Steve - I think the downwash requirement should be limited to nearby sources? your comments

3/27

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

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ENVIRONMENTAL PROTECTION ... 13 AM 9:29
AIR & WASTE MANAGEMENT DIVISION

March 8, 1989
REPLY TO: 6T-AN

MEMORANDUM

SUBJECT: Application of Building Downwash in PSD Permit Applications

FROM: William B. Hathaway
Director
Air, Pesticides & Toxics Division (6T)

TO: John Calcagni
Director
Air Quality Management Division (MD-15)

The purposes of this memo are to raise to your attention some problems Region 6 has encountered in requiring building downwash in PSD modeling and to urge you to consider making changes in EPA's current policy of applying building downwash to background sources in PSD modeling.

The crucial problem raised by using building downwash in PSD modeling is application of the technique to background sources. Of particular importance is the lack of availability of the data needed to perform the downwash modeling.

Regarding this lack of data needed to perform building downwash, neither EPA nor any Region 6 state has the building parameters for background, industrial sources necessary to perform building downwash analyses. The PSD applicant that is advised to model all appropriate background sources with downwash (including all increment-consuming sources in the area of impact that are subject to downwash and which may number several hundred in the case of refineries) must now contact those sources directly and request such data. Because these background sources may be competitors, may consider such information confidential, may not want to disseminate such information except directly to a requesting state or federal regulatory agency, or simply may not want to spend the time collecting such data, the PSD applicant cannot be assured of obtaining the required data. This can bring the PSD permit application process to a halt. Applicants then frequently bring their grievances on this subject to the attention of elected officials or industry trade groups who may excoriate EPA Regional Offices for their bureaucratic inflexibility. This is happening in Region 6 because of the current EPA building downwash policy.

In order to solve this problem, I recommend that EPA-OAQPS decide if this requirement is worth the cost to the applicant. If it is, then you should issue regulations to formally require -- and fund -- states (e.g., through a 105 grant requirement or through an OAQPS-sponsored contracted effort) to collect from industrial sources all the data necessary to perform downwash analyses using the new Schulman-Scire algorithm. Until such data are collected and available for use by applicants, I believe that EPA should not require that downwash be conducted for background sources in the course of PSD applications. Although Bill Laxton's Division has taken what I think is a scientifically justified position in recommending that building downwash be considered in modeling, science is not the only factor driving EPA regulatory activities. Another major factor is pragmatism. In the case of requiring building downwash for background sources in PSD modeling, there are no data readily available for applicants to do the analyses; short of a long research effort by applicants that must rely upon the background sources themselves, PSD applicants will not be able to obtain the necessary data. This burden also greatly slows the PSD application process and greatly adds to the costs of performing the required PSD modeling. Obviously, the current EPA policy on building downwash in PSD modeling fails the pragmatism test. (The Attachment illustrates a common Region 6 situation.)

In summary, this is a very serious PSD issue in Region 6. I believe that Region 6 is particularly affected by the current OAQPS policy because of the large number of existing PSD sources, the large number of PSD applications, and the very complex nature of many of these sources that makes them subject to downwash.

I would appreciate your timely, positive response to me regarding this issue. If I can answer any questions you may have regarding this memo, please contact me. Staff inquiries should be directed to Jim Yarbrough at FTS 255-7214. Thank you.

Attachment

cc: **Air Division Directors, Regions 1-5, 7-10**
William Laxton (MD-14)
Joseph Tikvart (MD-14)
Ed Lillis (MD-15)
Dan Deroeck (MD-15)
Doug Grano (MD-15)
Dean Wilson (MD-14)

A PSD permit application for a major modification to an existing Louisiana refinery was recently received by Region 6. The modification was major for, among other pollutants, SO_2.

The area of significant impact for SO_2 was determined to be 20 km. The proposed modification was significant for all SO_2 averaging times.

For the NAAQS analysis, Region 6 advised the source to model all significant, background sources out to 70 km. The applicant reduced the number of background facilities to be modeled from 73 to 33.

A summary of the background source situation is as follows:

73 facilities within 70 km of the proposed modification

33 facilities exceeded the Louisiana screening level and must be included in the NAAQS modeling

The 33 facilities consist of 394 sources and 378,253 tons/year of SO_2

40 facilities were screened out of the NAAQS modeling by the Louisiana screening procedure

10 facilities consisting of 156 sources were located within the area of significant impact

33 Facilities Included in SO_2 Emissions Inventory

Facility	Distance (km)	Q (tons/year)	# Sources
Melamie Chemical	35	1,000	2
E.I. Dupont	30.5	11,564	1
Shell Chemical	39.5	3,773	6
BASF	40.5	5,756	8
Arcadian	47	13,761	7
Union Texas	47	2,515	8
Dow Chemical	65.5	1,503	37
Gulf States Utilities (Willow Bend)	54.5	72,658	7
Cos-Mar	48	2,419	1
American Cyanamid	33.5	3,956	8
LP&L (Ninemile)	46	46,286	10
NOPSI-Market St.	53.5	19,041	3
NOPSI-AB Peters	55.5	25,789	5
LaRoche Chemical	61.5	7,796	1
Union Carbide	16.5	821	26
Shell Oil Refinery	20	28,690	51
LaRoche Chemical	20.5	1,058	1
Monsanto Agricultural	29	1,642	4
Occidental Chemical	16	1,547	7
Shell Chemical	18.5	4,596	20
LP&L (Little Gypsy)	14.5	15,572	6
LP&L (Waterford)	14.5	55,550	5
Good Hope Refinery	21	4,258	36
GATX Terminals	20.5	481	4
International M	30	992	39
Texaco-Louisiana Refinery	29	13,065	32
Agrico-Uncle Sam	22.5	23,234	7
Agrico Chemical	31	2,831	7
LaRoche Chemical	7	1,458	4
Occidental Chemical	22	748	4
E.I. Dupont	7.5	2,348	12
Nalco Chemical	4	187	3
Mt. Airy Refining	5	1,358	22
TOTALS		378,253 tons/year	394 sources

Although one may question the performance of the Louisiana screening procedure (e.g., Dow Chemical at 65.5 km distant but with only 1,503 tons/year is included in the modeling), the fact remains that big emitters with large numbers of sources and that are relatively near the applicant (e.g., Shell Oil Refinery, Shell Chemical, and others) should certainly be included as significant, background sources for the NAAQS modeling.