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Shell Cancels 2011 Arctic Drilling Plans

By PHIL TAYLOR of
Published: February 3, 2011

Royal Dutch Shell PLC this morning announced it is postponing plans to drill for oil this summer in seas off Alaska, citing continued uncertainty over whether it would receive federal permits.

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Shell CEO Peter Voser in an earnings call with reporters said the company would need to spend as much as \$150 million without knowing whether it would receive needed permits from U.S. EPA and the Interior Department.

"Despite our investment in acreage and technology and our work with the stakeholders, we haven't been able to drill a single exploration well," Voser said. "Critical permits continue to be delayed, and the timeline for getting these permits is still uncertain."

The plan took a hit in late December when an EPA appeals board remanded Shell's Clean Air Act permits back to the company for revisions, faulting the agency's analysis of the impacts of nitrogen dioxide emissions from drill ships on the Alaska Native communities ([Greenwire](#), Jan. 5).

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Shell, which has invested more than \$3 billion in its Arctic development plan, also awaits drilling permits from Interior.

The company's decision postpones exploration by at least a year in a region federal scientists believe could hold the nation's second-largest oil and gas reserves after the Gulf of Mexico.

Shell last fall launched an aggressive advertising and lobbying campaign to promote scaled-back plans to drill one or two wells in Alaska's Beaufort Sea, promising to use an "unprecedented spill response approach" in the wake of the BP PLC oil spill in the Gulf ([Greenwire](#), Nov. 8, 2010).

The proposal seemed to gain momentum when the president's Oil Spill Commission issued a report last month indicating that more scientific study was needed on the Arctic drilling, but that such research did not justify a moratorium.

Alaska Sen. Mark Begich (D) in a letter last week to EPA said he was frustrated with the lack of progress and that the issues that prompted the remand have been unresolved since at least 2007.

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Begich told *E&E* this week that his meeting last Friday with EPA Region 10 Administrator Dennis McLerran on Shell's pending permit was "robust" but did not include a timeline for approval. "They didn't give me a timeline, but it was clear that they want to get these permits out right away," Begich said.

Dan Kish, senior vice president for policy at the Institute for Energy Research, said delaying exploration in the Arctic could imperil the viability of the Trans-Alaskan pipeline, which is currently running at a fraction of its capacity.

"It is very close to a period of time where, without the addition of more oil, it will become uneconomic," Kish said, adding that by law, the pipeline must be shut down if it is not economical, which would strand oil development on the North Slope.

Permitting for offshore drilling has become so riddled with uncertainty that many business are afraid to invest, Kish said.

"They'd gotten 97 percent of their permits," Kish said of Shell's proposal. "I don't know who the hell would want to do business in this country."

But Emilie Surrusco, a spokeswoman for the Alaska Wilderness League, said Shell's decision relieves artificial pressure on federal agencies to rush to approve risky drilling.

"It just goes to show that their plans have been ill-conceived from the beginning," she said. "They're not ready to clean up a spill in the Arctic."

The groups likened Shell's spill response to a "glorified mop, bucket and brush brigade" that has failed to demonstrate whether it could remove up 90 percent of oil from a spill, as Shell claims.

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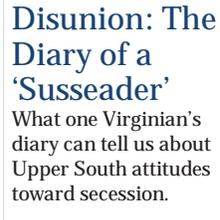
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Shell Exploration & Production, Inc.

3601 C Street, Suite 1000

Anchorage, Alaska 99503

Tel 907.770.3700

Fax 907.646.7135

Internet <http://www.shell.com>

September 1, 2009

Michelle Pirzadeh
Acting Regional Administrator
U.S. EPA, Region 10
Regional Administrator's Office, RA-140
1200 Sixth Avenue, Suite 900
Seattle, Washington 98101

Re: August 25, 2009 Meeting

Dear Michelle,

Thank you again for organizing such a productive meeting on August 25, 2009. Subsequent to that meeting, we received your letter of August 20th. While we may not agree with the factual recitation of the permit process as outlined in that correspondence, we sincerely appreciated the insights you and your staff shared in person on the 25th. As a result, we have chosen to look forward to reaching the near term milestones that will allow EPA Region 10 (R10) to provide a processing schedule for the Beaufort Sea Permit as a result of that meeting.

As noted in my opening remarks, we are very appreciative and encouraged that R10 commenced its public notice of Shell's Draft Chukchi Sea Prevention of Significant Deterioration (PSD) Permit on August 20, 2009. We believe that progress on the Chukchi Permit will simplify an overwhelming portion of the process needed to issue the Beaufort Sea PSD Permit to Shell in time to make a prudent funding decision regarding a 2010 drilling season, taking into account a marginally sufficient time frame for a potential EAB process.

As our agenda (attached) for the meeting related, Shell sees many reasonable opportunities for R10 to process and issue a Beaufort Sea permit for the Frontier Discoverer drill ship in a shorter timeframe than experienced in the Chukchi Sea. However, after witnessing the extended process of the Chukchi Permit and the absence of a written schedule, I would like to emphasize my request to be more involved in developing the processing schedule for the Beaufort Sea Permit. While I can appreciate your inquiries regarding assigning priority to one permit over the other due to R10's resourcing issues, I would like to reaffirm Shell's need to have both permits issued in final form by R10 by at least the end of 2009.

Drilling windows in the Arctic OCS can be influenced by natural, cultural and legal issues that create significant risk of either not gaining access to the drill location or having a shorter-than-planned time on location. However, this risk can be greatly reduced by having the option to drill in either sea. Risk minimization will be a large factor considered when Shell must commit many millions of dollars of pre-drilling mobilization costs later this year. These funds would be in addition to the hundreds of millions more of sunk costs that Shell invested in 2007 and 2008 drilling seasons that did not materialize, and in addition to the more than \$25 MM Shell has recently committed to in SCR and CDPF retrofits on the Discoverer drill vessel in advance of your permits issuance.

Shell's mission is to run a safe and environmentally sound exploratory drilling operation in both seas. We have worked hard to reduce our environmental footprint as reflected in our initial applications and other voluntary project refinements, and we are diligently working with R10 to fully understand, clarify and potentially modify the permit conditions contained in the Draft Chukchi Sea Permit. Some of these conditions, as currently drafted, conflict with other applicable regulations, impact normal and customary decision making of vessel captains operating the approved fleet, and potentially propose compliance scenarios that may not be feasible or practicable. As stated, Shell will provide a comprehensive summary of its mitigation commitments, and provide comments to R10 in these permit condition categories of interest during the Draft Chukchi Permit Public Notice period. In the interim, we appreciate your commitment to discussing any similar permit conditions within the context and during the early stages of crafting the Beaufort Permit so that permit can be initially drafted in a manner compatible with prudent operational requirements.

Your discussion regarding lessons-learned was most welcome, and I will work, along with you, to make these productivity improvements in our respective teams. Early coordination and feedback from R10 has been a continuing issue, therefore, I appreciate your commitment to holding clarification meetings at major administrative and/or processing junctures that will improve early communication. We will also endeavor to involve expert technical staff, when appropriate, in the weekly coordination teleconferences between our Program Managers.

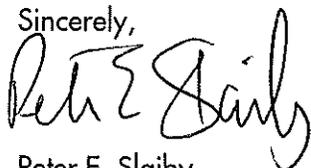
With regard to progress on the Beaufort Sea Permit processing, we appreciated your commitment to issue the much needed 2nd Completeness Determination Letter in the early part of this week, and then hold a meeting several days later, perhaps on September 3 or 4 to clarify the determination. While we are very concerned that R10's decision is coming approximately 100 days after permit submittal, we are encouraged that you are seeking additional modeling resources at R10, and you are receptive to partnering with the Alaska Department of Environmental Conservation (ADEC) to optimize consideration of the corresponding onshore area. Further discussions with ADEC Commissioner Larry Hartig to define ADEC's prospective role may be needed. In addition, we specifically look forward to your feedback regarding our Memorandum for Discussion transmitted to you on August 17, 2009, which discusses reasonable opportunities to make the processing of the Beaufort Sea Permit more efficient.

Please know that, barring any unforeseen developments, we will strive to respond to your 2nd Beaufort Sea Completeness Determination letter within approximately two weeks of receipt, and we will be prepared to meet with your staff at that point to clarify our responses and revised application. I greatly appreciate your commitment to revisiting and providing a Beaufort Sea Permit processing schedule once the above milestones are met, possibly during the week of September 21, 2009.

The week of September 21 will also include R10's hearing and meetings on the North Slope regarding the Chukchi Sea Permit. Please know that members of Shell's Air Team will attend the September 23, 2009 Public hearing in Barrow to support R10 in answering questions or clarifying information.

Again Michelle, I appreciate the recent momentum in processing our applications, as evidenced at the just completed August 25th meeting, and I look forward to refining our cooperative relationship.

Sincerely,

A handwritten signature in black ink, appearing to read "Peter E. Slaiby". The signature is written in a cursive, flowing style.

Peter E. Slaiby
Vice President
Shell Alaska

Attachment

Cc: Susan Childs, Shell Alaska
Lance Tolson, Shell Alaska
Mark Schindler, Octane

Meeting Agenda: August 25, 2009 Shell and R10 Meeting Re: Beaufort Sea Major PSD Permit

I. Purpose of Meeting

- Ascertain status of Beaufort Permit Application and Processing Schedule
- Communicate need, logic, and expectations for shorter processing schedule
- Apply lessons-learned from current draft permit to Beaufort Processing
- Devise plan forward to achieve defensible and timely Beaufort Permit
- Communicate appreciation for R10's modifications to Chukchi Draft Permit prior to Public Notice, and Public Notice start
- Advise R10 that Shell will seek modifications to Chukchi Draft Permit in its comments to the Public Notice. Is there an interim process to facilitate this and avoid delay after end of public notice?

II. Beaufort Permit

- Shell statement of need, requested timing for final permit issuance. What can be done to achieve this?
- R10's acceptance of out-sourcing through ADEC
- Shell Response to R10's 1st Partial Incompleteness Determination
- Timing of R10's 2nd Incompleteness Determination?
- Shell White Paper Re: Shorter Processing Schedule
- Data issues needing resolution
- Need written processing schedule
- Nexus with Chukchi Permit Conditions, need to get them right for Beaufort prior to Public Notice. Identify contact persons to clarify conditions and define modifications for Beaufort

IV. Final Resolutions and Plans Forward



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10

1200 Sixth Avenue, Suite 900
Seattle, WA 98101-3140

REGIONAL ADMINISTRATOR

July 27, 2009

Peter E. Slaiby
Shell Alaska General Manager
Shell Exploration & Production, Inc.
3601 C Street, Suite 1000
Anchorage, Alaska 99503

Dear Mr. Slaiby:

This letter is in response to your July 6, 2009, letter to me regarding our June 15, 2009, meeting on the air permits for Shell's exploratory drilling in the Chukchi and Beaufort Seas. The following are EPA responses and elaborations on your points and issues.

- First point – Region 10 has mobilized additional resources to assist in reviewing and processing Shell's permit applications. I appreciate Shell's commitment to provide timely responses. However, I must reiterate that the delay in receiving updated emissions information in turn delayed our ability to work on drafting the permit and support documents. In addition, Shell has still been slow to provide other information, such as the Wainwright monitoring data and the requests for Letters of Authorization (LOA's) (see the sixth point below). The lateness of some of this information is making it extremely difficult for us to meet our target of putting a draft permit out for public notice by mid-August.
- Second point – We intend to send the completeness letter for the Chukchi application by July 31st provided Shell submits all of the information previously requested by that date. We also plan to send the incompleteness letter for Beaufort application by July 29th.
- Third point – EPA is in the final stages of drafting the permit and anticipates sending it to Shell for a two-day review after July 31st, unless we have additional issues to resolve as a result of our internal peer review this week. Should Shell request any changes prior to putting the proposed permit out for public comment, it may delay the permit proposal. You have asked us to include a description of Shell's commitments to avoid/minimize (non-air) impacts in our air permit or EPA-drafted permit materials. We will be describing the legal and technical aspects of Shell's operations in our documents, but it would not be appropriate for us to go beyond that type of characterization. However, if Shell would like to prepare and submit to EPA an overall summary description of their project, including such commitments, EPA would include it in the record for this permit.
- Fourth point – For clarification, EPA did not say that we had discussed with the North Slope Borough (NSB) the possibility of issuing the draft permit public notices within the subsistence activity season. We did say that we believed that applying the protocol principles, including early and frequent communication on upcoming projects and agency

actions, could support a stronger and more consistent relationship with communities and could help reduce conflict and concerns if we had to go to public notice during subsistence seasons. Since we have only now begun to implement the protocol, we want to avoid going to public comment on our first major action during the upcoming fall subsistence activity season.

- Fifth point – We too found the June 25th “Processing Productivity” meeting helpful and look forward to seeing your list of key issues. If appropriate, we should schedule a second meeting to discuss those issues in light of the Beaufort permit application once the application is complete.
- Sixth point – While we now have copies of the two exploratory plans (EP’s), as of today, we still don’t have a copy of the Chukchi request for a Letter of Authorization (it is not included in the version of the EP that we received).
- First Issue – EPA’s need for the EP’s/LOA’s has more to do with our overall permitting effort than just the Endangered Species Act (ESA) process. EPA needs to verify that the equipment and operational scenarios described to other federal authorizing agencies are consistent with the equipment and operational scenarios upon which EPA is basing its permit decision. EPA also needs to ensure that the potential impacts of our permitting action are addressed under ESA.
- Second Issue – EPA is evaluating possible approaches and will include permit terms and conditions to address the multi-year authorization/ESA and the 168 day drilling season issues. We will also let you know if additional discussions on the ESA issues are needed.

We hope that the above helps to clarify EPA’s position on these points and issues. Please give me a call at 206-553-1234, or Jan Hastings at 206-553-1582 if you would like to discuss any of them further.

Sincerely,



Michelle L. Pirzadeh
Acting Regional Administrator

cc: Susan Childs, Shell
Lance Tolson, Shell
Mark Schindler, Octane



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
RESEARCH TRIANGLE PARK, NC 27711

APR - 1 2010

OFFICE OF
AIR QUALITY PLANNING
AND STANDARDS

MEMORANDUM

SUBJECT: Applicability of the Federal Prevention of Significant Deterioration Permit Requirements to New and Revised National Ambient Air Quality Standards

FROM: Stephen D. Page, Director *Stephen Page*
Office of Air Quality Planning & Standards (E404-04)

TO: Air Division Directors and Deputies
Regions I - X

This memorandum responds to inquiries that we are receiving from parties who are currently developing or reviewing applications for Prevention of Significant Deterioration (PSD) permits under the Clean Air Act (CAA) requesting that the Office of Air and Radiation (OAR) provide guidance on the applicability of PSD permitting requirements to a newly promulgated or revised National Ambient Air Quality Standard (NAAQS or standards). Accordingly, I am writing to reiterate the Environmental Protection Agency's (EPA's) existing interpretation of the relevant provisions of the CAA and EPA regulations, and EPA's position on how these requirements apply under the federal PSD program.

General Applicability of PSD Permit Requirements to New or Revised NAAQS

The CAA requires that proposed new and modified major stationary sources must, as part of the issuance of a permit to construct, demonstrate that emissions from the new or modified major source –

- 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...;
- (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;

CAA §165(a)(3). Similarly, EPA's federal PSD program regulations at 40 CFR 52.21(k)(1) require proposed sources and modifications to demonstrate that their allowable emissions will not cause or contribute to a violation of "any national ambient air quality standard in any air quality control region."

EPA generally interprets the CAA and EPA's PSD permitting program regulations to require that each final PSD permit decision reflect consideration of any NAAQS that is in effect at the time the permitting authority issues a final permit. As a general matter, permitting and licensing decisions of regulatory agencies must reflect the law in effect at the time the agency makes a final determination on a pending application. See *Ziffrin v. United States*, 318 U.S. 73, 78 (1943); *State of Alabama v. EPA*, 557 F.2d 1101, 1110 (5th Cir. 1977); *In re: Dominion Energy Brayton Point, LLC*, 12 E.A.D. 490, 614-616 (EAB 2006); *In re Phelps Dodge Corp.*, 10 E.A.D. 460, 478 n. 10 (EAB 2002).

Consistent with such interpretations, EPA has previously concluded that the relevant provisions cover any NAAQS that is in effect at the time of issuance of any permit. For example, in the context of applying the PSD provisions to the NAAQS for particulate matter less than 2.5 micrometers (PM_{2.5}), EPA has stated that "section 165 of the CAA suggests that PSD requirements become effective for a new NAAQS upon the effective date of the NAAQS." 73 FR 28321, 28340, (May 16, 2008); 70 FR 65984, 66043, (Nov. 1, 2005). That observation was based, in part, on EPA guidance for implementing the PM_{2.5} NAAQS that the Agency issued shortly after those standards first became effective in 1997. John Seitz, EPA Office of Air Quality Planning and Standards, "Interim Implementation for the New Source Review Requirements for PM_{2.5}" (Oct. 23, 1997). Both the 1997 guidance and EPA's final rule addressing the application of the PSD program to PM_{2.5} explained that section 165(a)(1) of the CAA provides that no new or modified major source may be constructed without a permit that meets all the requirements in section 165(a). In addition, those documents observe that one such requirement is the provision in section 165(a)(3) which says that emissions from such source may not cause or contribute to a violation of any NAAQS. The October 23, 1997 guidance provided an interim policy for assuring compliance with the requirements for PM_{2.5}, after observing that the "new NAAQS for PM_{2.5}, became effective on September 16, 1997." In addition, the guidance expressed EPA's intent to provide a separate memorandum that would address "EPA's views on implementing the ozone and PM₁₀ NAAQS during the interim period following *the effective date* of the new 8-hour ozone and revised PM₁₀ NAAQS." [Emphasis added.] Those statements made shortly after the promulgation of new NAAQS in 1997 are consistent with the view expressed in the final rule for PM_{2.5} in 2008 that "PSD requirements become effective for a new NAAQS upon the effective date of the NAAQS."

Additional precedent for this interpretation can be found in the 1987 final rule titled "Regulations for Implementing Revised Particulate Matter Standards" (52 FR 24672, July 1, 1987) issued at the time EPA established new PM₁₀ standards. In that rule, EPA stated that "once the PM₁₀ NAAQS becomes effective, EPA will be responsible for the protection of the PM₁₀ NAAQS as well as the review of PM₁₀ as a regulated pollutant." 52 FR at 24682. In support of that conclusion, EPA observed that the federal

PSD regulations at 40 CFR 52.21(k)(1) contain “a general provision requiring prospective PSD sources to demonstrate that their potential emissions will not cause or contribute to air pollution in violation of ‘any’ NAAQS.” *Id.* at 24682 n. 9. Based on that analysis, EPA concluded that “[w]hen the revised NAAQS for particulate matter becomes effective, each PSD application subject to EPA’s Part 52 PSD regulations, and not eligible to be grandfathered under today’s action, must contain a PM₁₀ NAAQS analysis.” 52 FR at 24684.

As illustrated above, under certain circumstances EPA has previously allowed proposed new major sources and major modifications that have submitted a complete PSD permit application before the effective date of new requirements under the PSD regulations, but have not yet received a final and effective PSD permit, to continue relying on information already in the application rather than immediately having to amend applications to demonstrate compliance with the new PSD requirements. In the transition from the total suspended particulate NAAQS to the PM₁₀ NAAQS, EPA explicitly established rule provisions that allowed proposed new major sources and major modifications that had submitted a complete PSD permit application before the effective date of new PM₁₀ NAAQS, but that had not yet received a final and effective federally-issued PSD permit, to continue relying on information already in the submitted application rather than immediately having to amend applications to demonstrate compliance with the new PSD requirements. *See, e.g.*, 40 CFR 52.21(i)(1)(x). EPA has adopted similar provisions pertaining to new or revised PSD increments. 40 CFR 52.21(i)(9)-(10). Those proposed sources and modifications meeting these transition requirements were “grandfathered” or exempted from the new PSD requirements that would otherwise have applied to them. Thus, while we have included the necessary provisions to grandfather sources from new requirements under certain circumstances, we have not always chosen to do so for NAAQS revisions in general.

Applicability of the New 1-Hour NO₂ NAAQS to Existing Permit Applications

On January 22, 2010, the EPA Administrator signed a final rule containing a new NAAQS for nitrogen dioxide (NO₂) based on a 1-hour averaging time. That final rule was published in the Federal Register on February 9, and will become effective on April 12, 2010. EPA did not promulgate a grandfathering provision related to the 1-hour NO₂ NAAQS for permits in process but not yet issued as of April 12, 2010. Accordingly, permits issued under 40 CFR 52.21 on or after April 12, 2010, must contain a demonstration that the source’s allowable emissions will not cause or contribute to a violation of the new 1-hour NO₂ NAAQS. In the case of the new NO₂ 1-hour NAAQS, while the short-term standard is new, the pollutant is not, having been considered a regulated pollutant for many years pursuant to the NO₂ annual NAAQS. There are no exceptions under 40 CFR 52.21 in this case because as noted above, EPA has not adopted a grandfathering provision applicable to the 1-hour NO₂ NAAQS that would enable the required permit to be issued to prospective sources in the absence of such ambient air quality demonstration.

cc: Jeff Clark
Anna Wood
Peter Tsirigotis
Lydia Wegman
Richard Wayland



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

FEB 26 2004

REPLY TO THE ATTENTION OF
(A-18J)

Janet G. McCabe, Assistant Commissioner
Office of Air Quality
Indiana Department of Environmental Management
100 North Senate Avenue
P.O. Box 6015
Indianapolis, Indiana 46206-6015

Dear Ms. McCabe:

This is in response to your January 12, 2004, letter regarding the implementation of New Source Review (NSR) in areas that will be designated as nonattainment for the new 8-hour ozone standard. We appreciate the work that your office has done to formulate and raise to us the questions below. We also understand that the States are under a narrow time frame to get answers before the designations for the new ozone standards go into effect. The following are your questions and our response.

1. *When will the new designations be considered effective? Upon issuance of final letters to the Governors (expected on April 15, 2004)?*

The designation notice will be signed no later than April 15, 2004 and will provide the effective date. At this time, we expect the designations to be effective in mid to late May.

2. *When will nonattainment new source review be required in newly designated counties? Please explain the legal basis setting forth the requirements.*

The nonattainment NSR requirements apply to newly designated nonattainment areas upon the effective date of the designation. After this effective date, permits issued in these areas must satisfy the part D nonattainment NSR requirements, as required by 40 CFR 52.24(k) and 40 CFR part 51, appendix S. According to appendix S, "a major new source or major modification which would locate in an area designated in 40 CFR 81.300 et seq., as nonattainment for a pollutant for which the source or modification would be major may be allowed to construct only if the stringent conditions set forth below are met." These requirements

include applying the lowest achievable emission rate (LAER) and obtaining sufficient offsetting emission reductions to assure that the new major source will not interfere with the area's progress toward attainment. A more detailed discussion of 40 CFR 52.24(k) and appendix S is set forth in the proposed rule to implement the 8-hour ozone standard (68 FR 32843-32848, June 2, 2003). Implementation of part D nonattainment NSR requirements on the date of designation is consistent with our past guidance on this matter. See "New Source Review Transitional Guidance" at A-6 (March 11, 1991).

3. *If an application is filed before the effective date of designations but the permit is issued after that date, which permitting rules apply, attainment or nonattainment? Again, cites to appropriate sections of the Clean Air Act (the Act) or regulations would be helpful.*

As we explained in our response to question 2, permits issued in nonattainment areas must meet the part D nonattainment NSR requirements as set forth in 40 CFR 52.24(k) and appendix S. An exemption is not provided for sources that applied for a permit during the period when an area was in attainment. Furthermore, under the federal PSD regulations, the applicability of PSD requirements is limited to "an area designated as attainment or unclassifiable." 40 CFR 51.166(a)(7)(i); 52.21(a)(2)(i). Therefore, a PSD permit for a pollutant cannot be issued in an area that is designated nonattainment for that pollutant. See "New Source Review Transitional Guidance" at A-6 (March 11, 1991). As a result, a source that submits a permit application before the nonattainment designation effective date, but does not obtain a final issued permit by the effective date must apply for a part D nonattainment NSR permit if emissions exceed the major source or major modification threshold.

4. *Does the United States Environmental Protection Agency (EPA) Region V have any record of Indiana addressing or committing to apply the requirements in 40 CFR part 51, appendix S, as an element of its State Implementation Plan (SIP)? We are researching our records, but thought it would be helpful if your staff could investigate this as well, since it would have happened several decades ago, if at all.*

Our staff have searched our records and were unable to find any indications of a previous commitment from Indiana to apply 40 CFR part 51, appendix S.

5. *Could you please confirm the thresholds that will apply for new sources and modifications in nonattainment areas? Will it be 100 tons per year for new sources and 40 tons per year for modifications designated under Subpart 1 or marginal or moderate under Subpart 2?*

Pursuant to the definition of "major stationary source" in §302(j) of the Act and 40 CFR 51.165(a)(1)(iv)(A)(1) and the definition of "significant" in 40 CFR 51.165(a)(1)(x), Subpart 1 nonattainment areas and marginal or moderate Subpart 2 nonattainment areas will have a 100 tons per year major source threshold and a 40 tons per year significance threshold for triggering major NSR for ozone precursor pollutants.

6. *For the designated ozone nonattainment areas, will it be necessary for major new sources (or major modifications) of nitrogen oxides (NOx) to obtain emission offsets for NOx, given that the States are now operating under a NOx budget pursuant to the NOx SIP Call? If yes, will the waiver procedure still be available to States upon a demonstration that NOx reductions in a particular area will be counterproductive?*

In areas that are designated nonattainment for ozone, major new sources or major modifications must continue to obtain offsets pursuant to §173 of the Act. EPA has expressed the view that nonattainment NSR offset requirements of the CAA can be met using the mechanism of the NOx Budget Trading Program, but has pointed out that integrating these programs involves many complex issues. 63 Fed. Reg. 57355, 57475-76 (Oct. 27, 1998). EPA is continuing to work toward resolving these issues.

According to the June 2, 2003, proposed rule to implement the 8-hour ozone standard (68 FR 32840), the NOx waiver procedure of §182(f) of the Act would still be available to States upon a demonstration that net air quality benefits are greater in the absence of reductions of NOx from the sources concerned. The preamble to the proposed rule further provides that: "for areas that were previously granted a NOx waiver under the 1-hour ozone standard, a re-approval would be needed to make it clear that the exemption applies, to allow for public comment, to be consistent with the waiver guidance under the 8-hour standard (once issued) and to account for any new information that may point to a different conclusion." It is important to note that, if this provision is finalized as proposed, States will be required to seek re-approval for the NOx waiver in 8-hour

ozone nonattainment areas.

7. *What will be the baseline date for offsets for NSR permitting in new nonattainment areas?*

To clarify, we understand this question to be a request for the baseline date after which emission reduction credits remain available for the purpose of obtaining offsets for NSR permitting. The baseline date for NSR offsets in 8-hour ozone nonattainment areas will be based on the date of the emission inventory data or emission projections. In most areas, this will be 2002. However, in future years if there are updated emissions inventories or projections used for an attainment demonstration, the new inventory or projection date will replace the existing baseline date. The regulations governing offsets can be found at 51.165(a)(3).

8. *If a source has gotten a permit under the Prevention of Significant Deterioration (PSD) program and does not construct within 18 months, what permitting rules will apply if the county has now been designated nonattainment?*

According to 40 CFR 52.21(r)(2), an approval to construct (e.g.; a PSD permit) becomes invalid if a source does not commence construction within 18 months of permit issuance (the regulation allows for an extension to the 18-month period to construct upon a satisfactory showing that an extension is justified, however for the purpose of your question we will presume that the permitting authority does not grant an extension to an approval to construct). If this scenario occurs in a county that has since been designated nonattainment, consistent with our response to question 2, a source must obtain a new permit pursuant to the part D nonattainment NSR requirements that now apply in that area. The SIP-approved Indiana PSD regulation includes language comparable to 40 CFR 52.21(r)(2) in 326 IAC 2-2-8(1).

9. *In the alternative site analysis required in nonattainment NSR, how does EPA interpret the phrase "significantly outweigh the environmental and social costs imposed as a result of a source's location, construction or modification"? How is this measured? Is it still a case by case evaluation?*

The alternative site analysis is required in §173(a)(5) of the Act. This requirement continues to be a case-by-case evaluation for NSR projects located in nonattainment areas. Since this analysis is performed on a case-by-case basis, we

are unable to provide a general answer on the interpretation and measurement of the phrase "significantly outweigh the environmental and social costs imposed as a result of a source's location, construction or modification."

10. Does EPA intend to revise or update appendix S and what is the agency's timeframe?

EPA is in the process of considering whether to update appendix S or adopt a separate rule to address preconstruction permitting during the SIP development period. See 68 FR 46536 (August 6, 2003) and www.epa.gov/ttn/naags/ozone/o3imp8hr/documents/proprule/req_text_073103.pdf. At this time, we are unable to provide a time frame for this action.

We appreciate Indiana's efforts to transition to the new 8-hour ozone standard. We will continue to work with your staff to address NSR implementation issues. If you have any questions, please contact Sam Portanova, of my staff, at (312) 886-3189.

Sincerely yours

A handwritten signature in black ink, appearing to read "Stephen Rothblatt", written over a horizontal line.

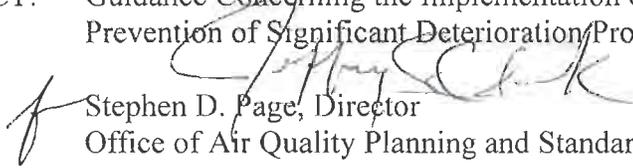
Stephen Rothblatt, Director
Air and Radiation Division

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Office of Air Quality Planning and Standards
Research Triangle Park, North Carolina 27711

AUG 23 2010

MEMORANDUM

SUBJECT: Guidance Concerning the Implementation of the 1-hour SO₂ NAAQS for the Prevention of Significant Deterioration Program

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

TO: Regional Air Division Directors

On June 2, 2010, the U.S. Environmental Protection Agency (EPA) announced a new 1-hour sulfur dioxide (SO₂) National Ambient Air Quality Standard (hereinafter, either the 1-hour SO₂ NAAQS or 1-hour SO₂ standard) of 75 ppb, which is attained when the 3-year average of the annual 99th-percentile of 1-hour daily maximum concentrations does not exceed 75 ppb at each monitor within an area. EPA revised the primary SO₂ NAAQS to provide the requisite protection of public health. The final rule for the new 1-hour SO₂ NAAQS was published in the Federal Register on June 22, 2010 (75 FR 35520), and the standard becomes effective on August 23, 2010. In the same notice, we also announced that we are revoking both the existing 24-hour and annual primary SO₂ standards. However, as explained in this guidance, those SO₂ standards, as well as the 24-hour and annual increments for SO₂, remain in effect for a while further and must continue to be protected.

EPA interprets the Prevention of Significant Deterioration (PSD) provisions of the Clean Air Act and EPA regulations to require that any federal permit issued under 40 CFR 52.21 on or after that effective date must contain a demonstration of source compliance with the new 1-hour SO₂ NAAQS. We anticipate that some new major stationary sources or major modifications, especially those involving relatively short stacks, may experience difficulty demonstrating that emissions from proposed projects will not cause or contribute to a modeled violation of the new 1-hour SO₂ NAAQS. We also anticipate problems that sources may have interpreting the modeled 1-hour SO₂ impacts if the form of the hourly standard is not properly addressed. To respond to these and other related issues, we are providing the attached guidance, in the form of two memoranda, for implementing the new 1-hour SO₂ NAAQS under the PSD permit program.

The first memorandum, titled "General Guidance for Implementing the 1-hour SO₂ National Ambient Air Quality Standard in Prevention of Significant Deterioration Permits, Including an Interim 1-hour SO₂ Significant Impact Level," includes guidance for the preparation and review of PSD permits with respect to the new 1-hour SO₂ standard. That

guidance memorandum sets forth a recommended interim 1-hour SO₂ significant impact level (SIL) that states may consider for carrying out the required PSD air quality analysis for SO₂, until EPA promulgates a 1-hour SO₂ SIL via rulemaking, and addresses the continued use of the existing SO₂ Significant Emissions Rate (SER) and Significant Monitoring Concentration (SMC) to implement the new 1-hour SO₂ standard.. The second memorandum, titled “Applicability of Appendix W Modeling Guidance for the 1-hour SO₂ National Ambient Air Quality Standard,” includes specific modeling guidance for estimating ambient SO₂ concentrations and determining compliance with the new 1-hour SO₂ standard.

This guidance does not bind state and local governments and permit applicants as a matter of law. Nevertheless, we believe that state and local air agencies and industry will find this guidance useful for carrying out the PSD permit process and it will provide a consistent approach for estimating SO₂ air quality impacts from proposed construction or modification of SO₂ emissions sources. For the most part, the attached guidance focuses on how existing policy and guidance is relevant to and should be used for implementing the new 1-hour SO₂ NAAQS.

Please review the guidance included in the two attached memoranda. In the event of questions regarding the general implementation guidance contained in the first memorandum, please contact Raj Rao (rao.raj@epa.gov). For questions pertaining to the modeling guidance in the second memorandum, please contact Tyler Fox (fox.tyler@epa.gov). We are continuing our efforts to address permitting issues related to the implementation of new and revised NAAQS, and will issue additional guidance to address the NAAQS as appropriate.

Attachments:

1. Memorandum from Anna Marie Wood, Air Quality Policy Division, to EPA Regional Air Division Directors, “General Guidance for Implementing the 1-hour SO₂ National Ambient Air Quality Standard in Prevention of Significant Deterioration Permits, Including an Interim 1-hour SO₂ Significant Impact Level” (August 23, 2010).
2. Memorandum from Tyler Fox, Air Quality Modeling Group, to EPA Regional Air Division Directors, “Applicability of Appendix W Modeling Guidance for the 1-hour SO₂ National Ambient Air Quality Standard” (August 23, 2010).

cc: Anna Marie Wood
Richard Wayland
Lydia Wegman
Raj Rao
Tyler Fox
Dan deRoeck
Roger Brode
Rich Ossias
Elliott Zenick
Brian Doster

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Office of Air Quality Planning and Standards
Research Triangle Park, North Carolina 27711

August 23, 2010

MEMORANDUM

SUBJECT: General Guidance for Implementing the 1-hour SO₂ National Ambient Air Quality Standard in Prevention of Significant Deterioration Permits, Including an Interim 1-hour SO₂ Significant Impact Level

FROM: Anna Marie Wood, Acting Director /s/
Air Quality Policy Division

TO: Regional Air Division Directors

INTRODUCTION

We are issuing the following guidance to explain and clarify the procedures that may be followed by applicants for Prevention of Significant Deterioration (PSD) permits, and permitting authorities reviewing such applications, to properly demonstrate that proposed projects to construct and operate will not cause or contribute to a modeled violation of the new 1-hour sulfur dioxide (SO₂) National Ambient Air Quality Standard (hereinafter, either the 1-hour SO₂ NAAQS or 1-hour SO₂ standard) that becomes effective on August 23, 2010. The EPA revised the primary SO₂ NAAQS by promulgating a 1-hour SO₂ NAAQS to provide the requisite protection of public health. Under section 165(a)(3) of the Clean Air Act (the Act) and sections 52.21(k) and 51.166(k) of EPA's PSD regulations, to obtain a permit, a source must demonstrate that its proposed emissions increase will not cause or contribute to a violation of "any NAAQS."

This guidance is intended to (1) highlight the importance of a 1-hour averaging period for setting an emissions limitation for SO₂ in the PSD permit (2) reduce the modeling burden to implement the 1-hour SO₂ standard where it can be properly demonstrated that a source will not have a significant impact on ambient 1-hour SO₂ concentrations, and (3) identify approaches that allow sources and permitting authorities to mitigate, in a manner consistent with existing regulatory requirements, potential modeled violations of the 1-hour SO₂ NAAQS, where appropriate. Accordingly, the techniques described in this memorandum may be used by permit applicants and permitting authorities to perform an acceptable 1-hour SO₂ NAAQS compliance modeling assessment and/or properly configure projects and permit conditions in order that a proposed source's emissions do not cause or contribute to modeled 1-hour SO₂ NAAQS violations, so that permits can be issued in accordance with the applicable PSD program requirements.

This guidance discusses existing provisions in EPA regulations and guidance, and focuses on the relevancy of this information for implementing the new NAAQS for SO₂. Importantly, however, this guidance also sets forth a recommended interim 1-hour SO₂ significant impact level (SIL) that EPA will use when it evaluates applications and issues permits under the federal PSD program, and that states may choose to rely upon to implement their PSD programs for SO₂ if they agree that the value represents a reasonable threshold for determining a significant ambient impact, and they incorporate into each permit record a rationale supporting this conclusion. This interim SIL is a useful screening tool that can be used to determine whether or not the predicted ambient impacts caused by a proposed source's emissions increase will be significant and, if so whether the source's emissions should be considered to "cause or contribute to" modeled violations of the new 1-hour SO₂ NAAQS.

BACKGROUND

On August 23, 2010, the new 1-hour SO₂ NAAQS will become effective. Regulations at 40 CFR 52.21 (the federal PSD program) require permit applicants to demonstrate compliance with "any" NAAQS that is in effect on the date a PSD permit is issued. (See, e.g., EPA memo dated April 1, 2010, titled "Applicability of the Federal Prevention of Significant Deterioration Permit Requirements to New and Revised National Ambient Air Quality Standards.") Due to the promulgation of this short-term averaging period (1-hour) for the SO₂ NAAQS, we anticipate that some new major stationary sources or major modifications, especially those involving relatively short stacks may experience increased difficulty demonstrating that emissions from proposed project will not cause or contribute to a modeled violation.

We believe that, in some instances, preliminary predictions of violations could result from the use of maximum modeled concentrations that do not adequately take into account the form of the 1-hour standard. To the extent that is the case, ambient SO₂ concentrations in the form of the new 1-hour NAAQS should be estimated by applying the recommended procedures that account for the statistical form of the standard. See EPA Memorandum from Tyler Fox, Air Quality Modeling Group, to EPA Regional Air Division Directors, "Applicability of Appendix W Modeling Guidance for the 1-hour SO₂ National Ambient Air Quality Standard" (August 23, 2010) for specific modeling guidance for estimating ambient SO₂ concentrations consistent with the new 1-hour SO₂ NAAQS.

It is EPA's expectation that currently available SO₂ guidance, including the guidance presented in this memorandum, will assist in resolving some of the issues arising from preliminary analyses that show potential exceedances of the new 1-hour SO₂ NAAQS that would not be present under more refined modeling applications. In addition, the techniques described in this memorandum may also help avoid violations of the standard through design of the proposed source or permit conditions, consistent with existing regulatory requirements. Moreover, the interim 1-hour SO₂ SIL that is included in this guidance will provide a reasonable screening tool for effectively implementing the PSD requirements for an air quality impact analysis.

The following discussion provides guidance for establishing a 1-hour emissions limitation to demonstrate compliance with the new NAAQS, and for possibly mitigating

modeled violations using any of the following: air quality-based permit limits more stringent than what the Best Available Control Technology provisions may otherwise require, air quality offsets, “good engineering practice” (GEP) stack heights, and an interim 1-hour SO₂ SIL. The continued use of the existing SO₂ Significant Emissions Rate (SER) and Significant Monitoring Concentration (SMC) to implement the new 1-hour SO₂ standard is also discussed.

SCREENING VALUES

In the final rule establishing the 1-hour SO₂ standard, EPA discussed various implementation considerations for the PSD permitting program. 75 FR.35520 (June 22, 2010). That discussion included the following statements regarding particular screening values that have historically been used on a widespread basis to facilitate implementation of the PSD permitting program:

We agree with the commenters that there may be a need for EPA to provide additional screening tools or to revise existing screening tools that are frequently used under the NSR/PSD program for reducing the burden of completing SO₂ ambient air impact analyses. These screening tools include the SILs, as mentioned by the commenter, but also include the SER for emissions of SO₂ and the SMC for SO₂. The existing screening tools apply to the periods used to define the existing NAAQS for SO₂, including the annual, 24-hour, and 3-hour averaging periods. EPA intends to evaluate the need for possible changes or additions to each of these useful screening tools for SO₂ due to the revision of the SO₂ NAAQS to provide for a 1-hour standard. We believe it is highly likely that in order to be most effective for implementing the new 1-hour averaging period for NSR purposes, new 1-hour screening values will be appropriate.

75 FR 35579. EPA intends to conduct an evaluation of these issues and submit our findings in the form of revised significance levels under notice and comment rulemaking if any revisions are deemed appropriate. In the interim, for the reasons provided below, we recommend the continued use of the existing SER for SO₂ emissions as well as an interim 1-hour SO₂ SIL that we are setting forth today for conducting air quality impact analyses for the 1-hour SO₂ NAAQS. As described in the section titled Introduction, EPA intends to implement the interim 1-hour SO₂ SIL contained herein under the federal PSD program and offers states the opportunity to use it in their PSD programs if they choose to do so. EPA is not addressing the significant monitoring concentration (SMC) for SO₂ in this memorandum; the existing SMC for SO₂, at 40 CFR 52.21(i)(5)(i) should continue to be used.

SIGNIFICANT EMISSIONS RATE

The PSD regulations define SER for various regulated NSR pollutants. When a proposed new source’s potential to emit a pollutant, or a modified source’s net emissions increase of a pollutant, would be less than the SER, the source is not required to undergo the requisite PSD analyses (BACT and air quality) for that particular emissions increase. Under the terms of existing EPA regulations, the applicable SER for SO₂ is 40 tons per year (tpy). 40 CFR 52.21(b)(23); 40 CFR 51.166(b)(23). Each of the significant emissions rates defined in those regulations is specific to an individual pollutant with no differentiation by averaging time with

regard to NAAQS. The NAAQS for SO₂ have included standards with 3-hour and 24-hour and annual averaging times for many years. The EPA has applied the 40 tpy SER for SO₂ across all of these averaging times, and we are aware of no reason why it should not be used for the 1-hour averaging period for the present time. Therefore, until the evaluation described above and any associated rulemaking are completed, we will use 40 tpy as the SER for the 1-hour standard.

Under existing regulations, an ambient air quality impact analysis is required for “each pollutant that [a source] would have the potential to emit in significant amounts.” [40 CFR 52.21(m)(1)(i)(a); 40 CFR. 51.166(m)(1)(i)(a)]. For modifications, these regulations require this analysis for “each pollutant for which [the modification] would result in a significant net emissions increase.” 40 CFR.52.21(m)(1)(i)(b); 40 CFR.51.166(m)(1)(i)(b). EPA construes this regulation to mean that an ambient impact analysis is not necessary for pollutants with emissions rates below the significant emissions rates in paragraph (b)(23) of the regulations. No additional action by EPA or permitting authorities is necessary at this time to apply the 40 tpy significant emissions rate in existing regulations to the hourly SO₂ standard.

INTERIM 1-HOUR SO₂ SIGNIFICANT IMPACT LEVEL

Under the PSD program, a proposed new major stationary source or major modification must, among other things, complete an air quality impact analysis that involves performing an analysis of air quality modeling and ambient monitoring data, where appropriate, to demonstrate compliance with applicable NAAQS. In order to implement this requirement, EPA traditionally has provided a screening tool known as the Significant Impact Level (SIL) to help applicants and permitting authorities determine whether a source’s modeled ambient impact is significant so as to warrant a comprehensive, cumulative air quality analysis to demonstrate compliance with the NAAQS. Accordingly, where a proposed source’s modeled impact is deemed insignificant, or *de minimis*, using the SIL as a threshold for significance, the applicant is not required to model anything besides its own proposed emissions increase to show that the proposed source or modification will not cause or contribute to a violation of the NAAQS.¹

If, on the other hand, the source’s modeled impact is found to be significant, based on the SIL, the applicant will need to complete a comprehensive, cumulative air quality impact analysis to demonstrate that the source’s emissions will not cause or contribute to a modeled violation of any NAAQS. To make this demonstration, EPA has recommended that a cumulative analysis cover a circular area measuring out from the source to the maximum distance where the source’s impact is equal to the SIL. Within this modeling area, the source should also model the impacts of other sources (existing and newly permitted), including applicable SO₂ sources located outside the circular area described above, to account for the cumulative hourly SO₂ air quality impacts

¹ When a proposed source’s impact by itself is not considered to be “significant,” EPA has long maintained that any further effort on the part of the applicant to complete a cumulative source impact analysis involving other source impacts would only yield information of trivial or no value with respect to the required evaluation of the proposed source or modification. The concept of a SIL is grounded on the *de minimis* principles described by the court in *Alabama Power Co. v. Costle*, 636 F.2d 323, 360 (D.C. Cir. 1980); See also *Sur Contra La Contaminacion v. EPA*, 202 F.3d 443, 448-49 (1st Cir. 2000) (upholding EPA’s use of SIL to allow permit applicant to avoid full impact analysis); *In re: Prairie State Gen. Co.*, PSD Appeal No. 05-05, Slip. Op. at 139 (EAB 2006).

that are predicted to occur. The applicant may also have to gather ambient monitoring data as part of the total air quality analysis that is required for demonstrating compliance with the NAAQS.² Accordingly, the source will evaluate its contribution to any modeled violation of the 1-hour SO₂ NAAQS to determine whether the source's emissions contribution will cause or contribute to the modeled violation at any receptor. Note that in the accompanying modeling guidance memorandum we are providing recommended procedures and guidance for completing the modeling analysis to demonstrate compliance with the new 1-hour SO₂ NAAQS.

We plan to undertake rulemaking to adopt a 1-hour SO₂ SIL value. However, until such time as a 1-hour SO₂ SIL is defined in the PSD regulations, we are providing an interim SIL of 3 ppb, which we intend to use as a screening tool for completing the required air quality analyses for the new 1-hour SO₂ NAAQS under the federal PSD program at 40 CFR 52.21. We are also making the interim SIL available to States with EPA-approved implementation plans containing a PSD program to use at their discretion. To support the application of this interim 1-hour SO₂ SIL in each instance, a permitting authority that utilizes it as part of an ambient air quality analysis should include in the permit record the analysis reflected in this memorandum and the referenced documents to demonstrate that a modeled air quality impact is *de minimis*, and thereby would not be considered to cause or contribute to a modeled violation of the NAAQS.³

States may also elect to choose another value that they believe represents a significant air quality impact relative to the 1-hour SO₂ NAAQS. The EPA-recommended interim 1-hour SO₂ SIL is not intended to supersede any interim SIL that any state chooses to rely upon to implement a state PSD program that is part of an approved SIP, or to impose the use of the SIL concept on any state that chooses to implement the PSD program—in particular the ambient air quality analysis—without using a SIL as a screening tool. Accordingly, states that implement the PSD program under an EPA-approved SIP may choose to use this interim SIL, another value that may be deemed more appropriate for PSD permitting purposes in the state of concern, or no SIL at all. The application of any SIL that is not reflected in a promulgated regulation should be supported by a record in each instance that shows the value represents a *de minimis* impact on the 1-hour SO₂ standard, as described above.

As indicated above, using the interim 1-hour SO₂ SIL, the permit applicant and permitting authority can determine: (1) whether, based on the proposed increase in SO₂ emissions, a cumulative air quality analysis is required; (2) the area of impact within which a cumulative air quality analysis should focus; and (3) whether, as part of a cumulative air quality analysis, the proposed source's SO₂ emissions will cause or contribute to any modeled violation of the 1-hour SO₂ NAAQS.

² A screening tool known as the Significant Monitoring Concentration (SMC) for SO₂ already exists in the PSD regulations. EPA plans to evaluate the existing SMC in light of the new 1-hour SO₂ NAAQS; however, the existing value of 13 µg/m³, 24-hour average, should continue to be used until and unless a revised value is issued through rulemaking.

³ Where the cumulative air quality analysis identifies a modeled violation of the NAAQS or increments, and the proposed source is issued its permit by virtue of the fact that its proposed emissions increase is not considered to cause or contribute to the modeled violation, it is still the permitting authority's responsibility to address such modeled violations independently from the PSD permitting process to determine the nature of the problem and to mitigate it accordingly,

As mentioned above, we are providing an interim 1-hour SO₂ SIL value of 3 ppb to implement the federal PSD program. To determine initially whether a proposed project's emissions increase will have a significant impact (resulting in the need for a cumulative air quality analysis), this interim SIL should be compared to either of the following:

- The highest of the 5-year averages of the maximum modeled 1-hour SO₂ concentrations predicted each year at each receptor, based on 5 years of National Weather Service data; or
- The highest modeled 1-hour SO₂ concentration predicted across all receptors based on 1 year of site-specific meteorological data, or the highest of the multi-year averages of the maximum modeled 1-hour SO₂ concentrations predicted each year at each receptor, based on 2 or more, up to 5 complete years of available site-specific meteorological data.

Additional guidance will be forthcoming for the purpose of comparing a proposed source's modeled impacts to the interim 1-hour SO₂ SIL in order to make a determination about whether that source's contribution is significant when a cumulative air quality analysis identifies violations of the 1-hour SO₂ NAAQS (i.e., "causes or contributes to" a modeled violation).

We derived this interim 1-hour SO₂ SIL by using an impact equal to 4% of the 1-hour SO₂ NAAQS (which is 75 ppb). On June 29, 2010, we issued an interim 1-hour NO₂ SIL that used an impact equal to 4% of the 1-hour NO₂ standard. As explained in the June memorandum, we have chosen this approach because we believe it is reasonable to base the interim 1-hour SIL directly on consideration of impacts relative to the corresponding 1-hour NAAQS. In 1980, we defined SER for each pollutant subject to PSD. 45 FR 52676 (August 7, 1980) at 52705-52710. For PM and SO₂, we defined the SER as the emissions rate that resulted in an ambient impact equal to 4% of the applicable short-term NAAQS. The 1980 analysis focused on levels no higher than 5% of the primary standard because of concerns that higher levels were found to result in unreasonably large amounts of increment being consumed by a single source. Within the range of impacts analyzed, we considered two factors that had an important influence on the choice of the significant impact levels: (1) cumulative effect on increment consumption of multiple sources in an area, each making the maximum *de minimis* emissions increase; and (2) the projected consequence of a given significant impact level on administrative burden. As explained in the preamble to the 1980 rulemaking and the supporting documentation,⁴ EPA decided to use 4% of the 24-hour primary NAAQS for PM and SO₂ to define the significant emissions rates (SERs) for those pollutants. See 45 FR 52708. Looking now at a 1-hour NAAQS for SO₂, we believe that it is reasonable as an interim approach to use a SIL value that represents 4% of the 1-hour SO₂ NAAQS. EPA will consider other possible alternatives for developing a 1-hour SO₂ SIL in a future rulemaking that will provide an opportunity for public participation in the development of a SIL as part of the PSD regulations.

AIR-QUALITY BASED EMISSIONS LIMITATIONS

⁴ EPA evaluated *de minimis* levels for pollutants for which NAAQS had been established in a document titled "Impact of Proposed and Alternative De Minimis Levels for Criteria Pollutants"; EPA-450/2-80-072, June 1980.

Once a level of control is determined by the PSD applicant via the Best Available Control Technology (BACT) top-down process, the applicant must model the proposed source's emissions at the BACT emissions rate(s) to demonstrate that those emissions will not cause or contribute to a violation of any NAAQS or PSD increment. However, the EPA 1990 Workshop Manual (page B.54) describes circumstances where a proposed source's emissions based on levels determined via the top-down process may not be sufficiently controlled to prevent modeled violations of an increment or NAAQS. In such cases, it may be appropriate for PSD applicants to propose a more stringent control option (that is, beyond the level identified via the top-down process) as a result of an adverse impact on the NAAQS or PSD increments. In addition, the use of certain dispersion techniques is permissible for certain proposed projects for SO₂ that may need to be considered where emissions limitations alone may not enable the source to demonstrate compliance with the new 1-hour SO₂ NAAQS. This is discussed in greater detail below in the section addressing GEP stack height requirements.

Because compliance with the new SO₂ NAAQS must be demonstrated on the basis of a 1-hour averaging period, the reviewing authority should ensure that the source's PSD permit defines a maximum allowable hourly emissions limitation for SO₂, regardless of whether it is derived from the BACT top-down approach or it is the result of an air-quality based emissions rate. Hourly limits are important because they are the foundation of the air quality modeling demonstration relative to the 1-hour SO₂ NAAQS. For estimating the impacts of existing sources, if necessary, existing SO₂ emission inventories used to support modeling for compliance with the 3-hour and 24-hour SO₂ standards should serve as a useful starting point, and may be adequate in many cases for use in assessing compliance with the new 1-hour SO₂ standard. The PSD applicant's coordination with the reviewing authority is important in this matter to obtain the most appropriate estimates of maximum allowable hourly SO₂ emissions.

DEMONSTRATING COMPLIANCE WITH THE NAAQS AND INCREMENTS & MITIGATING MODELED VIOLATIONS WITH AIR QUALITY OFFSETS

A 1988 EPA memorandum provides procedures to follow when a modeled violation is identified during the PSD permitting process. [See Memorandum from Gerald A. Emison, EPA OAQPS, to Thomas J. Maslany, EPA Air Management Division, "Air Quality Analysis for Prevention of Significant Deterioration (PSD)." (July 5, 1988.)] In cases where the air quality analysis predicts violations of the 1-hour SO₂ NAAQS, but the permit applicant can show that the SO₂ emissions increase from the proposed source will not have a significant impact *at the point and time of any modeled violation*, the permitting authority has discretion to conclude that the source's emissions will not contribute to the modeled violation. As provided in the July 5, 1988 guidance memo, because the proposed source only has a *de minimis* contribution to the modeled violation, the source's impact will not be considered to cause or contribute to such modeled violations, and the permit could be issued. This concept continues to apply, and the significant impact level (described further below) may be used as part of this analysis. A 2006 decision by the EPA Environmental Appeals Board (EAB) provides detailed reasoning that demonstrates the permissibility of a finding that a PSD source would not be considered to cause or contribute to a modeled NAAQS violation because its estimated air quality impact was

insignificant at the time and place of the modeled violations.⁵ [See *In re Prairie State Gen. Co.*, 13 E.A.D. ___, ___, PSD Appeal No. 05-05, Slip. Op. at 137-144 (EAB 2006)]

However, where it is determined that a source's impact does cause or contribute to a modeled violation, a permit cannot be issued without some action to mitigate the source's impact. In accordance with 40 CFR 51.165(b)⁶, a major stationary source or major modification (as defined at §51.165(a)(1)(iv) and (v)) that locates in a SO₂ attainment area for the 1-hour SO₂ NAAQS and would cause or contribute to a violation of the 1-hour SO₂ NAAQS may "reduce the impact of its emissions upon air quality by obtaining sufficient emission reductions to, at a minimum, compensate for its adverse ambient [SO₂] impact where the major source or major modification would otherwise cause or contribute to a violation" An applicant can meet this requirement for obtaining additional emissions reductions either by reducing its emissions at the source (e.g., promoting more efficient production methodologies and energy efficiency) or by obtaining air quality offsets (see below). [See, e.g., *In re Interpower of New York, Inc.*, 5 E.A.D. 130, 141 (EAB 1994)].⁷ A State may also provide the necessary emissions reductions by imposing emissions limitations on other sources through an approved SIP revision. These approaches may also be combined as necessary to demonstrate that a source will not cause or contribute to a violation of the NAAQS.

Unlike emissions offset requirements in areas designated as nonattainment, in addressing the air quality offset concept, it may not be necessary for a permit applicant to fully offset the proposed emissions increase if an emissions reduction of lesser quantity will mitigate the adverse air quality impact where the modeled violation was originally identified. ("Although full emission offsets are not required, such a source must obtain emission offsets sufficient to compensate for its air quality impact where the violation occurs." 44 FR 3274, January 16, 1979, at 3278.) To clarify this, the 1988 guidance memo referred to above states that:

offsets sufficient to compensate for the source's significant impact must be obtained pursuant to an approved State offset program consistent with State Implementation Plan (SIP) requirements under 40 CFR 51.165(b). Where the source is contributing to an existing violation, the required offset may not correct the violation. Such existing violations must be addressed [through the SIP].

Note that additional guidance for this and other aspects of the modeling analysis for the impacts of SO₂ emissions on ambient concentrations of SO₂ are addressed in EPA modeling guidance, including the attached August 23, 2010 Memorandum titled "Applicability of Appendix W Modeling Guidance for the 1-hour SO₂ National Ambient Air Quality Standard."

⁵ While there is no 1-hour SO₂ significant impact level (SIL) currently defined in the PSD regulations, we believe that states may adopt interim values, with the appropriate justification for such values, to use for permitting purposes. In addition, we are recommending an interim SIL as part of this guidance for implementing the SO₂ requirements in the federal PSD program, and in state programs where states choose to use it.

⁶ The same provision is contained in EPA's Interpretative Ruling at 40 CFR part 51 Appendix S, section III.

⁷ In contrast to Nonattainment New Source Review permits, offsets are not mandatory requirements in PSD permits if it can otherwise be demonstrated that a source will not cause or contribute to a violation of the NAAQS. See, *In re Knauf Fiber Glass, GMBH*, 8 E.A.D. 121, 168 (EAB 1999).

Although EPA announced that it is revoking the annual and 24-hour SO₂ NAAQS, the June 22, 2010 preamble to the final rule announcing the new 1-hour SO₂ NAAQS explained that those standards will remain in effect for a limited period of time as follows: for current SO₂ nonattainment areas and SIP call areas, until attainment and maintenance SIPs are approved by EPA for the new 1-hour SO₂ NAAQS; for all other areas, for one year following the effective date of the initial designations under section 107(d)(1) for the new 1-hour SO₂ NAAQS. Accordingly, the annual and 24-hour SO₂ NAAQS must continue to be protected under the PSD program for as long as they remain in effect for a PSD area. There is a more detailed discussion of the transition from the existing SO₂ NAAQS to a revised SO₂ NAAQS in that preamble. Also, the same preamble includes a footnote listing the current nonattainment areas and SIP call areas. 75 FR 35520, at 35580-2.

In addition, the existing SO₂ increments (class I, II and III) for the annual and 24-hour averaging periods will not be revoked in conjunction with our decision to revoke the corresponding SO₂ NAAQS. Instead, the annual and 24-hour SO₂ increments (Class I, II and III increments) will remain in effect because they are defined in the Clean Air Act at title I, part C, section 163. The annual and 24-hour SO₂ increments in section 163 are considered part of the suite of statutory increments applicable to sulfur dioxide that Congress expressly included in the statutory provisions for PSD. As such, those increments cannot be revoked simply because we have decided to revoke the annual and 24-hour SO₂ NAAQS, upon which the SO₂ increments are based. Consequently, sources must continue to demonstrate that their proposed emissions increases of SO₂ emissions will not cause or contribute to any modeled violation of the existing annual and 24-hour SO₂ increments for as long as those statutory increments remain in effect. Increments for the 1-hour averaging period do not yet exist; the Act provides a specific schedule for the promulgation of additional regulations, which may include new increments, following the promulgation of new or revised NAAQS. EPA plans to begin that rulemaking process in the near future to consider the need for such increments.

“GOOD ENGINEERING PRACTICE” STACK HEIGHT AND DISPERSION TECHNIQUES

If a permit applicant is unable to show that the source’s proposed emissions increase will not cause or contribute to a modeled violation of the new 1-hour SO₂ NAAQS, the problem could be the result of plume downwash effects causing high ambient concentrations near the source. In such cases, a source may be able to raise the height of its existing stacks (or designed stacks if not yet constructed) to a “good engineering practice” (GEP) stack height, or at least 65 meters, measured from the ground-level elevation at the base of the stack.

While not necessarily eliminating the full effect of downwash in all cases, raising stacks to GEP height may provide substantial air quality benefits in a manner consistent with statutory provisions (section 123 of the Act) governing acceptable stack heights to minimize excessive concentrations due to atmospheric downwash, eddies or wakes. Permit applicants should also be aware of the regulatory restrictions on stack heights for the purpose of modeling for compliance with NAAQS and increments. Section 52.21(h) of the PSD regulations currently prohibits the use of dispersion techniques, such as stack heights above GEP, merged gas streams, or intermittent controls for setting SO₂ emissions limits to meet the NAAQS and PSD increments.

However, stack heights in existence before December 31, 1970, and dispersion techniques implemented before then, are not affected by these limitations. EPA's general stack height regulations are promulgated at 40 CFR 51.100(ff), (gg), (hh), (ii), (jj), (kk) and (nn), and 40 CFR 51.118.

a. *Stack heights*: A source can include only the actual stack height up to GEP height when modeling to develop the SO₂ emissions limitations or to determine source compliance with the SO₂ NAAQS and increments. This is not a limit on the actual height of any stack constructed by a new source or modification, however, and there may be circumstances where a source owner elects to build a stack higher than GEP height. However, such additional height may not be considered when determining an emissions limitation or demonstrating compliance with an applicable NAAQS or PSD increment. Thus, when modeling, the following limitations apply in accordance with §52.21(h):

- For a stack height less than GEP, the actual stack height must be used in the source impact analysis for emissions;
- For a stack height equal to or greater than 65 meters the impact may be modeled using the greater of:
 - A *de minimis* stack height equal to 65 meters, as measured from the ground-level elevation at the base of the stack, without demonstration or calculation (40 CFR 51.100(ii)(1));
 - The refined formula height calculated using the dimensions of nearby structures in accordance with the following equation:

GEP = H + 1.5L, where H is the height of the nearby structure and L is the lesser dimension of the height or projected width of the nearby structure (40 CFR 51.100(ii)(2)(ii)).⁸

- A GEP stack height exceeding the refined formula height may be approved when it can be demonstrated to be necessary to avoid “excessive concentrations” of SO₂ caused by atmospheric downwash, wakes, or eddy effects by the source, nearby structures, or nearby terrain features. (40 CFR 51.100(ii)(3), (jj), (kk));
- For purposes of PSD, “excessive concentrations” means a maximum ground-level concentration from a stack due in whole or in part to downwash, wakes, and eddy effects produced by nearby structures or nearby terrain features which individually is at least 40 percent in excess of the maximum concentration experienced in the absence of such effects and (a) which contributes to a total concentration due to emissions from all sources that is greater than the applicable NAAQS or (b) greater than the applicable PSD increments. (40 CFR 51.100(kk)(1)).

⁸ For stacks in existence on January 12, 1979, the GEP equation is $GEP = 2.5 H$ (provided the owner or operator produces evidence that this equation was actually relied on in establishing an emission limitation for SO₂ (40 CFR 51.100(ii)(2)(i)

Reportedly, for economic and other reasons, many existing source stacks have been constructed at heights less than 65 meters, and source impact analyses may show that the source's emissions will cause or contribute to a modeled violation of the 1-hour SO₂ NAAQS. Where this is the case, sources should be aware that it is permissible for them to increase their stack heights up to 65 meters without a GEP demonstration.

b. *Other dispersion techniques*: The term “dispersion technique” includes any practice carried out to increase final plume rise, subject to certain exceptions (40 CFR 51.100(hh)(1), (2)(i) – (v)). Beyond the noted exceptions, such techniques are not allowed for getting credit for modeling source compliance with the NAAQS and PSD increments. One such exception is for sources of SO₂. Section 51.100(hh)(2)(v) provides that identified techniques that increase final exhaust gas plume rise are not considered prohibited dispersion techniques pursuant to section 51.100(hh)(1)(iii) “where the resulting allowable emissions of sulfur dioxide from the facility do not exceed 5,000 tons per year.” Thus, proposed modifications that experience difficulty modeling compliance with the new 1-hour SO₂ NAAQS when relying on BACT or an air quality-based emissions limit alone may permissibly consider techniques to increase their final exhaust gas plume rise consistent with these provisions.

The definition of “dispersion technique” at 40 CFR 51.100(hh)(1)(iii) describes techniques that are generally prohibited, but which do not apply with respect to the exemption for SO₂. Accordingly, it is permissible for eligible SO₂ sources to make adjustments to source process parameters, exhaust gas parameters, stack parameters, or to combine exhaust gases from several existing stacks into one stack, so as to increase the exhaust gas plume rise. It is important to remember that the exemption applies to sources that have facility-wide allowable SO₂ emissions of less than 5,000 tpy resulting from the increase in final exhaust gas plume rise. Thus, proposed modifications should not base their eligibility to use dispersion on the amount of the proposed net emissions increase, but on the total source emissions of SO₂.

The EPA does not recommend or encourage sources to rely on dispersion to demonstrate compliance with the NAAQS; however, we acknowledge the fact that certain SO₂ sources may legally do so. For example, while increasing stack height is a method of dispersion, EPA's rules allow use of that approach to the extent the resulting height meets EPA's requirements defining “good engineering practice (GEP)” stack height. See 40 CFR 50.100(hh)(1)(i), 50.100(ii)(1)-(3). Nevertheless, EPA encourages PSD applicants to seek other remedies, including the use of the most stringent controls (beyond top-down BACT) feasible or the acquisition of emissions reductions (offsets) from other existing sources, to address situations where proposed emissions increases would result in modeled violations of the SO₂ NAAQS.

GENERAL START-UP CONDITIONS

We do not anticipate widespread problems associated with high short-term SO₂ emissions resulting from start-up/shutdown conditions. Many sources are capable of starting a unit with natural gas or low-sulfur fuel to avoid significant start-up emissions problems. However, some sources could experience short-term peaks of SO₂ during start-up or shutdown that could adversely affect the new 1-hour SO₂ NAAQS. The EPA currently has no provisions for exempting emissions occurring during equipment start-up/shutdown from the BACT

requirements or for air quality analyses to demonstrate compliance with the SO₂ NAAQS and increments. Therefore, such emissions should be addressed in the required BACT and air quality analyses.

There are approaches to addressing issues related to start-up/shutdown emissions. For example, sources may be willing to accept enforceable permit conditions limiting equipment start-up/shutdown to certain hours of the day when impacts are expected to be lower than normal. Such permit limitations can be accounted for in the modeling of such emissions. Applicants should direct other questions arising concerning procedures for modeling start-up/shutdown emissions to the applicable permitting authority to determine the most current modeling guidance.

In the event of questions regarding the general implementation guidance contained in this memorandum, please contact Raj Rao (rao.raj@epa.gov).

cc: Raj Rao, C504-01
Dan deRoeck, C504-03
Tyler Fox, C439-01
Roger Brode, C439-01
Richard Wayland, C304-02
Lydia Wegman, C504-02
Elliott Zenick, OGC
Brian Doster, OGC
EPA Regional NSR Contacts

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Office of Air Quality Planning and Standards
Research Triangle Park, North Carolina 27711

August 23, 2010

MEMORANDUM

SUBJECT: Applicability of Appendix W Modeling Guidance for the 1-hour SO₂ National Ambient Air Quality Standard

FROM: Tyler Fox, Leader /s/
Air Quality Modeling Group, C439-01

TO: Regional Air Division Directors

INTRODUCTION

On June 2, 2010, EPA announced a new 1-hour sulfur dioxide (SO₂) National Ambient Air Quality Standard (1-hour SO₂ NAAQS or 1-hour SO₂ standard) which is attained when the 3-year average of the 99th-percentile of the annual distribution of daily maximum 1-hour concentrations does not exceed 75 ppb at each monitor within an area. The final rule for the new 1-hour SO₂ NAAQS was published in the Federal Register on June 22, 2010 (75 FR 35520-35603), and the standard becomes effective on August 23, 2010 (EPA, 2010a). This memorandum clarifies the applicability of current guidance in the *Guideline on Air Quality Models* (40 CFR Part 51, Appendix W) for modeling SO₂ impacts in accordance with the Prevention of Significant Deterioration (PSD) permit requirements to demonstrate compliance with the new 1-hour SO₂ standard.

SUMMARY OF CURRENT GUIDANCE

Current modeling guidance for estimating ambient impacts of SO₂ for comparison with applicable NAAQS is presented in Section 4 of Appendix W under the general heading of “Traditional Stationary Source Models.” This guidance acknowledges the fact that ambient SO₂ impacts are largely a result of emissions from stationary sources. Section 4.2.2 provides specific recommendations regarding “Refined Analytical Techniques,” stating that “For a wide range of regulatory applications in all types of terrain, the recommended model is AERMOD” (see Section 4.2.2.b). As described in Section 4.1.d, the AERMOD dispersion model “employs best state-of-practice parameterizations for characterizing the meteorological influences and dispersion” (Cimorelli, *et al.*, 2004; EPA, 2004; EPA, 2009).

Section 7.2.6 of Appendix W addresses the issue of chemical transformation for modeling SO₂ emissions, stating that:

The chemical transformation of SO₂ emitted from point sources or single industrial plants in rural areas is generally assumed to be relatively unimportant to the estimation of maximum concentrations when travel time is limited to a few hours. However, in urban areas, where synergistic effects among pollutants are of considerable consequence, chemical transformation rates may be of concern. In urban area applications, a half-life of 4 hours may be applied to the analysis of SO₂ emissions. Calculations of transformation coefficients from site specific studies can be used to define a “half-life” to be used in a steady-state Gaussian plume model with any travel time, or in any application, if appropriate documentation is provided. Such conversion factors for pollutant half-life should not be used with screening analyses.

The AERMOD model incorporates the 4 hour half-life for modeling ambient SO₂ concentrations in urban areas under the regulatory default option.

General guidance regarding source emission input data requirements for modeling ambient SO₂ impacts is provided in Section 8.1 of Appendix W and guidance regarding determination of background concentrations for purposes of a cumulative ambient air quality impact analysis is provided in Section 8.2.

APPLICABILITY OF CURRENT GUIDANCE TO 1-HOUR SO₂ NAAQS

The current guidance in Appendix W regarding SO₂ modeling in the context of the previous 24-hour and annual primary SO₂ NAAQS and the 3-hour secondary SO₂ NAAQS is generally applicable to the new 1-hour SO₂ standard. Since short-term SO₂ standards (≤ 24 hours) have been in existence for decades, existing SO₂ emission inventories used to support modeling for compliance with the 3-hour and 24-hour SO₂ standards should serve as a useful starting point, and may be adequate in many cases for use in assessing compliance with the new 1-hour SO₂ standard, since issues identified in Table 8-2 of Appendix W related to short-term vs. long-term emission estimates may have already been addressed. However, the PSD applicant and reviewing authority may need to reassess emission estimates for very short-term emission scenarios, such as start-up and shut-down operations, for purposes of estimating source impacts on the 1-hour SO₂ standard. This is especially true if existing emission estimates for 3-hour or 24-hour periods are based on averages that include zero (0) or reduced emissions for some of the hours.

Given the form of the new 1-hour SO₂ standard, we are providing clarification regarding the appropriate data periods for modeling demonstrations of compliance with the NAAQS vs. demonstrations of attainment of the NAAQS through ambient monitoring. While monitored design values for the 1-hour SO₂ standard are based on a 3-year average (in accordance with Section 1(c) of Appendix T to 40 CFR Part 50), Section 8.3.1.2 of Appendix W addresses the length of the meteorological data record for dispersion modeling, stating that “[T]he use of 5 years of NWS [National Weather Service] meteorological data or at least 1 year of site specific data is required.” Section 8.3.1.2.b further states that “one year or more (including partial years), up to five years, of site specific data . . . are preferred for use in air quality analyses.” Although the monitored design value for the 1-hour SO₂ standard is defined in terms of the 3-year average, this definition does not preempt or alter the Appendix W requirement for use of 5 years of NWS

meteorological data or at least 1 year of site specific data. The 5-year average based on use of NWS data, or an average across one or more years of available site specific data, serves as an unbiased estimate of the 3-year average for purposes of modeling demonstrations of compliance with the NAAQS. Modeling of “rolling 3-year averages,” using years 1 through 3, years 2 through 4, and years 3 through 5, is not required. Furthermore, since modeled results for SO₂ are averaged across the number of years modeled for comparison to the new 1-hour SO₂ standard, the meteorological data period should include complete years of data to avoid introducing a seasonal bias to the averaged impacts. In order to comply with Appendix W recommendations in cases where partial years of site specific meteorological data are available, while avoiding any seasonal bias in the averaged impacts, an approach that utilizes the most conservative modeling result based on the first complete-year period of the available data record vs. results based on the last complete-year period of available data may be appropriate, subject to approval by the appropriate reviewing authority. Such an approach would ensure that all available site specific data are accounted for in the modeling analysis without imposing an undue burden on the applicant and avoiding arbitrary choices in the selection of a single complete-year data period.

The form of the new 1-hour SO₂ standard also has implications regarding appropriate methods for combining modeled ambient concentrations with monitored background concentrations for comparison to the NAAQS in a cumulative modeling analysis. As noted in the March 23, 2010 memorandum regarding “Modeling Procedures for Demonstrating Compliance with PM_{2.5} NAAQS” (EPA, 2010b), combining the 98th percentile monitored value with the 98th percentile modeled concentrations for a cumulative impact assessment could result in a value that is below the 98th percentile of the combined cumulative distribution and would, therefore, not be protective of the NAAQS. However, unlike the recommendations presented for PM_{2.5}, the modeled contribution to the cumulative ambient impact assessment for the 1-hour SO₂ standard should follow the form of the standard based on the 99th percentile of the annual distribution of daily maximum 1-hour concentrations averaged across the number of years modeled. A “first tier” assumption that may be applied without further justification is to add the overall highest hourly background SO₂ concentration from a representative monitor to the modeled design value, based on the form of the standard, for comparison to the NAAQS. Additional refinements to this “first tier” approach based on some level of temporal pairing of modeled and monitored values may be considered on a case-by-case basis, subject to approval by the reviewing authority, with adequate justification and documentation.

Section 8.2.3 of Appendix W provides recommendations regarding the determination of background concentrations for multi-source areas. That section emphasizes the importance of professional judgment by the reviewing authority in the identification of nearby and other sources to be included in the modeled emission inventory, and establishes “a significant concentration gradient in the vicinity of the source” under consideration as the main criterion for this selection. Appendix W also indicates that “the number of such [nearby] sources is expected to be small except in unusual situations.” See Section 8.2.3.b.

The representativeness of available ambient air quality data also plays an important role in determining which nearby sources should be included in the modeled emission inventory. Key issues to consider in this regard are the extent to which ambient air impacts of emissions from nearby sources are reflected in the available ambient measurements, and the degree to

which emissions from those background sources during the monitoring period are representative of allowable emission levels under the existing permits. The professional judgments that are required in developing an appropriate inventory of background sources should strive toward the proper balance between adequately characterizing the potential for cumulative impacts of emission sources within the study area to cause or contribute to violations of the NAAQS, while minimizing the potential to overestimate impacts by double counting modeled source impacts that are also reflected in the ambient monitoring data.

We would also caution against the literal and uncritical application of very prescriptive procedures for identifying which background sources should be included in the modeled emission inventory for NAAQS compliance demonstrations, including those described in Chapter C, Section IV.C.1 of the draft *New Source Review Workshop Manual* (EPA, 1990), noting again that Appendix W emphasizes the importance of professional judgment in this process: While the draft workshop manual serves as a useful general reference that provides potential approaches for meeting the requirements of New Source Review (NSR) and PSD programs, it is not the only source of EPA modeling guidance. The procedures described in the manual may be appropriate in some circumstances for defining the spatial extent of sources whose emissions may need to be considered, but not in others. While the procedures described in the NSR Workshop Manual may appear very prescriptive, it should be recognized that “[i]t is not intended to be an official statement of policy and standards and does not establish binding regulatory requirements.” See, Preface.

Given the range of issues involved in the determination of an appropriate inventory of emissions to include in a cumulative impact assessment, the PSD applicant should consult with the appropriate reviewing authority early in the process regarding the selection and proper application of appropriate monitored background concentrations and the selection and appropriate characterization of modeled background source emission inventories for use in demonstrating compliance with the new 1-hour SO₂ standard.

SUMMARY

To summarize, we emphasize the following points:

1. Current guidance in Appendix W for modeling to demonstrate compliance with the previous 24-hour and annual primary SO₂ standards, and 3-hour secondary SO₂ standard, is generally applicable for the new 1-hour SO₂ NAAQS.
2. While the 1-hour NAAQS for SO₂ is defined in terms of the 3-year average for monitored design values to determine attainment of the NAAQS, this definition does not preempt or alter the Appendix W requirement for use of 5 years of NWS meteorological data or at least 1 year of site specific data.

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cc: Richard Wayland, C304-02
Anna Marie Wood, C504-01
Lydia Wegman, C504-02
Raj Rao, C504-01
Roger Brode, C439-01
James Thurman, C439-01
Dan deRoeck, C504-03
Elliott Zenick, OGC
Brian Doster, OGC
EPA Regional Modeling Contacts