

the last 15 years, there has been a significant flow of basic and applied meteorological information into the air pollution technology. The various national laboratories and other contractors of the Atomic Energy Commission have carried out research in several major categories: aerosol studies, precipitation studies, atmospheric transport and diffusion studies, and the development of sampling equipment. All of these programs have direct application to the overall air pollution problem.

For example, the aerosol studies have as their objective an understanding of the interrelationships between very small particles and their environment. Since many air pollutants are aerosols, it can be seen that the work done in this category would have direct application to many of the industrial air pollution problems.

The precipitation studies are designed to understand better the effect of scavenging or the cleansing of the atmosphere by precipitation. This involves understanding the processes involved in precipitating systems and the creation, development and eventual dissipation of such systems. The scavenging of the atmosphere by precipitation is nature's method of keeping the air clean of all air pollutants. Therefore it is vital that we know more about the scavenging mechanism.

Although the programs in atmospheric transport and diffusion studies are primarily supported for the purpose of developing a capability to forecast efficiently and expeditiously the concentration of radioactive material from an accident, operational release, etc., anywhere in space and time, the results of these studies are applicable to any problem where the atmosphere acts as the transporting and diffusion mechanism. Many of the studies use nonradioactive materials as tracers. A good share of these contracts emphasize basic studies of atmospheric turbulence, since it is the turbulence which diffuses material in the atmosphere.

In other research studies, the AEC has pioneered in the use of tall towers and constant level balloons for probing the atmosphere, in the performance of some of the major diffusion experiments necessary to verify theoretical models and develop empirical techniques and in studies of the deposition and washout of material on surface features. These studies have been responsible for new techniques in meteorological instrument development and use, for plume height of rise studies and for the development of advanced climatological formats which delineate those features of local climate that determine the diffusive capacity of a site.

Another significant contribution to the quantitative assessment of air pollution problems has been the publication of "Meteorology and Atomic Energy" (now being updated), a technical guide used by the nuclear industry during the past 10 years in reactor safety analyses. The calculational methods and techniques which have been developed for determining atmospheric transport and diffusion of radioactivity are now being used in the evaluation of industrial air pollution problems.

AEC STUDY OF POLLUTION PROBLEMS

It has recently been suggested that the AEC and its national laboratories be used in assisting with the problem of pollution control from fossil-fuel plants, as well as other pressing national industrial waste problem. The Commission, as part of its broad public responsibility,