

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

FEB 17 1995

REGION II

DATE:

AES Guayama, P.R. Proposal to Use RTDM Dispersion Model with Off-Site Meteorological Data

SUBJECT:

J. M. Eng
Kenneth Eng, Chief

FROM: Air Compliance Branch, 2AWM

TO: Joseph Tikvart, Chief

Source Receptor Analysis Branch, OAQPS-TSD (MD-14)

EPA Region II has received a request from an applicant (AES, Guayama, Puerto Rico) to use the RTDM Dispersion Model with off-site meteorological data. Region II plans to require that the applicant use on-site meteorological data. A description of this case, together with applicant's proposal and Region II's position are provided below. We request formal concurrence with our position from the Model Clearinghouse.

Background:

AES Corporation proposes to construct a 413 MW coal-fired circulating fluidized bed facility at a location between Jobos and Guayama, on the southern coast of Puerto Rico. The project will produce 413 MW (net) of electricity for sale to the Puerto Rico Electric and Power Authority (PREPA) and cogeneration steam for the Phillips refinery. Two units shall be serviced by a single 137 meter dual flue stack. AES proposes to utilize ISCST2/RTDM algorithms in the IGM model with five years of meteorological data from a 100 meter tower 5.5 kilometers distant, in Jobos, Puerto Rico. Data is purported to be "PSD" quality.

AES Methodology:

AES Corporation feels that the off-site data is representative for several reasons:

- 1) The long record (5 years) of observations makes the existing Jobos tower data superior to a short-term database at a tower closer to the source, and
- 2) The prevailing trade winds and the homogeneous nature of the surface characteristics make the Jobos tower representative.

AES Proposal:

AES Guayama proposes to utilize the latest five years of meteorological data from the Jobos tower in dispersion modeling for the PSD permit application. EPA's IGM will be used, invoking the ISCST2 and RTDM algorithms. AES requests that Region II accept the use of the five year off-site database as a screening database for the impact analysis and perform both its completeness and technical review accordingly. If predicted increment consumption exceeds 50% of any applicable limit, then AES Guayama will be required to proceed with on-site

meteorological data collection to perform a refined PSD modeling analysis.

Region II Position:

EPA Region II's position is that the applicant must use on-site meteorological data in this case, notwithstanding the existence of a five year database at a proximal location. While Region II agrees that five years of meteorological data is more representative of a particular location than one year of data, the period of record of such data is of less importance in a location like Puerto Rico, given the persistence of the easterly trade winds and small annual temperature range. Furthermore, guidance states that on-site meteorological data is preferred for all complex terrain models at a level of sophistication above the first level screening VALLEY model, and this is certainly true of the RTDM model. The RTDM model should be used with on-site meteorological data, and in addition, this data should be representative of stack top conditions (measured at 100 meters if the stack height is greater than 100 meters). The 5.5 kilometer distance between the proposed facility location and data collection location cannot qualify this data as on-site.

Finally, the existing case of the nearby Pfizer plant is similar to this case. Pfizer, in 1989, proposed to use a complex terrain model with off-site meteorological data. This proposal was rejected by EPA Region II, and the Model Clearinghouse concurred with the Region II decision (see memo: "Interpretation of On-Site Meteorological Data Requirements and the Use of RTDM for a PSD Source", Joseph A. Tikvart to Raymond Werner, 11/07/89). To maintain both technical and policy consistency the EPA Region II position is to reject the AES Guayama proposal and instead require one year of on-site meteorological data.

Please contact Bill Barrett at extension 2335 if you have any questions concerning this memorandum.

cc: D. Wilson, OAQPS-SRAB
S. Riva, AWM-AC
R. Kelly, AWM-AP
A. Colecchia, AWM-AC
W. Barrett, AWM-AC