Pete Eckhoff

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

24 NOV 1993

MEMORANDUM

SUBJECT: CP&L Stack Height Increase

FROM: Gary Blais, Environmental Protection Specialist
SO_2/Particulate Matter Programs Branch (MD-15)
Dean A. Wilson, Meteorologist
Source Receptor Analysis Branch, TSD (MD-14)

TO: Brenda Johnson, Regional Modeling Contact
Region IV

Background

Carolina Power & Light Company (CP&L) plans to construct a replacement stack at its Lee Steam Electric Plant (Lee) in Wayne County, NC. The existing stack at 200 feet serves Lee Unit Nos. 1 and 2 (Lee 1/2), is approximately 41 years old and is structurally unsound. Lee Unit No. 3 (Lee 3) is 300 feet tall and was built about 4 years after the Lee 1/2 stack. For engineering reasons, the proposed new Lee 1/2 stack will be moved approximately 160 feet east of the existing stack and raised to a height of 300 feet. This height is less than formula Good Engineering Height (GEP) for Lee 1/2 (which is 350 feet), and while still under the influence of Lee 3's stack, the new position and height of the Lee 1/2 stack will reduce wake and downwash effects caused by Lee 3.

Issue

The source would like to take advantage of the policy contained in the June 29, 1992 memorandum from John Calcagni to the Regional Offices. The policy states that "it will generally be reasonable for a source seeking credit for additional stack height to recalculate its GEP formula height due to the siting of a nearby structure, without the need to justify the increase through fluid modeling."

Model Clearinghouse Recommendation

In previous communications, the Clearinghouse had indicated to you that it did appear reasonable to apply the Calcagni memo policy in this case. However, the fact that the Lee 1/2 stack was to be moved as well as raised to a higher height was not

known to either of us at that time. The recent further information we received from you, including the GEP analysis, indicates that the new Lee 1/2 stack will still be under the influence of Lee 3. If this were not the case, we would be inclined to say that raising the stack to avoid downwash is probably unnecessary and therefore credit for increased stack height should not be granted without justifying the increase through fluid modeling. However, since in its new location, the Lee 1/2 stack will still be under the influence of Lee 3, an increase in stack height could still be presumed necessary to avoid wake and downwash effects caused by Lee 3. Therefore, since the other facts have not changed, it is still the Clearinghouse opinion that credit for the increased stack height can be granted without the need to justify the increase through fluid modeling.

As always, the State or the EPA Regional Office retains the authority to require fluid modeling to justify such an increase if you or they believe it is warranted.

cc: P. Eckhoff

FY-94 MODEL CLEARINGHOUSE MEMORANDA

Date	Region	Subject
11/18/93	X	Building Wake Effects on Volume Sources at FMC Corporation
11/22/93	IV	CP&L Stack Height Increase