

that there be a reappraisal of many current concepts and practices in regard to the logistics of waste management.

Over the years the traditional body of opinion in the sanitary engineering profession has been that individual waste treatment facilities such as septic tanks for homes or small complexes of buildings, were the least desirable method of approach. It well may be that an alteration in this philosophy is needed if the problem of water quantity as well as environmental quality is to be solved.

Even without the pollution problem, there is an increasing shortage of water to meet the demands arising from the crowding of approximately 70 percent of the total U.S. population into the 212 standard metropolitan areas. The lessons the Department of Defense and NASA are learning in the waste management and water recovery systems of spacecraft may provide useful techniques and concepts which can be applied to these problems.

It may be possible to develop means and systems for recycle of water within large high-rise buildings. As in all questions relating to environmental pollution, the cost or risk versus the expected benefits must be carefully assessed, and not solely in relation to the specifics of the pollution attribute.

As indicated in our remarks regarding "goal setting," there is a pressing need for a better approach to the establishment of the rationale by which both policy and implementation are developed. The Department of Defense interest in this matter is evident, since the objectives and requirements have a profound influence on the program and actions of the military departments, and upon their budgets. It seems that there is a pressing need for a reexamination of our concept of standards, and how they are derived. We are not only faced with some uncertainties regarding what constitutes adequate environmental quality, but also with the need for finding better means of ascertaining just which of several usages of the environment represent its highest and best utility to man.

Some of the approaches taken in developing permissible exposure limits for industrial operations may be useful, provided they include a spectrum of conditions ranging from the minimum of sensory response to an emergency exposure. This infers a great deal more investigative effort in the whole area of human environmental stress relationships.

It should be emphasized that the research and development activities undertaken on environmental pollution by elements of the Department of Defense are related to the military requirements. While there may be a fallout of benefit to the general national effort, these investigations are not undertaken solely for the purpose of environmental pollution control. Because of the necessity for careful justification of programs and procedures, we have given considerable attention to the problems of scientific establishment of pollution control requirements. We have mentioned the activities undertaken in regard to rocket propellants, to shipboard waste, and specialized munition manufacturing operations.

In each of these there has been a need for investigation of the existing state of knowledge as to potentially harmful effects to the environment, on known means of detection and evaluation, and for possible preventive or control techniques. In each instance there has been a necessity for the most extensive coordination of effort with other Fed-