From: Bray, Dave
To: McAlpine, Jerrold; Bridgers, George
Cc: McFadden, Kelly
Subject: RE: DRAFT Guidance for Ozone and Fine Particulate Matter Permit Modeling
Date: Monday, April 20, 2020 6:34:23 PM
Attachments: image001.png

Thanks Jay. Good comments. I don't have any additional comments but just want to emphasize the importance of getting the guidance for the source impact analysis correct because the current PSD applicability test is quite different than the pre-2002 test which the guidance was originally based on. The changes to the applicability test for modifications that were made in 2002, along with the recent change to clarify the project emissions accounting process, require us to adjust the guidance so that it continues to produce a conservative estimate of the impact of the project as it did in the past.

Remember that the pre-2002 (1980 rules) applicability test for modifications was based on an actual emissions to potential emissions calculation. The post change emission rate used in the net emissions increase calculation for a modified emission unit was the (enforceable) potential to emit of the unit. Furthermore, any reduction in emissions from an existing emission unit that was being credited in a netting transaction had to be enforceable. As a result, the unit-specific emission rates that contributed to the net significant emissions increase (the trigger for a modification subject to PSD) were all the new enforceable emission rates for the units involved in the project.

The applicability test for modifications to existing emission units in the post-2002 rules relies on the change from baseline actual emissions to projected actual emissions, and projected actual emissions can be adjusted for emissions that the unit was capable of accommodating. The effect of the new applicability test is that the increase in emissions that will actually occur as a result of the project can be much greater than the calculated net emissions increase that is used for PSD applicability. Importantly, for a project that is actually subject to PSD, the resultant permit emission limits for modified units will bear no resemblance to the projected actual emissions for the units that were used in the applicability calculations.

Here's a very simple hypothetical example.

Take a plant composed of a production line and a power boiler that provides steam and electricity for the process. For simplicity, the production line emits no regulated air pollutants.

The source has a project to increase the capacity (physical modification) of both the production line and power boiler in order to meet the production goals for a new product. The current production line can make the new product, just not enough to meet demand so it needs to be modified to increase its capacity. The power boiler is oversized and can provide enough steam and electricity for the full capacity of the existing production line and even part of the increased capacity but still not enough to meet the full capacity of the modified production line.

The current production line has been running at about 50% capacity for the current product and will be modified to double its current capacity.

The power boiler has been running at about 30% capacity to provide steam and electricity for the current production levels but at 100% capacity it could only meet 75% of the needs of the modified

production line. It will be modified to increase its capacity by 25%.

So here are the numbers:

Current actual emissions from the power boiler is 200 tpy (30% load)
Current potential to emit from the power boiler is 670 tpy (100% load)
Post modification potential to emit from the power boiler is 840 tpy (100% load)
Projected actual emissions from the power boiler is 804 tpy (full output of modified production line)

Net emissions increase equals the projected actual emissions from the modified power boiler (**804 tpy**) minus baseline actual emissions (**200 tpy**) minus the portion of the projected actual emissions increase that the boiler was capable of accommodating (670 - 200 tpy = **470 tpy**) = **134 tpy**. Since 134 tpy exceeds the significant emission rate, the project is subject to PSD review. However, the PSD permit limit for the modified power boiler will be 840 tpy and the actual emissions increase that the environment will see is 604 tpy, both far exceeding the 134 tpy net emissions increase that triggered PSD review. In order for the SIA to produce a conservative estimate of the impact of the project, it needs to be modeling an emission increase of 640 tpy for the power boiler, not the calculated net emissions increase of 134 tpy.

Hope this helps.

Dave

From: McAlpine, Jerrold <McAlpine.Jay@epa.gov>
Sent: Thursday, April 16, 2020 2:41 PM
To: Bridgers, George <Bridgers.George@epa.gov>
Cc: Bray, Dave <Bray.Dave@epa.gov>; McFadden, Kelly <McFadden.Kelly@epa.gov>
Subject: RE: DRAFT Guidance for Ozone and Fine Particulate Matter Permit Modeling

George,

I have completed my review of the draft guidance and would like to provide some comments informally, below.

It is a bit last minute so I did not reach out to R10 management for review of my comments, but have cc'd Dave and Kelly, who may have corrections or additions.

Overall, these comments reflect previous recent conversations and questions I have had with OAQPS regarding the emissions increase used for a SILs analysis and also my recent question regarding winter season PM2.5 backgrounds.

1. In sections II.4 and V.3 of the document, the Guidance indicates the source impact analysis (SIA) should be conducted using the significant emissions increase as proposed in the permit application. I understand this indicates the emissions used for the analysis should be the same *significant emissions increase*, as defined in 40 CFR 52.21(b)(40). If this is the case, the Guidance

infers the emissions used for the SIA should be based on the same emissions increase used for PSD applicability, as calculated under 52.21(a)(2) using a net emissions increase based on projected actual emissions. If this is the case, the guidance appears to possibly conflict with 52.21(k) and 40 CFR 51 Appendix W, which indicate a modeling analysis must assess impacts based on the allowable emissions increase of a project source (i.e., not projected actuals). Previously, the EPA provided notice in the preamble to the 2002 NSR reform rule that the emissions increases used to determine PSD applicability were not intended for use in a NAAQS demonstration, because such demonstrations required consideration of an allowable emissions increase.

2. In the case the concerns presented in comment 1 above are valid, are the project emissions used in Table III.2 (and elsewhere) to indicate modeling requirements based on the significant emissions increases (again, same increases used for PSD applicability), or the allowable emissions increase calculated for modeling purposes after the project has been determined to be significant?

3. Appendix D provides a very clear and useful example of the process recommended in the guidance to determine quarterly 24-hour background PM2.5 concentrations. It would be ideal if another example calculation was provided to demonstrate recommended method/s to similarly calculate a seasonal background. The process to calculate a seasonal background (considering AERMOD seasons, where winter is defined as December, January, February) is not as intuitive, because winter months are not contiguous in a calendar year. It would be most ideal to consider contiguous winter months in the calculation, to account for common annual-scale climatic modes such as ENSO.

Thank you,
Jay

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Subject: DRAFT Guidance for Ozone and Fine Particulate Matter Permit Modeling

Regional Office Dispersion Modeling Contacts,

The Environmental Protection Agency (EPA) is providing the attached *DRAFT Guidance for Ozone and Fine Particulate Matter Permit Modeling* (https://www3.epa.gov/ttn/scram/guidance/guide/Draft_Guidance_for_O3_PM25_Permit_Modeling.pdf) to the state, local, and tribal air agencies, as well as the public, for consideration, review and comment. This guidance document reflects the EPA's recommendations for how a stationary source seeking a Prevention of Significant Deterioration (PSD) permit may demonstrate that it will not cause or contribute to a violation of the National Ambient Air Quality Standards for ozone (O_3) and fine particulate matter ($PM_{2.5}$) and PSD increments for $PM_{2.5}$, as required under Section 165(a)(3) of the Clean Air Act and 40 CFR sections 51.166(k) and 52.21(k).

The EPA is requesting that comments on the draft guidance be provided **by Friday, March 27, 2020**. This allows at least 45 days for consideration, review, and comment on the material presented in the draft guidance. Comments should be electronically submitted directly to me at bridgers.george@epa.gov. The EPA will also conduct a webinar (https://meet.lync.com/usepa/bridgers.george/RCFFWM07) providing an overview of the *DRAFT Guidance for Ozone and Fine Particulate Matter Permit Modeling* allowing for an open exchange on the guidance documentation on Thursday, March 12th at 3pm EDT.

Following the close of the comment period, the EPA will take into consideration all the feedback and comments submitted and will further engage with the regulatory air quality modeling community at the 2020 Regional, State, and Local Modelers' Workshop scheduled for May 5-7, 2020, at the Minneapolis Central Library in Minneapolis, MN. This workshop will allow for an open dialogue on further clarifications, potential amendments, and considerations for additions to the final guidance documentation to be released later this year.

Please share this announcement information with your respective state, local, and tribal agencies and with any interested colleagues in a timely manner. If there are any questions regarding the draft guidance, the webinar, or the 2020 Regional, State, and Local Modelers' Workshop, please contact me at your earliest convenience.

My/our regards,
George

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