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

January 27, 1988

SUBJECT: Utah Request to use ISCST for Urban Wide PM$_{10}$ SIP

FROM   Dean A. Wilson, Meteorologist
         Source Receptor Analysis Branch (MD-14)

TO: John Notar, Meteorologist
         Region VIII (8AT-AP)

The Model Clearinghouse has reviewed your position on the State of Utah's request to use ISCST instead of RAM for PM$_{10}$ SIP analyses in Salt Lake City and Provo. We agree with your position that RAM should be the basic analysis tool and that ISCST can be used as a supplementary model to analyze additive impacts from complex industrial sources. Our position is based on the premise that from an overall urbanwide standpoint PM$_{10}$ concentrations will be dominated by area source contributions. The area source algorithms in the two models are significantly different in the manner in which they handle dispersion. The area source algorithm in RAM is a better way to handle typical urban area sources than that in ISC.

We also agree with your analyses and positions with respect to the six points used by the State to support their contention that ISCST would be the better approach. In response to your specific questions on Items 3 and 6 we offer the following comments.

Item 3

You are correct that the RAM source culpability analysis is limited to 25 point sources and 10 area sources. However, these sources do not have to be restricted to the highest contributors. Actually the user also has the option to specify the 25 point and 10 area sources. Thus the State, after making the initial RAM run for all days, can go back and rerun the model for specific critical days of high concentration, specifying a different set of sources for source culpability analyses.

In response to your specific question, we are not aware of any software that would allow a larger listing of source contributions. If you do locate such software, a simple demonstration of equivalence would be necessary before the modified model could be used.

Item 6

For the southern Provo area we understand and share your concern about estimates on the rolling terrain. While we agree that concentrations above the mixing height should be suspect, we do not believe that SHORTZ should be used. Beyond the problem of establishing that the Provo area is an urbanized valley (a requirement for using SHORTZ), it should be noted that SHORTZ has an area source algorithm that is the same as or very similar to that in ISCST, which we discussed already.

Our only suggestion in this regard is to first model the area in the normal fashion with RAM. If concentrations approaching the standards are found in the rolling terrain area, it may be desirable to reexamine the high concentration days to see if receptors above the mixing height are in question. If so, concentrations at these receptors could be discarded, on an hour-by-hour basis.

If you have any questions please contact me.

cc: S. Reinders
     D. Stonefield