



MCVEHIL-MONNETT ASSOCIATES, INC.

Air Quality Newsletter

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UNCERTAINTIES IN PSD PERMITTING REQUIREMENTS

In this edition of our Newsletter we detail some of the problems some clients are encountering with Prevention of Significant Deterioration (PSD) permitting actions here in the west. As most of you are aware, PSD pre-construction permits are required for major new sources and major modifications at existing sources.

Most aspects of the PSD program are mature, dating back to the very early 1980's. They include requirements for the installation of Best Available Control Technology (BACT) to limit emissions and analyses of impacts on applicable ambient air quality standards and increments. The other major requirement is the demonstration of impacts on Air Quality Related Values (AQRVs) at Class I and sensitive Class II PSD areas.

It is this last requirement where the clarity of what is required by rule becomes rather hazy. Under the PSD rule, protection of AQRVs including visibility, regional haze and acid deposition is the responsibility of the Federal Land Manager (FLM) of the particular area of concern (e.g., national park, monument, wilderness area, etc.). While the affirmative responsibility of the FLMs to protect AQRVs in sensitive areas is not in doubt, the acceptable levels of change to such parameters as regional haze and acid deposition are not defined by rule, and as such are subject to non-uniform and ever-changing interpretation by the FLMs.

The volatility in what is acceptable and how those levels must be demonstrated (through modeling) have resulted in increasingly restrictive and ever-changing requirements. This volatility is making it virtually impossible to anticipate or determine permit feasibility. What was acceptable yesterday may not be acceptable tomorrow and there is little way to anticipate requirements next week or beyond.

In our opinion, this evolution in FLM policy appears to be out of control. Critical decisions seem to be made internally without the benefit of participation by affected parties or the public in general. Left unchecked, the direction being pursued by the FLMs has the grave potential of obstructing even the cleanest technologies if they are proposed within a 300 kilometer plus radius of sensitive areas. Given the great number of Class I and sensitive Class II areas in the west, the prospects of new power production and energy development do not look promising. Comments?

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STRICTER AQRV IMPACT ANALYSES COMPLICATE PSD REVIEW

Changes in visibility regulations and guidance for preparation of visibility impact analyses are making it more difficult to obtain PSD permits. The Regional Haze regulations in 40 CFR 51 were finalized on July 1, 1999. These rules revised the existing visibility regulations and established a comprehensive visibility protection program for Federal Class I areas. The Federal Land Managers (FLMs) have responsibility under the Clean Air Act to protect the air quality-related values (AQRVs) of Class I areas. Though the FLMs do not have final authority in issuing PSD permits, their requirements and concerns must be addressed by state permitting agencies before granting any PSD permit.

The FLMs have developed policies and procedures for evaluating the effects of air pollution on Class I areas that are now an integral part of the PSD permit evaluation process. Occasionally, these evaluations extend to designated sensitive Class II areas. In addition, two newer air quality models, AERMOD and CALPUFF, have been recommended and/or approved for modeling near-and long-range source impacts.

The FLM administering the closest Class I area to the project is typically the lead FLM, although all FLMs whose Class I areas may be impacted have input to the decision process. The lead FLM has a key role in advising the PSD applicant of the AQRVs for the potentially impacted Class I areas, as well as recommending the analytical procedures for evaluating impacts. A consistent and predictable process for evaluating impacts of new or modified projects on AQRVs is currently lacking among the FLMs and state agencies because FLM policy is continually evolving. Even with a pre-application meeting with the agencies, extensive changes may be required in the modeling analyses during the course of the modeling project.

In the past, project proponents were not typically required to perform Class I impact evaluations if the sources were located more than 100 km from Class I areas. Because of recent revisions to FLM policies and procedures, sources within 200 km of a Class I area are usually required to perform visibility analyses. In some cases, visibility analyses are being required for sources located even greater distances (300 km or greater) from Class I areas.

Recommended air quality models have also changed. Previously, ISCST3 was the primary model for near-and long-range source ambient air impacts, and a simple screening model such as VISCREEN was used for evaluating visibility impacts. ISCST3 can still be used for near source modeling in most cases, although use of AERMOD may be required on a case-by-case basis. AERMOD may be desirable in many cases, as it tends to result in lower impacts for some situations. Moreover, AERMOD will be required across the board sometime in the near future. Currently, VISCREEN is used only for evaluating visibility impacts of sources within 50 km of Class I areas. CALPUFF is required for refined modeling of visibility impacts from sources greater than 50 km from Class I areas. If source impacts exceed certain visibility impact thresholds, then a cumulative source impact analysis is also required. A cumulative analysis evaluates the combined impacts from all emission increases since some "baseline date". The baseline date is not defined by regulation and continues to change along with evolving FLM policy.

Changes in recommended air quality model use have significantly increased the length of time and amount of resources necessary to complete an air quality impact evaluation, compared to using ISCST3 and VISCREEN. This is due in part to differences in meteorological data file requirements for use with CALPUFF. Typically, very large meteorological databases are required for CALPUFF's meteorological pre-processing system (CALMET) requiring significantly increased levels of effort and availability of computers with faster processing capabilities, and very large capacity hard drives.

Other factors associated with FLM analytical requirements now make it more difficult to demonstrate acceptable visibility impacts. FLMs are now requiring visibility reference levels to be based on natural conditions (conditions absent the effect of man-made air pollutants) instead of basing levels on actual high visibility days. This requirement lowers the thresholds for determining if a new source causes impairment. With the low "natural" reference level, typical of the western United States, even very small pollutant concentrations can indicate a significant visibility impact, especially if meteorological data show high relative humidity on the impact days. Though such high humidity may often lead to natural visibility impairment by fog, clouds, or rain, these natural visibility effects are not adequately considered in the background reference condition.

Recently, EPA has begun to certify that certain Class I areas have existing visibility impairment greater than 10% above natural conditions. This finding has the potential consequence of mandatory cumulative analyses of regional haze impacts unless the new/modified source impacts are below a *de minimis* of only 0.4% change from natural conditions at the affected Class I area(s). Typically, the procedures and thresholds for visibility analysis follow the FLM recommendations outlined in the Federal Land Managers' Air Quality Related Values Workgroup (FLAG) document. The visibility analysis thresholds recommended in FLAG for a new/modified source include:

- A *de minimis* of 0.4 percent change will require no further analysis regardless of whether the affected Class I area has demonstrated existing visibility impairment
- 5 percent or less will not require further analysis unless the affected Class I area has demonstrated existing visibility impairment
- 5 to 10 percent may require further analysis for cumulative impacts, at the discretion of the FLM, depending upon the magnitude and number of exceedances
- Greater than 10 percent will likely result in FLM objection to permit issuance

The permit application will likely still be approved by the FLM if modeled cumulative impacts exceed 10 percent, but the source contributes less than 0.4% to these impact exceedances.

Another recent change to impact thresholds for cumulative analysis is for the air quality related value of deposition. Previously, source-only deposition was estimated and compared to levels of acceptable change (LAC) corresponding to perceptible adverse impacts to soils, vegetation and water bodies. If the maximum deposition impacts were below these LACs, then no further analysis was required. However, the FLMs have recently developed a set of Deposition Analysis Thresholds (DATs) that are approximately 4% of the previously established LACs. If maximum deposition impacts from the new/modified source exceed these DATs, then a cumulative deposition impact analysis will likely be required. These DATs are 0.005 kg/ha-yr of either total sulfur or nitrogen deposition in the affected Class I areas.

Overall these changes in air quality models and visibility analyses are making it much more difficult to obtain a PSD permit, and are increasing the time and labor required to prepare a permit application, which can substantially increase the cost as well. The more sophisticated air quality models require more resources (people and time) for processing meteorological data and completing the computer simulations. In addition, there are more variables than ever before in the permit process due to the increased involvement of the FLMs and the constantly evolving policies affecting visibility evaluations. To avoid FLM opposition to a permit on the basis of regional haze impacts, the source may be required to implement more stringent emission controls that more closely resemble lowest achievable emission rate (LAER) technologies as defined in the non-attainment rules rather than best available control technology (BACT) as defined in the PSD rules. This push towards the cleanest technologies without consideration of cost is threatening the economic viability of well-conceived and much needed projects across the west. Thus, with the increasing involvement of the FLMs in the PSD permitting process comes greater uncertainty in project feasibility.

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TIMELY NEWS

On October 17, 2002, the Colorado Air Quality Control Commission revised the exemptions for condensate storage tanks used in exploration and production (E&P) activities. This rule change requires that operators of condensate storage tanks greater than 730 barrels per year must file Air Pollutant Emissions Notices for their tanks by January 31, 2003. In cases where an operator has more than 50 tanks, they may file in thirds each month until March 31, 2003. For more information, call Jim Easton, 303-790-1332 . □ jeaston@mcvehil-monnett.com