

A²

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION II**

FEB 19 1998

DATE:

SUBJECT: U.S. Generating Company - Athens Generating Project
Approval of Meteorological Monitoring Site

FROM: Annamaria Colecchia, Environmental Scientist
TO: Air Programs Branch

A. Colecchia

Dennis Doll
EPA - Model Clearinghouse

Thru: Steven C. Riva, Chief
Permitting Section, Air Programs Branch

SR

This is to request Model Clearinghouse concurrence with the Region 2 recommendation for approval of a proposed meteorological monitoring site for the Athens Generating Project. The proposed monitoring plan includes a 100 meter meteorological tower supplemented by doppler SODAR. The tower and SODAR would be collocated off-site approximately 1.4 km north-northeast of the proposed Athens Generating facility. The meteorological monitoring would be conducted in support of a Prevention of Significant Deterioration of Air Quality (PSD) permit application for a 1080 MW natural gas facility. The applicant proposes to use ISC3 for simple terrain impacts and CTDMPPLUS or RTDM in complex terrain.

The EPA Guideline On Air Quality Models requires that these complex terrain models be used with meteorological data collected on-site. However, in this case, the applicant claims that this would involve substantial tree clearing and the signal from the SODAR would create a nuisance to nearby residents. Furthermore, the electrical infrastructure and access roadways would need to be built. The applicant believes that there is an alternative site to the "on-site" location which is equally descriptive of the atmospheric dispersive conditions at the facility site. This proposed meteorological site, is approximately 1.4 kilometers to the north-northeast on another facility's property and identified on the attached topographic map. Significant tree clearing would be lessened and both electrical and roadway infrastructure are already in place. It is also situated a little further from the residential area.

There would be 3 identical combined-cycle combustion turbine stacks that are each approximately 213 feet tall. The base elevation would be approximately 180 feet. The stack will be designed so that downwash is not a factor. The proposed meteorological tower would be instrumented for CTDMPPLUS, and therefore, also acceptable for RTDM or ISC3. It would be instrumented at 10, 65, and 100 meters, and supplemented by a doppler SODAR. The base elevation is approximately 130 feet. The tower would include wind direction, wind speed, sigma theta, sigma w measurements at the three levels, plus ambient temperature at 2 meters and delta-T between 2 and 10, 10 and 65, and 10 and 100 meters. Near surface measurements will also include dew point, precipitation, and solar radiation. The doppler SODAR will provide wind direction, wind speed, sigma theta and sigma w measurements from 50 meters to 350 meters at a 25 meter interval.

Region 2 recommends approval of the alternate site for the meteorological monitoring. The source location and the monitoring sites are located in the same topographical trough. The important physical characteristics (i.e., proximity to, slope and orientation of terrain) of the two locations are sufficiently similar that meteorological data collected from the two sites for use in dispersion modeling could be regarded as equivalent (On-site Guidance, Section 6.6). Both sites are aligned with long ridges to the east and west with a small hill abutted directly to the south. The proposed source and proposed monitoring site should experience equivalent atmospheric dispersive conditions given that there is similar terrain configuration, no interruption in terrain between the source location and the proposed meteorological tower site, and the separation distance is only 1.4 kilometers.

Although the base elevation of the stack is about 50 feet higher than the base elevation of the meteorological tower, this is not considered significant as the top of the tower will exceed the stack top. Another minor consideration is that the meteorological monitoring site is slightly closer to the eastern ridge while the proposed source location is in the middle of the trough. We believe these differences are not critical to the estimation of impacts from the models.

Lastly, we do not believe that this exception to guidance will set a precedent for the use of off-site data in future regulatory modeling situations. This situation is truly unique, in that the data to be collected is not just "representative" but can be considered to be equivalent to the "on-site". Therefore, data collected at this site should not compromise the technical integrity of the results from either CTDMPLUS or RTDM. We also believe that the "On-site Guidance" document allows for use of off-site data as on-site if the proper spacial and temporal assessments are met. We believe this to be the case in this instance.

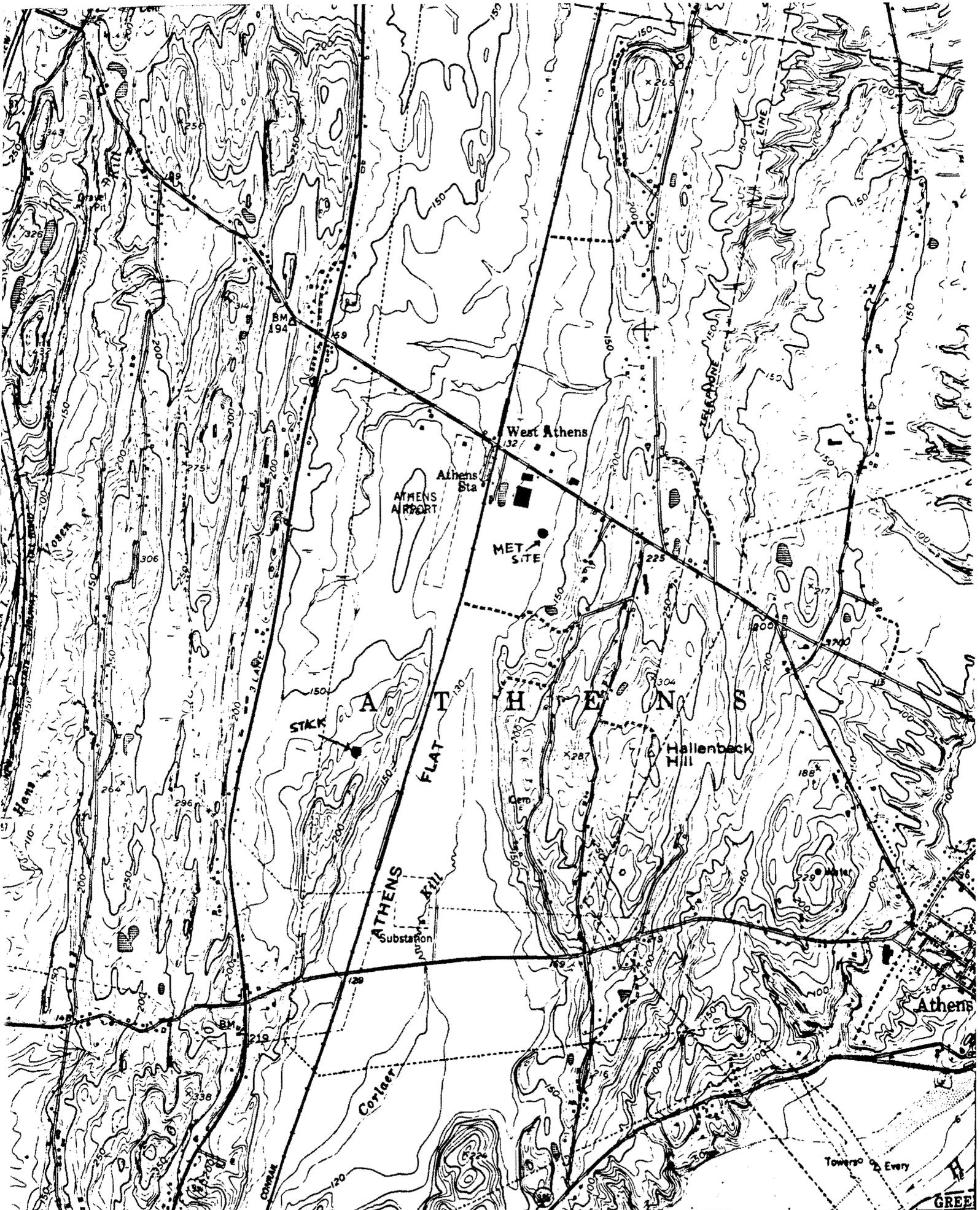
We request your concurrence on these conclusions both on a technical and regulatory basis. Thank you in advance for your assistance.

Attachment

cc: J. Tikvart, EPA-OAQPS
D. Bailey, EPA-OAQPS
D. Wilson, EPA-OAQPS
L. Sedefian, NYSDEC

bcc: S. Riva, APB
B. Kelly, APB
H. Feingersh, APB
M. Kantz, ESD
A. Colecchia, APB

G:\USER\SHARE\APB\AMC\MET-TOWE.CHS



193 CATSKILL (CIVIC CENTER) 2.5 MI. 630 000 FEET RIP VAN WINKLE BRIDGE 2.5 MI. CATSKILL (CIVIC CENTER) 3 MI. 196 50' 197 (HUDSON 6266)

pped, edited, and published by the Geological Survey CONTROL BY USGS and NOS/NOAA CONTOUR INTERVAL = 10 FEET SCALE.