

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION II

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Use of CTDMPLUS in the Virgin Islands Water and Power Authority

SUBJECT: PSD application

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Enclosed is a modeling protocol from the Virgin Islands Water and Power Authority (VIWAPA) in St. Croix which requests the use of the proposed EPA complex terrain model, CTDMPLUS, for use in their Prevention of Significant Deterioration (PSD) application. The source proposes to erect a 100 meter meteorological tower on its plant property with data also collected at intermediate levels of 10 and 40 meters.

Since CTDMPLUS is not yet official EPA guidance and we are not fully knowledgeable of the model, we request your assistance in the review.

We have reviewed the protocol and believe it has technical merit. The only issue we identified was the plume height of one of the gas turbine units at the facility, which had a final plume rise of 151.7 meters. We understand that the recommended procedure for running CTDMPLUS is to collect meteorological data at plume level heights. However, we believe the 100 meter level tower is sufficient since there actually are six stacks of varying heights and 100 meters is representative of the general plume rise. It should also be noted that these plume rises were determined under stable conditions which at the Virgin Islands are not the important meteorological conditions.

We also do not feel comfortable assessing whether the correct instruments are used on the meteorological tower.

On February 15, 1991, Annamaria Colecchia spoke to Jim Dicke and Dean Wilson about the protocol. They agreed that the plume rise difference may not be critical since this may not be the plume rise under worst case conditions.

As you may recall, this is the facility which was forced to reduce its emissions by 70% based on Region II's use of Complex I and San Juan meteorological data. The utility's agreement to erect a 100m tower and remodel represents a major concession on their part and it is the first step towards an air quality demonstration which rectifies this inconsistency with the modeling guidelines. Therefore, if there are problems with the proposal the Region would prefer to identify and recommend

corrections or modifications such that the proposal could be acceptable (rather than a simple disapproval).

If there are any questions, please do not hesitate to call.

Your comments and assistance on this is appreciated.

Enclosure