excerpted the relevant table from the regulations below.

¹ FR 78, 24075, April 24, 2013. Reconsideration of Certain New Source Issues: National Emission Standards for Hazardous Air Pollutants From Coal- and Oil-Fired Electric Utility Steam Generating Units and Standards of

TABLE 1—REVISED EMISSION LIMITATIONS FOR NEW EGUS

Subcategory	Filterable particulate matter, lb/MWh	Hydrogen chloride, lb/MWh	Mercury, lb/GWh
New—Unit not designed for low rank virgin coal	9.0E-2.....	1.0E-2 ^a	3.0E-3.
New—Unit designed for low rank virgin coal.....	9.0E-2.....	1.0E-2 ^a	NR.
New—IGCC.....	7.0E-2 ^b	2.0E-3.....	3.0E-3.
	9.0E-2 ^c		
New—Solid oil-derived.....	3.0E-2.....	NR.....	NR.
New—Liquid oil—continental	3.0E-1	NR.....	NR.

Note: lb/MWh = pounds pollutant per megawatt-hour electric output (gross).

lb/GWh = pounds pollutant per gigawatt-hour electric output (gross).

NR = limit not opened for reconsideration (77 FR 9304; February 16, 2012).

^a Beyond-the-floor value.

^b Duct burners on syngas; based on permit levels in comments received.

^c Duct burners on natural gas; based on permit levels in comments received.

The proposed Holcomb unit will not use “low rank” coal, which refers to lignite.² Thus the applicable mercury limit is 3.0E-03 lb/GWh or 0.003 lb/GWh, as shown in the table above. Condition 2.h of the December 2010 permit states that “[r]egardless of fuel type fired, emissions of mercury for the unit shall not exceed 0.020 lb/GWh as determined on a 12-month rolling average basis.”³ Numerically, the new applicable limit is over 6 times lower than the current applicable limit. The new addendum does not discuss how this more stringent limit is to be met. The December 2010 permit states the following:

“[E]mission limits will be met by blending various coals, or by the injection of powdered activated carbon (PAC) or other sorbent or both. PAC or sorbent injection equipment will be installed for the H2 steam generator....”⁴ and

“[A]ctivated carbon or sorbent injection, other technology, or fuel blending that achieves similar reduction effectiveness is to be used to control mercury emissions....”⁵

None of these vague, non-specific statements (nor anything else in the record) provide any design details or information of how either the older, less stringent limit or the newer, more stringent limit is to be met...[Commenter references Comments 56 and 92, October

Performance for Fossil-Fuel-Fired Electric Utility, Industrial-Commercial-Institutional, and Small Industrial-Commercial-Institutional Steam Generating Units, Environmental Protection Agency (EPA), Final rule.

² Page 5 of the December 2010 permit notes the fuel to be used at the unit: “Fuel is to be Powder River Basin (PRB) subbituminous coal or other western coal.” The addendum to the permit does not contemplate any changes to this coal supply.

³ Condition 2.h, AIR EMISSION SOURCE CONSTRUCTION PERMIT Issued to Source (Holcomb Station) 0550023 on December 16, 2010 by the Kansas Department of Health and Environment (KDHE), p. 10.

⁴ December 2010 permit, p. 3.

⁵ December 2010 permit, p. 5.

22, 2010 and KDHE Responses, December 16, 2010. Refer to comment submittal for full text.]

Other than noting “that a substantial level of mercury emission reduction can be achieved with a blend of up to about 20 percent Western bituminous coal with PRB coal...” and relying on experience from the existing H1 unit at the site, the responses to the comments raised previously do not shed any additional light on how compliance will be achieved.

For example, in light of the more stringent requirement and the KDHE’s responses previously, will there need to be far greater than 20% blending of the PRB coal with the non-specified “Western bituminous coal”? If so, this will have implications on the operations and design of the boiler and the proposed pollution control train, including design of the SCR (based on the different coal composition and the resultant impacts on the catalysts at the SCR), and the FGD (since the sulfur content of the blend will change as the coal mix changes), and therefore on the emissions of pollutants such as NO_x, SO₂, acid gases, PM, and others.

In short, how compliance is proposed to be achieved for one pollutant, in this case mercury, will affect the design and operations of the controls that will, in turn, affect the emissions of other pollutants. Moreover, consider that the new mercury limit will be met by using activated carbon injection (ACI) or via the use of “other sorbents” as the December 2010 permit contemplates. This too provides no specificity. There are many different types of ACI on the market and some have even been tested at H1.⁶ These tests do not show that the proposed level of 0.003 lb/GWh can be met by the use of ACI. Or, if such a limit was to be met, how much ACI would need to be injected. The previous tests show that injection rates of ACI were already around 5 lb/MMacf of gas flow, presumably to meet the 0.020 lb/GWh limit. Thus, far greater injection rates would likely be required to meet the new, more stringent limit. This means that there will be increased load of the spent-ACI that will need to be managed or controlled by the fabric filter. More loading means greater operational stress on the baghouse, greater emissions from the baghouse, or both. Baghouse design and operations will need to be revisited, yet the addendum provides no discussions of any of this. EPA notes that “[A] full sized baghouse, with an A/C ratio of 4.0, should be specified when the baghouse will be the primary particulate collection device for the fly ash and activated carbon. The lower A/C ratio will provide better bag life with the high inlet particulate loading expected for the single particulate capture device in the process.”⁷ Of course, the ACI system itself will need to be redesigned, and emissions such as fugitive particulate emissions from the receiving, grinding, and handling of the ACI will also change. As EPA notes, “[W]hen an ACI system is required, the design carbon feed rate will dictate the size of the ACI

⁶ Looney, M., et. al., Overview of Mercury Emissions Control and ACI. Worldwide Pollution Control Association (WPCA)-Duke Energy FF/HAPS Seminar, October 12-13, 2011. See slides 13 and 14, which indicate that, for tests done at H1 using treated carbon, a maximum reduction of around 90% required 4-5 lb/mmacf of ACI (slide 14). Using untreated carbon, a 90% reduction required 5 lb/mmacf (slide 13).

⁷ IPM Model – Revisions to Cost and Performance for APC Technologies Mercury Control Cost Development Methodology, Final, March 2011, p. 7. Available at http://www.epa.gov/airmarkets/progsregs/epa-ipm/docs/append5_3.pdf.

equipment and the resulting capital costs. The carbon feed rate is a function of required removal, particulate collection device, and in some cases state regulations....”⁸

In addition, the ACI system can be affected by what is happening in other parts of the control system. Take the adverse impacts on ACI by sulfur trioxide or SO₃. SO₃ can dramatically reduce the effectiveness of mercury reduction via ACI.⁹ In fact, as the EPA states, in some cases high mercury removal simply cannot be met via ACI. “[S]ome flue gas constituents, especially SO₃, reduce the effectiveness of the ACI. With flue gas SO₃ concentrations greater than 5 - 7 ppmv, the carbon feed rate must be increased significantly to meet a high Hg removal and 90% mercury removal may not be feasible in some cases even with ACI.”¹⁰

Along with being generated in the boiler (which, in turn, depends on the coal-mix, as discussed previously), SO₃ can also be generated by the SCR catalyst. As EPA notes, “[T]he catalyst used in SCR systems is designed to facilitate the conversion of NO_x to N₂ and H₂O. The active ingredient used in SCR catalysts is vanadium pentoxide, which oxidizes sulfur dioxide (SO₂) to sulfur trioxide (SO₃) as well as elemental mercury to ionic mercury.”¹¹

For all of the reasons noted above and the various interactions between mercury removal strategies/options and their implications on the design and operations of other pollution control equipment (and therefore the emission rates of other pollutants), the KDHE’s addendum is woefully inadequate in that it simply omits any discussions of how the more stringent mercury limit will be met.

KDHE Response:

Please refer to the Response to Comment 2. The control technology and thus the emissions shall meet the compliance testing requirements of the MATS in effect upon startup or face enforcement actions until compliance is met. Sunflower has provided information that the mercury control vendors will guarantee their control technology to meet the MATS requirements for H2 before Sunflower will contractually obligate to the equipment.

To account for any increased amount of activated carbon injection (ACI) or use of “other sorbents” putting operational stress on the baghouse, the sizing of the baghouse is determined in the design phase and takes into account fly ash and activated carbon loading.

The concern of SO₃ being generated and causing reduced effectiveness of the ACI is not valid with low sulfur Powder River Basin (PRB) subbituminous or Western bituminous coal. Sunflower has verified this through SO₃ testing of H1.

⁸ Ibid., p. 6.

⁹ Looney, et. al., slides 17-20.

¹⁰ IPM Model, p. 4.

¹¹ IPM Model, p. 4.

Comment 10 (SC 2/18/14 Submittal, Appendix A):

While all of the BACT limits need to be revisited, we provide examples considering three pollutants: NO_x, SO₂, and filterable particulate matter or fPM.

The December 2010 permit specifies the following limits for these pollutants:

“The owner or operator shall not emit or cause to be emitted NO_x emissions exceeding 0.05 pounds per million BTU heat input (lb/mmBtu) on a 30-day rolling average basis, excluding periods of startup and shutdown.”¹²

“The owner or operator shall not emit or cause to be emitted SO₂ emissions, as determined on a 30-day rolling average basis, in excess of the emission limitations over a 30-day period which is the rolling average of the following emission limitations:

- i. 0.085 lb/mmBtu when scrubber inlet SO₂ is equal to or greater than 0.9 lb/mmBtu;
- ii. 0.060 lb/mmBtu when scrubber inlet SO₂ is less than 0.9 lb/mmBtu.”¹³

“The owner or operator shall not emit or cause to be emitted filterable particulate matter (PM, filterable PM₁₀ and filterable PM_{2.5}) emissions exceeding 0.012 lb/mmBtu on a 30-day rolling average basis.”¹⁴

While we stress that a new BACT analysis must focus on what limits are “achievable”, it is instructive to review what is already being achieved in practice (especially for a unit that will emit these pollutant years from now) at operational coal-fired power plants across the United States.

Table 1¹⁵... shows the NO_x levels on a monthly basis (i.e., similar to the averaging time in the December 2010 permit) for several coal units in the US, all of which are achieving better than 0.05 lb/MMBtu on a consistent basis during the period 2011-2013, i.e., after the issuance of the December 2010 permit. The data is taken from EPA’s Air Markets available at www.epa.gov/ampd. The KDHE could not have considered this data in its previous BACT determinations, and it now has an obligation to do so.

Similarly, for SO₂, we provide 2011-2013 actual performance data in Table 2¹⁶ for many US coal units that are consistently achieving better than 0.06 lb/MMBtu, which is the

¹² AIR EMISSION SOURCE CONSTRUCTION PERMIT Issued to Source (Holcomb Station) 0550023 on December 16, 2010 by the Kansas Department of Health and Environment (KDHE), Condition 2.a, p. 7.

¹³ Ibid., Condition 2.b, p. 8. The more stringent of the two SO₂ limits is 0.06 lb/MMBtu, on a 30-day averaging basis.

¹⁴ Ibid., Condition 2.c., p. 9.

¹⁵ Refer to Sierra Club comments dated February 18, 2014.

¹⁶ Refer to Sierra Club comments dated February 18, 2014.

more stringent of the two SO₂ limits specified in the permit. The number of units meeting the 0.085 lb/MMBtu limit specified in the permit are far greater. The data is taken from EPA's Air Markets available at www.epa.gov/ampd. The KDHE could not have considered this data in its previous BACT determinations, and it now has an obligation to do so.

Lastly, in Table 3¹⁷, we show actual performance data for filterable particulate matter from over 100 units, all of which are better than the limit of 0.012 lb/MMBtu. This data was collected by EPA as part of its MACT rulemaking and was not readily available to the KDHE at the time of the December 2010 permit issuance. As a result, the KDHE could not have considered it in its previous permit issuance. It now has an obligation to do so.

KDHE Response:

For NO_x emissions in Table 1, tangentially-fired units routinely perform slightly better with respect to NO_x emissions as compared to wall-fired units. EPA has recognized this difference of performance of the different types of boilers in other regulations with coal-fired EGU NO_x emissions limits. The Best Available Retrofit Technology (BART) default emissions limit for a tangentially-fired boiler is lower than that for a wall-fired boiler. 40 CFR Part 51 establishes a NO_x emissions limit for tangentially-fired boilers of 0.15 lbs/MMBtu and a NO_x emissions limit for wall-fired boilers of 0.23 lbs/MMBtu. The Acid Rain Program also has a NO_x standard annual average emissions limitation for Phase II tangentially-fired boilers of 0.40 lbs/MMBtu and a NO_x standard annual average emissions limitation for Phase II wall-fired boilers of 0.46 lbs/MMBtu.

Emissions rate data from existing similar facilities are useful in determining whether a proposed emissions limitation will be achievable at the new source. However, BACT does not require the selection of an emissions rate that has not been rigorously demonstrated to be achievable over the life of the facility. Permit writers retain discretion to set BACT levels that do not necessarily reflect the highest possible control efficiencies but will allow permittees to achieve compliance on a consistent basis.

In conclusion, the following points support the KDHE decision to establish a NO_x emissions limit of 0.05 pounds per million BTU (lb/mmBtu) heat input, 30 day rolling average.

- *Tangentially-fired units routinely perform better with respect to NO_x emissions as compared to wall-fired units.*
- *The 3 wall-fired units listed (Dry Fork Station, TS Power Plant, and Wygen III) have higher emission limits than Sunflower H2 of 0.05 lb/mmBtu 12 month rolling average plus 1.0 lb/MWh (0.0967 lb/mmBtu @ 37% thermal efficiency) 30 day rolling, 0.067*

¹⁷ Refer to Sierra Club comments dated February 18, 2014.

lb/mmBtu 24 hour rolling average and 0.05 lb/mmBtu 12 month rolling average, respectively.

- *The limit in the permit is consistent with other NO_x limits in previously issued PSD permits for similar units in the nation and is considered BACT.*

Table 2 contains SO₂ limits attained by several facilities. Duck Creek is a 440 MW coal fired unit that in late 2009, replaced an existing Flue Gas Desulfurization (FGD) with a Wet FGD, and Jeffrey Energy Center's three (3) 800 MW units have wet FGDs that were recently rebuilt with inside components having the latest technology. Winyah units 1 and 2 are 315 MW units that in 2007 had new Wet FGDs installed. Sam Seymour Units 1 and 2 are 600 MW units that in 2011 had new Wet FGDs, and unit 3 is a 450 MW unit which in 2012 had a new Wet FGD installed. Wet scrubbers have slightly higher efficiency than dry scrubbers.

Boswell Energy Center's unit 4 is a 585 MW unit which has a recently installed Alstom's NID semi-dry FGD all-in-one emission control system. Its 30 day rolling average emissions of SO₂ is comparable to Sunflower's H2 limit. Both WyGen II and Dry Fork have Dry FGDs and their limits are as follows: WyGen II: 0.10 lb/mmBtu 30 day rolling average plus 0.12 lb/mmBtu 3 hour block; Dry Fork: 0.070 lb/mmBtu 12 month rolling average plus 1.4 lb/MWh (0.1354 lb/mmBtu @ 37% thermal efficiency) 30 day rolling average.

After considering all factors that are required in a top down BACT analysis, the dry scrubber was determined to be BACT for Holcomb 2, therefore, KDHE approved Sunflower's selection of the dry scrubber. As part of the analysis, Sunflower chose a dry scrubber because of the following: a dry scrubber is the SO₂ control on Holcomb 1; the environmental benefits from a dry landfill; and less water availability in the semiarid conditions of southwest Kansas.

Table 3 contains data collected by EPA as part of its MACT rulemaking. This was data from the initial collection when 0.007 lb/MWh (equates to 6.77E-4 lb/mmBtu @ 37% thermal efficiency) was the limit for filterable particulate matter (fPM). This fPM limit was later revised to 0.09 lb/MWh. H2 limit is 0.012 lb/mmBtu (equates to 0.124 lb/MWh). As stated earlier, the control technology (fabric filter) in the December 10, 2010 permit was, and still is, the technology that is used in PSD pollutants and hazardous air pollutants (HAPs) control alike. The control technology and thus the emissions shall meet the compliance testing requirements of the MATS in effect upon startup or face enforcement actions until compliance is met.

B. True Blue Women, Prairie Village, KS

Comment 1:

KDHE's analysis to determine Best Available Control Technology (BACT) for Holcomb 2 is considerably out-dated. The BACT analysis is the under-pinning to a construction

permit for a major air pollutant source; a flawed BACT analysis will always lead to a flawed permit. Therefore, KDHE should perform a new comprehensive BACT analysis for all regulated air pollutants, including Greenhouse Gases, which evaluates the current feasibility of air pollution control technology. Such technology has changed substantially since the original BACT analysis was completed almost four (4) years ago. As a notable example, the U.S. Environmental Protection Agency (EPA) has recently proposed requiring Carbon Capture and Sequestration (CCS) for new coal-fired power plants. KDHE's 2010 BACT analysis rejected CCS as feasible at the Holcomb 2 plant, a finding that should be re-evaluated in a new BACT analysis, especially in light of EPA's proposal. As another example, the cost of natural gas has declined significantly over the past few years, invalidating KDHE's conclusion from 2010 that gas is too expensive as an alternative to coal. In fact, most owners planning new electrical generating units in the current regulatory environment are substituting cleaner, less polluting Combined-Cycle Natural Gas technology for coal-fired plants. Building Holcomb 2 without benefit of a new BACT analysis that examines this changing landscape guarantees that the pollution control equipment installed at the plant will be antiquated from the start, exposing citizens to pollution levels that far exceed the levels that can now be reasonably achieved with improved technologies. Additional delays are likely in building the Holcomb 2 plant due to a federal determination that an Environmental Impact Statement (EIS) must be completed before the plant can proceed. A typical EIS can take years to complete. This further underscores the importance of completing a new BACT analysis, if the plant is to be eventually built.

KDHE Response:

Please refer to the Response to Comments A. 4, 5, and 6 for outdated BACT issues and comment A.8 for GHG BACT issue. KDHE never rejected CCS technology as Sunflower was not required to do a BACT analysis on GHG.

As far as evaluating natural gas as an alternate to coal or combined-cycle turbine technology as an alternate to boiler technology, this is redefining the source and is not required as part of constructing or modifying a facility under the PSD program.

If an EIS is required by a federal regulation, it is outside the scope of KDHE. If it would require additional delays, KDHE will follow federal and state procedures to determine if a new BACT is necessary at that time.

Comment 2:

We disagree that the proposed permit Addendum adequately responds to the Court's order pertaining to EPA's new 1-hour NO₂ and SO₂ standards. The permit should establish much more stringent and hard NO_x and SO₂ emission limits that are consistent with the best currently available control technology, rather than simply inserting the

numerical limits used in KDHE's out-dated 2010 modeling for the plant. We believe that new modeling is necessary to establish these more protective limits.

KDHE Response:

Please refer to the Response to Comment A. 3.

Comment 3:

We disagree that the proposed permit Addendum adequately responds to the Court's order pertaining to EPA's new Hazardous Air Pollutants (HAPs) emission limits. The permit should establish hard numerical limits based on the best currently available control technology. HAPs from coal-fired power plants include heavy metals such as mercury, known to bio-accumulate and cause long term, serious health impacts to people, as well as animals. It is KDHE's statutory responsibility to protect public health by imposing stringent limits on these emissions.

KDHE Response:

Please refer to Response to Comment A.2.

Compliance with the emission limits in the December 16, 2010 and the limits in the MATS rule in effect upon startup are enforceable limits and must be met. The MATS rule has a Maximum achievable control technology (MACT) emission limitation that must be met for the new H2.

A MACT emission limitation for new sources is defined in 40 CFR 63.51 as " the emission limitation which is not less stringent than the emission limitation achieved in practice by the best controlled similar source, and which reflects the maximum degree of reduction in emissions of hazardous air pollutants (including a prohibition on such emissions, where achievable) that the Administrator, taking into consideration the cost of achieving such emission reduction, and any non-air quality health and environmental impacts and energy requirements, determines is achievable by sources in the category or subcategory to which such emission standard applies."

Comment 4:

In conclusion, True Blue Women does not believe that the Holcomb 2 permit Addendum adequately protects public health and the environment, nor does it respond to the order of the KS Supreme Court. The permit itself fails to consider new air pollution control technology which could significantly reduce emissions from any new power plant, and misses a key opportunity to place reasonable limits on Greenhouse Gases at Holcomb 2, consistent with EPA's proposed standards for new coal-fired power plants. Therefore, on behalf of the Board of Directors of True Blue Women, I respectfully urge KDHE to reconsider the permit and the permit Addendum in light of our comments and concerns.

KDHE Response:

Please refer to the Response to Comments A. 4, 5, and 6 for outdated BACT issues and Response to Comment A. 8 for GHG BACT issue.

C. Sunflower Electric Power Corporation

Comment 1 (Sunflower 1/24/14 Submittal):

The Kansas Supreme Court remanded the Holcomb 2 permit to KDHE and directed it to apply the new federal 1-hour SO₂ [June 22, 2010] and NO₂ [February 9, 2010] National Ambient Air Quality Standards (NAAQS) regulations in the permit process. Those regulations require a PSD permit applicant to model the proposed source's impact on the NAAQS and to establish limitations on the source if such limitations are necessary to prevent the source from causing or contributing to a violation of any NAAQS. Sunflower did the requisite modeling in 2010 and determined that emissions from the source, controls applied, would not, and indeed could not cause or contribute to a violation of either SO₂ or NO₂ 1-hour standard. Because KDHE raised initial concerns about variability of these emissions during startup and shutdown conditions, KDHE included startup and shutdown limitations for both SO₂ and NO_x in the 2010 permit. In response to the Supreme Court's remand, KDHE has changed the permit conditions by expressing the modeled emission rates for SO₂ and NO_x (which are protective of NAAQS) as 1-hour emission limitations that will apply at all times.¹⁸ This action fully addresses the Supreme Court's requirement that KDHE apply all the NAAQS in the permitting process regardless of whether they had yet been incorporated into the Kansas SIP.

KDHE Response:

Your comment is noted.

Comment 2 (Sunflower 2/18/14 Submittal):

The Kansas Supreme Court's remand also directed KDHE to apply the provisions of the Mercury and Air Toxic Rule (MATS) [April 24, 2012] for Hazardous Air Pollutants (HAPs), including mercury, in the permit. That section of the Clean Air Act, which establishes limitations on HAPs, applies to new sources such as Holcomb 2 once the rule is made final. The Kansas Supreme Court's decision required KDHE to "...apply the new HAPs emission limits that are expressly retroactive to this permit." KDHE, in the addendum, has specifically incorporated by reference the federal HAPs regulations and makes them applicable to the permit to comply with that aspect of the Court's remand. Sunflower appreciates your prompt attention to the issuance of this proposed addendum to the Holcomb 2 permit.

¹⁸ NO₂, the NAAQS pollutant of concern, is one constituent of NO_x; EPA regulates NO₂ from sources by regulating NO_x.

KDHE Response:

Your comment is noted.

Comment 3 (Sunflower 2/18/14 Submittal):

Section 165 (a)(3) of the CAA provides that a major emitting facility of regulated air pollutant emissions may not be constructed unless (among other things),

the owner or operator of such facility demonstrates, as required pursuant to section 7410(j) of this title, that emissions from construction or operation of such facility will not cause, or contribute to, air pollution in excess of any (A) maximum allowable increase or maximum allowable concentration for any pollutant in any area to which this part applies more than one time per year, (B) national ambient air quality standard in any air quality control region, or (C) any other applicable emission standard or standard of performance under this chapter

42 U.S.C. § 7475(a)(3).¹⁹ For the Project, this included demonstrating compliance with the 1-hour NAAQS for NO₂, promulgated by USEPA on February 9, 2010, effective April 12, 2010, and the 1-hour NAAQS for SO₂, promulgated by USEPA on June 22, 2010, effective August 23, 2010. Sunflower performed the requisite analyses following applicable regulations and guidance and demonstrated that Project allowable emissions, as reflected in the action levels in the Permit, would not cause or contribute to an exceedance of the 1-hour NO₂ and SO₂ NAAQS.

In connection with its application for the Permit (the Application) necessary to authorize construction of the Project, Sunflower had Shaw Environmental, Inc. (Shaw) undertake air dispersion modeling exercises in accordance with then-applicable USEPA regulations and guidance to determine whether allowable emissions of NO_x and/or SO₂ from the Project would have the potential to cause or contribute to an exceedance of either NAAQS.²⁰ Shaw's reports of its dispersion modeling analyses relating to these two NAAQS were submitted to KDHE on August 19, 2010 and are found in the agency record filed with the Court in connection with the Sierra Club appeal of KDHE's issuance of the Permit (the Record) at AR 38051- AR 38088 (for NO₂) and AR37865 - AR37868 (for SO₂).²¹ Shaw's analyses demonstrated that the Project's allowable emissions would not cause or contribute to an exceedance of the NAAQS.

¹⁹ This provision is reflected in the regulations implementing the Kansas Air Quality Act (the KAQA), K.S.A. § 65-7001, et. seq. at K.A.R. 28-19-301 (d).

²⁰ Such modeling exercises were, of course, carried out for all criteria pollutants as to every applicable NAAQS (Air Quality Review at 3-13; AR20796-AR20806); but only these two 1-hour NAAQS are at issue.

²¹ Section 3.1.3 of Part 5.0 of Sunflower's updated application, found in the Record at AR37798 - AR37885.

Upon due consideration of these reports, on December 16, 2010, in connection with its issuance of the Permit, KDHE issued a report of its Air Quality Impact Analysis Review relating to Sunflower's application (the Air Quality Review). This KDHE report is found in the Record at AR20792-AR20839. As set forth there, KDHE expressly determined that the allowable emissions from the Project would not have the potential to cause or contribute to an exceedance of either the 1-hour NO₂ NAAQS or the 1-hour SO₂ NAAQS, stating for both NO₂ and SO₂: "The results of the analyses indicated that for all modeled exceedances, the proposed project contributes less than the SIL [Significant Impact Level] and therefore does not cause or contribute to any modeled exceedance." (Air Quality Review at 12; AR20805). Likewise, in its Responsiveness Summary to public comments on KDHE's notice of its intent to approve Sunflower's application, a copy of which is found in the Record at AR21285-AR21492, the agency made exactly the same statement as it had in its Air Quality Review as to both modeling demonstrations. (Responsiveness Summary at 6; AR 21304)²² KDHE included the modeled 1- hour NO₂ and SO₂ allowable emissions as action levels in the Permit.

In addition to the air dispersion modeling analyses conducted by Shaw on behalf of Sunflower and evaluated by KDHE in 2010, Sunflower has caused Shaw (now a CB&I company) to carry out new air dispersion modeling exercises and analyses addressing these issues, taking into account all changes since December 16, 2010 to USEPA-issued regulations and guidance regarding such modeling exercises so as to comply with all provisions of such applicable regulations and guidance issued by USEPA to date (the Updated Modeling). This Updated Modeling takes into account the following changes to the applicable USEPA-issued regulations and guidance:

- Shaw has incorporated all changes to the USEPA-recommended AERMOD and AERMET software that has occurred between December 16, 2010 and December 24, 2013.
- Current USEPA guidance recommends that emergency generators not be taken into account in such modeling exercises. However, Shaw has carried out the 2014 modeling both including and excluding the emergency generators for the Holcomb1 steam generator at Holcomb Station (H1) and H2. Including the generators provides an even more conservative analysis than EPA requires.

In addition, Sunflower confirmed that various inputs to the 2010 modeling were still appropriate, as described below:

- H1 NO_x and SO₂ emission rates were properly ascertained in 2010.
- The NO₂/ NO_x ratio used in the 2010 modeling exercises was appropriate for those exercises and remains appropriate for the 2014 exercises, as confirmed by the technical memorandum from Ralph L. Roberson of RMB Consulting &

²² Copies of the relevant portions of the KDHE Air Quality Review and Responsiveness Summary are attached hereto as Exhibits A and B [of Sunflower's comment letter],, respectively.

Research, Inc. (RMB), to Sunflower's Wayne E. Penrod dated February 2014, a copy of which ...[was submitted with the comment letter as Exhibit C].²³

- A low NO_x burner replacement at H1 in early 2012, including the first deployment of over-fire air, has reduced the potential NO_x emission rates at H1 by 51% from those generated as of 2010, assuring that the conservative modeled values now overstate the pre-combustion control-limited emission rates by 95%. Retaining the 2010 H1 stack protocol for NO_x level in the Updated Modeling presents an even more stark demonstration of the sufficiency of the original H1 emission rate as shown in Exhibit C [of the comment letter].

- There has been no concurrent equipment upgrade on H1 for SO₂ control purposes. Sunflower has evaluated the most recent 4 years of SO₂ CEMS data to confirm the sufficiency of the original H1 modeled emission rate for SO₂.²⁴ Except for known control equipment and associated auxiliary equipment malfunctions there has been only one Dry FGD event during which stack SO₂ exceeded the H1 value modeled.²⁵ The total hours in four years for which SO₂ emissions exceeded the modeled emission rate due to system and sub-system malfunctions were 19.²⁶ There were no malfunctions in 2013. There was one power failure malfunction event in 2012 (one hour). In 2011, there were two malfunction events, the loss of the in-service slurry feed-tank due to tank blockage and subsequent repeated atomizer vibration trips arising from the feed-tank blockage (3 hours), and a complete loss of service water (10 hours) due to cascading major pipeline and other component failures arising during a relatively

²³ An NO₂ NAAQS impact assessment utilizing AERMOD dispersion modeling techniques requires the selection of an appropriate in-stack NO₂/NO_x ratio for each type of source modeled. Sunflower, relying on AP-42 information, used a ratio of 5% as identified in its protocol for H2 modeling. To affirm the appropriateness of the NO₂/NO_x, Sunflower retained RMB to perform a more robust analysis of data available from the H1 stack as described in the attached report. RMB determined the average NO₂/NO_x for H1 to be 1.8 percent, well less than the 5% AP-42 value used in the NAAQS analysis.

²⁴ SO₂ CEMS data for 2009 and prior years were evaluated during the 2010 updated application preparation. SO₂ CEMS data from 2010 thru 2013 and plant operator logs were reviewed to identify the root cause for any data hour when stack SO₂ measurements exceeded the modeled value of 1626.72 lb/hr.

²⁵ SO₂ CEMS data for February 23, 2012 exceed the modeled value for two hours during an extended 85-hour (3.5 days) startup experience which followed the major scheduled outage during which the previously mentioned NO_x control equipment was installed. The two hourly values measured, 1711 lb/hr and 1728 lb/hr, were well beyond the normal startup experience and were unavoidable because of the extraordinary startup circumstances.

²⁶ EPA guidance indicates that emissions resulting from malfunctions should not be included in NAAQS demonstrations. 40 C.F.R. 51, Appendix W, § 8.1.2.a In a ("Malfunctions which may result in excess emissions are not considered to be a normal operating condition. They generally should not be considered in determining allowable emissions.")

routine scheduled isolation valve replacement for the service water supply to the Dry FGD. In 2010 there were five distinct malfunction events totaling 11 hours.²⁷

A copy of the Shaw report regarding the Updated Modeling and its analyses of the modeling results (the Updated Analysis), entitled Air Dispersion Modeling Analysis, Sunflower Electric-Holcomb Station and dated February 2014, is attached [to the comments submitted] as Exhibit D. In short, the results discussed in this report confirm KDHE's 2010 determination that allowable emissions (the action levels in the Permit) from the Project will not have the potential to cause or contribute to any exceedance of the 1-hour NO₂ NAAQS or the 1-hour SO₂ NAAQS.

KDHE Response:

Your comment is noted.

KDHE notes the following observations from the modeling files:

- *Only one emergency generator was removed from the model, the 1200 kW emergency generator. The diesel fire pumps for H1 and H2 were not removed. This is a more conservative approach than is required by current EPA guidance.*
- *For SO₂ dispersion modeling, the SIL used was EPA's SIL of 3 ppb. For NO₂ dispersion modeling, the SIL used was EPA's SIL of 4 ppb. This is a more conservative approach than is required by current KDHE guidance.*

The modeling results submitted indicate that there were modeled exceedances, however, for all modeled exceedances, the expansion project contributes less than the SIL and therefore does not cause or contribute to any NAAQS exceedance.

²⁷ SO₂ CEMS data for May 25, 2010 exceeded the modeled value for one hour due to a first-contingency subcomponent solenoid valve failure on the recycle ash dust collector, which resulted in the loss of slurry fabrication capability. SO₂ CEMS data for August 12, 2010 exceeded the modeled value for one hour due to an atomizer power failure due to voltage transients during a severe thunderstorm. SO₂ CEMS data for October 3, 2010 exceeded the modeled value for two hours due to the loss of lime feed to the slurry fabrication systems. SO₂ CEMS data for October 19, 2010 exceeded the modeled value for six hours due to a loss of the main AC power circuit breaker because of a sub-component breaker failure in the scrubber. The atomizers, slurry fabrication system, pumping, and feed loop systems were all affected by the loss of power and the subsequent repair. This was a scrubber malfunction. SO₂ CEMS data for December 21, 2010 exceeded the modeled value for two hours due to the loss of water supply to the slurry fabrication systems. Again, these were all malfunctions or otherwise extraordinary events associated with scrubber subsystems. Compliance with applicable emission limitations was not impacted by any event occurring in 2010.

Comment 4 (Sunflower 2/18/14 Submittal):

On May 3, 2011, USEPA published in the Federal Register notice of the agency's intent to promulgate new regulations regarding hazardous air pollutant (HAP) emissions from coal fired power plants, including control technology-based emission limits for certain HAPs. 76 Fed. Reg. 24,976 (May 3, 2011). On February 16, 2012, USEPA published in the Federal Register a final MATS Rule, which (among other things) established emission limitations for HAPs emissions from new coal-fired power plants. 77 Fed. Reg. 9304-9513 (Feb. 16, 2012). On April 24, 2013, USEPA published in the Federal Register an amended MATS Rule that to some extent modified the HAPs emission limitations for new coal-fired power plants. 78 Fed. Reg. 24,073 (April 24, 2013).

The MATS Rule emission limitations apply to H2. While the CAA does not require that these limitations be cited in the Permit, Sunflower does not object to the inclusion of a reference to the rule.

KDHE Response:

Your comment is noted.

D. Citizen BC, Garden City, KS

Apply one-hour federal air quality emission standards for nitrogen dioxide and sulfur dioxide and new air emission limits.

KDHE Response:

Per direction from the Kansas Supreme Court, KDHE has applied the federal regulations establishing 1-hour NO₂ and SO₂ NAAQS, and added 1-hour NO₂ and SO₂ emission limits in the Addendum.

E. Citizen CC, Lawrence, KS

If a permit is issued, it should require that the plant abide by the new EPA standards for carbon emissions for coal-fired plants (EPA-HQ-OAR-2013-0495). Since the prevailing winds will be blowing pollutants into Kansas, it will be necessary to have the cleanest possible plant.

KDHE Response:

Please refer to the Response to Comments IV. I and V. A. 8.

The proposed project was required to complete a BACT analysis in 2010. The permit requires installation of the best available control technology.

F. Citizen TC, Lawrence, KS

The KDHE permit must comply with the EPA regulations in one-hour emission limits for nitrogen dioxide and sulfur dioxide.

KDHE Response:

Please refer to the Response to Comment V.D.

G. Citizen EH, Shawnee Mission, KS

Comment 1:

The analysis for air pollution in the addendum is outdated. It needs to assess current air pollution control tests. In fact a case can be made that NO₂ and SO₂ standards need to be more stringent since the outdated 2010 permit.

KDHE Response:

Please refer to the Response to Comments V. A. 3, 4, and 6.

Comment 2:

Additionally, KDHE should require Holcomb 2 to regulate hazardous air pollutants such as mercury which have detrimental impacts on animals and humans.

KDHE Response:

Please refer to the Response to Comment V. A. 2.

H. Citizen MH, Lawrence, KS

Comment 1:

I do not believe the addendum sufficiently addresses the Supreme Court's ruling and believe it questionably claims that new modeling would demonstrate compliance with the NAAQS without requiring any additional modeling.

KDHE Response:

Please refer to the Response to Comment V. A. 3.

Comment 2:

The addendum requires compliance with the HAP emission limits, but we have no clear understanding how Sunflower will accomplish this. The addendum needs to be fleshed out to a much greater degree, with specific measures for accountability established.

KDHE Response:

Please refer to the Response to Comment V. A. 2.

Comment 3:

Neither does any of this address the 800 lb gorilla in the room - greenhouse gas emissions.

KDHE Response:

Please refer to the Response to Comments IV. I., V.A.6., and V.A.8.

I. Citizen BS, Shawnee, KS

If Holcomb 2 is to proceed, a revised permit should be based upon a new and updated analysis to determine Best Available Control Technology (BACT) to reflect current air pollution control technology. Such technology has changed substantially since the original BACT analysis was completed almost four (4) years ago. The updated BACT analysis must address all regulated pollutants including Greenhouse Gases.

KDHE Response:

Please refer to the Response to Comments V. A. 4, 5, 6, and 8 and the Response to Comment IV. I.

J. Citizen ES, Wichita, KS

Comment 1:

The Addendum concludes that new modeling using the current EPA requirements for NO₂ and SO₂ emissions would meet the current requirements, even though, such modeling has not been done.

KDHE Response:

Please refer to the Response to Comment V. A. 3.

Comment 2:

The Addendum simply adds language saying that the applicant will meet all provisions regarding Hazardous Air Pollutants as they apply to the H2 steam generator. No description of how this will be accomplished is given or required.

KDHE Response:

Please refer to the Response to Comment V. A. 2.

Comment 3:

Thus, the Addendum fails to consider Best Available Control Technology and does not satisfy permitting requirements.

KDHE Response:

Please refer to the Response to Comment V. A. 4, 5, 6, and 8.

K. Citizen CV, Kansas City, KS

Comment 1:

KDHE proposes to re-issue the Holcomb 2 permit essentially unchanged. Yet the Supreme Court specified that KDHE must make some very specific changes to the emission limits for mercury, particulate matter, oxides of nitrogen and sulfur to bring them into conformance with current EPA rules. For this reason alone KDHE must reject this permit.

KDHE Response:

Please refer to the Section III of this Responsiveness Summary, and Response to Comments V. A. 2, and 3.

Comment 2:

KDHE must reject the permit for another equally important reason, that Holcomb 2 did not conduct a new Best Available Control Technology analysis. Holcomb 2 was not BACT to begin with during the previous permit proceedings, and yet another five years have passed. KDHE has required no changes to the pollution controls this time around. The Clean Air Act is very clear that the design of any new project like Holcomb 2 must take into account the latest process design and the best performance that air pollution equipment has achieved anywhere in the country.

KDHE Response:

Please refer to the Response to Comments V. A. 4, 5, 6, and 8.

Comment 3:

Since carbon dioxide has been a regulated pollutant for some years now, KDHE should have required Sunflower Electric to produce a BACT analysis for CO₂ but did not.

KDHE Response:

Please refer to the Response to Comments IV. I., and V.A.8.

L. Citizen SY, Ottawa, KS

My reading of KDHE's reply to the Kansas high court's concerns is that since KDHE believes its 2010 air quality test [dispersion modeling] results were assessed conservatively it (KDHE) assumes without actual testing [dispersion modeling] that Holcomb 2 will meet the new EPA standards. This means KDHE won't do due diligence but instead just assume Holcomb 2 will meet the current EPA standards. This is an unacceptable posture to me.

KDHE Response:

Please refer to the Response to Comment V. A. 3.

Attachment A



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
RESEARCH TRIANGLE PARK, NC 27711

JAN 31 2014

OFFICE OF
AIR QUALITY PLANNING
AND STANDARDS

MEMORANDUM

SUBJECT: Guidance on Extension of Prevention of Significant Deterioration (PSD) Permits under 40 CFR 52.21(r)(2)

FROM: Stephen D. Page, Director *Michael Kuenberger*
Office of Air Quality Planning and Standards

TO: Regional Air Division Directors, Regions 1-10

The purpose of this memorandum is to clarify the U.S. Environmental Protection Agency's views on what constitutes adequate justification for an extension of the 18-month timeframe for commencing construction of a source that has been granted a preconstruction permit under the prevention of significant deterioration (PSD) provisions of part C of title I of the Clean Air Act (CAA). Such extensions are authorized by 40 CFR 52.21(r)(2).^{1,2}

This guidance primarily applies to the EPA and delegated permitting authorities. In preparing the guidance, we sought input from regional offices and also informed state and local air agency staff about its main concepts.

For questions on this guidance, please contact Raj Rao at (919) 541-5344, rao.raj@epa.gov or Jessica Montañez at (919)541-3407, montanez.jessica@epa.gov.

BACKGROUND

The permit extension provision at 40 CFR 52.21(r)(2)³ establishes that "approval to construct [a new major stationary source or major modification] shall become invalid if construction is not commenced

¹ This document explains the requirements of the EPA regulations, describes the EPA policies, and recommends procedures for permitting authorities to use to ensure that permitting decisions are consistent with applicable regulations. This document is not a rule or regulation, and the guidance it contains may not apply to a particular situation based upon the individual facts and circumstances. This guidance does not change or substitute for any law, regulation or any other legally binding requirement and is not legally enforceable. The use of non-mandatory language such as "guidance," "recommend," "may," "should" and "can," is intended to describe the EPA policies and recommendations. Mandatory terminology such as "must" and "required" are intended to describe controlling requirements under the terms of the CAA and the EPA regulations, but this document does not establish legally binding requirements in and of itself.

² In 1992, the EPA finalized permit extension provisions in 40 CFR 55.6(b)(4) for sources seeking permits in the Outer Continental Shelf (OCS). The permit extension provisions in 40 CFR 55.6(b)(4) only apply to OCS sources and as such they are not addressed by the clarifications in this memorandum.

³ The CAA does not expressly include the 18-month deadline or any provision for extending that deadline. Thus, the EPA's analysis focuses on the regulatory text.

within 18 months after receipt of such approval, if construction is discontinued for a period of 18 months or more, or if construction is not completed within a reasonable time.”⁴ In addition, this provision states that “the [EPA] Administrator may extend the 18-month period upon a satisfactory showing that an extension is justified.”⁵ This provision gives the EPA discretion to extend the 18-month commencement of construction deadline for PSD permits issued under federal authority where the EPA determines that a “satisfactory showing that an extension is justified” has been made. The PSD regulations indicate that the EPA should exercise this discretion on a case-by-case basis, evaluating whether the showing offered for a particular extension is satisfactory and, accordingly, whether an extension is justified for a particular permit. The text of 40 CFR 52.21(r)(2) does not provide any specific criteria or required process that must be satisfied before the EPA can exercise its discretion to determine that a permit extension is justified.

The EPA has previously considered how it would exercise its discretion in determining whether granting a permit extension was justified under the provision in 40 CFR 52.21(r)(2). In 1988, Wayne Blackard, then Chief of the EPA’s Region 9 New Source Section, issued a policy memorandum⁶ describing how Region 9 intended to exercise its discretion at that time in determining whether granting an extension of the 18-month commencement of construction deadline was justified per 40 CFR 52.21(r)(2). However, the approach described in the 1988 Region 9 policy memorandum is not, and never has been, the exclusive means by which an applicant can show that an extension of the 18-month expiration period is justified. The 1988 Region 9 policy memorandum did not purport to interpret the terms of 40 CFR 52.21(r)(2) and did not state that the provision requires the approach outlined in the memorandum to show that an extension of the 18-month timeframe for commencing construction is justified. Accordingly, the 1988 Region 9 policy memorandum should not be viewed as a controlling EPA interpretation of 40 CFR 52.21(r)(2), but rather should be regarded as a prior Region 9 policy statement for PSD permit extensions. This 1988 Region 9 policy memorandum asked the permittee to submit a complete re-analysis of PSD permit requirements and stated that the Region would conduct another comprehensive PSD review. This comprehensive PSD review was to include a re-analysis of the best available control technology (BACT), a re-analysis of air quality impacts and PSD increment consumption, and an analysis of any new PSD requirements. The 1988 Region 9 policy memorandum also called for a public participation process under 40 CFR 124 in order to determine that a PSD permit extension was justified under 40 CFR 52.21(r)(2).

In addition to the 1988 Region 9 policy memorandum described above, in 1985 an EPA headquarters office developed a draft policy addressing PSD permit extension requests that was distributed for review among the EPA staff.⁷ This EPA headquarters office also developed a similar (but not identical) draft policy dated June 11, 1991.⁸ However, these documents were never issued in final form. Because these

⁴ This guidance is specifically intended to clarify our current views on processing requests to extend the 18-month timeframe for commencing construction under 40 CFR 52.21(r)(2). It does not address the two other aspects of 40 CFR 52.21(r)(2), i.e., the provisions pertaining to discontinuing construction and completion of construction within a reasonable time. Requests pertaining to these provisions occur less frequently, and may present different considerations, than requests for extension of the deadline for commencing construction. The EPA will exercise its discretion to address these requests on a case-by-case basis.

⁵ For phased construction projects, the provision also states that “each phase must commence construction within 18 months of the projected and approved commencement date.”

⁶ Memorandum from Wayne Blackard, Chief, New Source Section, EPA Region 9 Policy on PSD Permit Extensions (September 8, 1988). See <http://www.epa.gov/ttn/naaqs/aqmguides/collection/nsr/extnsion.pdf>.

⁷ Memorandum from Darryl D. Tyler, Director, Control Program Development Division, Revised Draft Policy on Permit Modifications and Extensions (July 5, 1985). See <http://www.epa.gov/ttn/naaqs/aqmguides/collection/nsr/permmmod.pdf>.

⁸ See <http://www.regulations.gov/#!documentDetail;D=EPA-R09-OAR-2013-0190-0010>.

documents were drafts that were never finalized, they did not establish a controlling interpretation of the text in 40 CFR 52.21(r)(2). These draft EPA headquarters policies called for public notice and comment for PSD permit extensions and a substantive re-analysis of BACT and in some instances other PSD requirements. The draft policies discussed the role of the permit expiration requirement in ensuring that PSD analyses, in particular BACT, be current for PSD-permitted projects. These draft policies were based on the idea of allowing extensions readily but requiring substantive review to ensure that the BACT limits and other conditions in the original permit remained current. The EPA developed these draft approaches as alternatives to other approaches, such as requiring a showing of the inability of the source to construct due to various reasons including but not limited to economic or legal constraints. In the 1985 and 1991 draft policy memoranda, the EPA explained that the latter approaches presented varying degrees of subjectivity and certain difficulties in the factual analysis, which these draft policies sought to avoid.

THE EPA'S POLICY ON PSD PERMIT EXTENSIONS

After further consideration of the practical impact of these earlier policies, the EPA has determined that it is more appropriate and consistent with the terms of 40 CFR 52.21(r)(2) to evaluate on a case-by-case basis whether an applicant has shown that an extension of the deadline for commencing construction of a PSD permit is justified. This analysis would include a case-by-case consideration of the appropriate factors and process to be employed in determining whether to grant such request. As 40 CFR 52.21(r)(2) does not specify that any particular criteria must be satisfied or process followed, this case-by-case approach is consistent with the provision and the discretion that it provides to the EPA.

Requiring substantive review of a prior PSD permitting decision and conducting an additional public participation process in the context of PSD extension requests has resulted in little or no practical distinction between the extension of an existing PSD permit and an applicant having to apply for a new permit. The 1985 and 1991 draft policies did not consider how this approach could obscure the distinction between extension of an existing permit and requiring the applicant to apply for a new permit. The intensive substantive review and associated public participation process called for in the 1988 Region 9 policy memorandum further illustrates this tension between a permit extension and a new permit. The EPA believes it is important to give meaning to the extension provision in the PSD regulations.

The 1985 and 1991 draft policy memoranda did not recognize other potential downsides of the approach they described, such as the potential for substantial further delay or the significant resource burden that may result from substantive re-analysis of the permit in the context of even a relatively brief extension request. The EPA's recent experience is that improvements in pollution control technology for criteria pollutants have not been occurring as rapidly as was anticipated at the time of the earlier draft EPA policies on permit extensions. Thus, the time and resource burdens involved in reviewing an earlier permitting decision after the initial 18 months do not produce as much value in this context. The earlier draft documents also did not demonstrate that re-evaluation of permit conditions was necessary when other factors may otherwise provide a reasonable justification for an extension, such as litigation over the PSD permit or a lack of other approvals that precludes a source from commencing construction. In recent years, the EPA has noticed an increase in the number of PSD permits subject to judicial review and the time required to complete this process, particularly in the U.S. Courts of Appeals. The earlier draft policies expressed concern with subjectivity and difficulties in verifying facts showing the inability of the source to construct due to various reasons such as economic or legal constraints. However, the EPA has not encountered such difficulties in its more recent reviews of permit extension requests or

received information indicating that other PSD permitting authorities are frequently experiencing such difficulties.

With regard to soliciting public comment on an extension request, the earlier Region 9 and draft headquarters policies deemed this process advisable in the context of other elements of the policies that called for substantive review of PSD requirements such as BACT before granting the extension. When this kind of substantive review is not conducted, the EPA does not see the same basis for providing an opportunity for public comment on an extension of the deadline for commencing construction. A later section of this memorandum discusses the issue of the appropriate process for granting a permit extension in more detail.

As a policy matter, the EPA generally intends to exercise its discretion, in accordance with 40 CFR 52.21(r)(2), to make a case-by-case evaluation of whether a source's showing is satisfactory and, therefore, whether an extension is justified for a particular permit.⁹ The text of 40 CFR 52.21(r)(2) does not provide any specific criteria or required process that must be satisfied before the EPA can exercise its discretion to determine that a permit extension is justified. Therefore, the elements outlined below represent various aspects of permit extension situations that the EPA Regions, and state, tribal or local programs that issue permits on behalf of the EPA in accordance with 40 CFR 52.21(u) ("delegated permitting authorities"), should generally consider in determining whether a particular permit extension is justified. However, these aspects do not represent the only factors that may be relevant when considering whether a particular permit extension is justified. Consistent with 40 CFR 52.21(r)(2), the EPA may in a particular case exercise its discretion to determine that another type of showing is sufficient or necessary to justify a permit extension. If a delegated permitting authority is considering issuing a permit extension, the delegated permitting authority should coordinate with the EPA to ensure that the approach being considered is consistent with 40 CFR 52.21(r)(2).

WHEN AN EXTENSION REQUEST SHOULD BE MADE

While 40 CFR 52.21(r)(2) does not specify a deadline for requesting a PSD permit extension, sources are strongly encouraged to request a permit extension in advance of the end of the 18-month period for commencing construction. The EPA and delegated permitting authorities should strive to make PSD permit extension decisions as expeditiously as possible.

LENGTH OF EXTENSION

The EPA's regulations do not state the time period for a permit extension granted under 40 CFR 52.21(r)(2). However, we believe that PSD permit extensions generally should be available for an additional 18-month period following the initial 18-month timeframe for commencing construction set forth in 40 CFR 52.21(r)(2), and should be based on adequate justification for the length of the permit extension. Permit extensions for shorter or longer time periods may be granted depending on the particular demonstration that an extension of the commencement of construction deadline is justified.

⁹ We note that the EPA Region 9 has previously applied the reasoning reflected in this guidance in making a case-specific determination, in the context of a particular request to extend the deadline for commencement of construction in a PSD permit. Information concerning this determination can be found at 78 FR 40968 (2013). See <http://www.gpo.gov/fdsys/pkg/FR-2013-07-09/pdf/2013-16334.pdf>

PSD PROGRAMS UNDER APPROVED STATE IMPLEMENTATION PLANS (SIPs)

We note that while the 18-month timeframe for commencing construction appears in the EPA's rules in 40 CFR 52.21, neither the CAA nor the EPA's rules in 40 CFR 51.166, which govern SIP-approved PSD programs, contain this 18-month deadline. Accordingly, SIP-approved programs are not required to include the 18-month construction deadline, and nothing in this guidance should be read to indicate that SIP-approved PSD programs need to be revised consistent with this guidance. Nonetheless, we encourage permitting authorities with SIP-approved PSD programs that incorporate the 40 CFR 52.21(r)(2) provision by reference or that implement a provision similar to 40 CFR 52.21(r)(2) to apply this policy or a policy that is similar to that included in this memorandum. Owners or operators of facilities seeking extensions of PSD permits issued by state, tribal or local authorities with SIP-approved programs should contact their PSD permitting authority for information on the applicable requirements.

EXTENSION OF MINOR SOURCE PERMITS

This permit extension guidance does not address minor New Source Review (NSR) permit extension requests (other than requests for certain sources in Indian country¹⁰) because the provision in 40 CFR 52.21(r)(2) does not apply to minor NSR sources. Owners or operators of facilities with questions on minor source permit extensions should contact their minor NSR permitting authority.

FIRST PERMIT EXTENSION REQUEST

In accordance with 40 CFR 52.21(r)(2), a permittee's first PSD permit extension request should include a detailed justification of why the source cannot commence construction within the initial 18-month deadline. For example, relevant factors for this justification could include ongoing litigation over the PSD permit, natural disasters that directly affect the facility, significant or unusual economic impediments (including inability to secure financial resources necessary to commence construction) and/or delays in obtaining other required permits.

Furthermore, the EPA believes that in order to give meaning to the extension provision in 40 CFR 52.21(r)(2), review or redo of substantive permit analyses such as BACT, air quality impacts analysis (AQIA) or PSD increment consumption analyses should generally not be necessary for a first permit extension request.

SECOND PERMIT EXTENSION REQUEST

The EPA believes that in most cases a request for a second extension of the commencement of construction deadline should include a substantive re-analysis and update of PSD requirements. Only in rare circumstances would a detailed justification of why a source cannot commence construction by the current deadline (as is recommended above for the purpose of requesting the first extension) be sufficient to support a second extension. Generally, the benefits of conducting an updated substantive review of the PSD requirements after 36 months from the initial issuance of the PSD permit would

¹⁰ Since PSD sources in Indian country are currently permitted under 40 CFR 52.21 and the permit extension provisions for minor sources in Indian country (40 CFR 49.155(b)) are identical to those in 40 CFR 52.21(r)(2), this guidance also extends to the EPA's consideration of sources seeking extensions of the deadline for commencing construction in PSD and minor NSR permits in Indian country until such time as a tribe develops and the EPA approves a tribe's PSD or minor NSR Tribal Implementation Plan (TIP).

outweigh the considerations discussed above that favor an initial extension without such analysis. While the EPA's experience is that pollution control technology for criteria pollutants has not been advancing at the same rate that it once was, the EPA believes that it is more likely that technology and air quality considerations will become outdated when construction does not begin until 36 months or longer after the EPA has taken final action to issue a PSD permit. Therefore, when a second extension of the deadline for commencing construction is requested, the EPA will evaluate on a case-by-case basis whether a second permit extension is justified. In some cases, the EPA may ask the permittee to apply for a new PSD permit rather than conduct its review through a permit extension proceeding.

PSD PERMIT EXTENSIONS INVOLVING GRANDFATHERED REQUIREMENTS OR REQUIREMENTS THAT TAKE EFFECT DURING THE INITIAL 18-MONTH PERMIT TERM

In certain circumstances, the EPA has not imposed PSD requirements resulting from a newly regulated pollutant or a new or revised national ambient air quality standard (NAAQS) or PSD increment on permit applicants that have already submitted complete PSD permit applications or on projects for which draft PSD permits have already been issued at the time when a new requirement would otherwise go into effect. These sources and modifications have been "grandfathered" from having to demonstrate compliance with the new or revised PSD regulatory requirements. Thus, the EPA has used grandfathering as a means of transition to new PSD requirements.

Current PSD regulations do not speak specifically to whether an extension of the initial 18-month commencement of construction deadline may be justified where a project has been grandfathered in the initial PSD permit decision from PSD requirements that would otherwise have applied. Therefore, the EPA believes it is appropriate and consistent with the terms of 40 CFR 52.21(r)(2) and the discretion provided by those terms to evaluate on a case-by-case basis whether and under what circumstances a PSD permit extension is justified in the context of such a source. Therefore, a source that was grandfathered from PSD requirements that seeks a permit extension is encouraged to address in its permit extension request and justification the significance of the grandfathering and whether the EPA's basis for grandfathering the permit still applies to the source.

Similarly, the PSD regulations do not specifically address situations where a new pollutant is regulated or a NAAQS is promulgated or revised after a permit is issued but before the expiration of the 18-month deadline for commencing construction. In its 1988 policy memorandum, Region 9 called for a PSD permit extension application to address the new PSD permitting requirements that became applicable in this 18-month period. However, considering the extension language of 40 CFR 52.21(r)(2) and the value of giving an extension meaning independent of a new permit application, the EPA believes that a permitting authority has the discretion to evaluate on a case-by-case basis whether and under what circumstances it would be justified to issue a PSD permit extension without requiring the source to meet a new requirement that took effect during the term of the initial permit.¹¹ Thus, applications for permit extensions should address this issue, if applicable.

¹¹ The EPA has explained elsewhere that a PSD permit issued before a new requirement takes effect does not need to be reopened. 75 FR 31514, 31593 (June 3, 2010).

PSD PERMIT EXTENSIONS FOR AREAS THAT HAVE BEEN REDESIGNATED FROM ATTAINMENT TO NONATTAINMENT

Part D of the CAA contains the general and pollutant-specific requirements applicable to all areas that are designated nonattainment of the NAAQS. However, neither the CAA nor the regulatory text at 40 CFR 52.21(r)(2) provides any specific criteria or required process for PSD permit extensions in areas that have been redesignated from attainment to nonattainment for a particular pollutant following PSD permit issuance.

On March 11, 1991, John S. Seitz, then Director of the Office of Air Quality Planning and Standards, issued a policy memorandum concerning certain transitional issues related to changes to the NSR requirements of the PSD and nonattainment area programs resulting from the CAA Amendments of 1990. Among other things, this memorandum stated, without detailed discussion, that it would be inappropriate to extend the PSD permit expiration deadline for permits issued to sources in areas that have been designated as nonattainment following permit issuance.

As with the other older policy memoranda discussed in this document, this 1991 Seitz memorandum does not purport to interpret the terms of 40 CFR 52.21(r)(2) and does not state that the regulation requires the approach outlined therein in all circumstances to determine whether an extension of a PSD permit's commencement of construction deadline is justified in areas that have been redesignated as nonattainment following PSD permit issuance. In addition, the memorandum does not discuss how PSD continues to apply to pollutants for which the area remains designated attainment while nonattainment NSR becomes applicable only to the pollutants for which the area is designated as nonattainment. Considering this distinction, the EPA believes that it is appropriate and consistent with the terms in 40 CFR 52.21(r)(2) to evaluate on a case-by-case basis whether an extension of the PSD permit is justified in situations where one or more pollutants have been redesignated nonattainment following PSD permit issuance and the PSD permit contains other pollutants for which the area remains in attainment. However, for the pollutant(s) for which the area changed to nonattainment, these pollutant(s) should be evaluated by the appropriate permitting authority under the applicable nonattainment NSR permit requirements prior to commencing construction if construction will be delayed beyond the 18-month deadline.¹² We do not believe it is consistent with the purposes of the nonattainment NSR program to use an extension of the deadline for commencing construction in a PSD permit for the pollutants that remain in attainment as a shield against the requirements to obtain a major nonattainment NSR permit, if applicable, for the pollutant(s) for which the area has become nonattainment.

PUBLIC NOTICE AND COMMENT ON PSD PERMIT EXTENSION ACTIONS

Public notice and comment is not necessary for permit extension actions that would simply extend the deadline for commencing construction without reconsideration or amendment of the substantive conditions of the permit.

The EPA has considered the question of whether PSD permit extension actions pursuant to 40 CFR 52.21(r)(2) are subject to the procedures in the EPA's permitting regulations at 40 CFR Part 124. The provisions in 40 CFR Part 124 do not reference extensions of PSD permits. The EPA notes that section

¹² 40 CFR 51.165 and 40 CFR 49.166 include the regulatory text for state/local and tribal nonattainment permitting programs, respectively. 40 CFR Appendix S contains the nonattainment NSR requirements for areas newly designated nonattainment for which a revised SIP or TIP is not in place yet.

124.15 does state that a “final permit decision” includes a decision to “modify” a permit, but the EPA has not yet promulgated more specific provisions regarding modifications of PSD permits. *See* 40 CFR 124.5(g). Thus, the precise scope and meaning of the term “modify” as applied to a PSD permit is not clear from the Part 124 regulations.

In the absence of controlling regulations, the EPA views the modification of a PSD permit to include material changes to substantive terms and conditions that govern the construction and operation of the source. We do not interpret the term “modify” in this context to include the decision to issue an administrative amendment to extend the deadline for commencing construction under the PSD permit without reconsideration or amendment of the substantive conditions of the permit. Therefore, the EPA has determined that permit extension actions that would simply extend the deadline for commencing construction without reconsideration or amendment of the substantive conditions of the permit are not subject to the procedures in Part 124. We also believe that a public notice-and-comment period for a permit extension request would generally be unnecessary where no re-analysis of substantive PSD permit conditions and terms (such as BACT, air quality impact analysis, or PSD increment analysis) would be conducted, as would likely be the case for a first permit extension request. However, the EPA (or the delegated permitting authority) retains the discretion to provide for public notice and comment on a case-by-case basis if it determines that doing so would be appropriate.

As stated above, the EPA views the modification of a PSD permit, as that term is used in the Part 124 regulations, to include material changes to substantive terms and conditions that govern the construction and operation of the source. Therefore, when these types of changes to a permit are being analyzed, it would be appropriate to follow the public notice and comment procedures in 40 CFR Part 124.

Once an EPA regional office or delegated permitting authority has issued a permit extension pursuant to 40 CFR 52.21, we encourage the permitting authority to notify the public of the final permit extension decision, particularly when the public expressed significant interest in the underlying PSD permit proceeding that preceded the extension request. The means of notification could include but are not limited to: (1) posting the decision on the permitting authority’s website; (2) sending notification letters about the decision to the permit extension applicant and interested parties (e.g., parties who commented on the underlying PSD permit, or litigants if the underlying PSD permit remains under litigation); or (3) publishing a notice of the final decision on the permit extension request in the *Federal Register*.¹³

¹³ Footnote 9 above cites an example of a *Federal Register* notice for a permit extension. In the case of an extension issued by a delegated permitting authority, the corresponding EPA regional office would initiate a *Federal Register* notice.