

bases. In dealing with these we have accumulated considerable experience in the role of technology in establishing environmental quality values.

There is emerging a clear-cut need for better technology in resolving the complex socio-economic-political considerations affecting environmental quality requirements. It is easy to be "against air and water pollution," and demand that something be done regarding solid waste disposal. It is relatively more difficult to ascertain just what should be done in the wide variety of situations involved in the man-environmental relationship.

In the press for demonstrable progress, there may develop over-emphasis on enforcement of requirements which may not adequately provide for the future. There is a lack of knowledge or perhaps ability, to quantify in rational terms the "metes and bounds" of acceptable environmental quality. Inherent in this problem is the fact that living organisms, including man, possess a wide range of adaptability to environmental stress. In only a very few instances are there sharply delineated boundaries between truly harmful, and absolutely safe conditions. This being so, when dealing with the problems of intrusion into the environment of adverse physical, chemical or biological agents, there must also be given an accounting to the questions of the utility of the environment to various sociological ends. Some of these may have no bearing on health, or individual well-being, but may be related to economic utility as the case of effects on shellfish industries, or to satisfaction of esthetics as in the case of protection or preservation of natural beauty.

Mr. DADDARIO. Do you believe we have done enough work to sharply delineate these boundaries you mentioned between truly harmful and absolutely safe conditions? I recognize we must take into consideration these points you have put before us but I wonder if we know what the cumulative impact of some of these effects in our environment will have on man and how do you adapt this philosophy to the situation which confronts us?

Colonel MEYER. Well, Mr. Chairman, there are extremes, of course, that you can define. One can truthfully state what concentration of certain chemical substances will kill fish, for example. You can come up with that value. You can also find what concentration of cyanide in water will affect human beings.

Similarly in the air situation you can indeed define what concentration of carbon monoxide, if inhaled for a certain number of minutes will produce death or illness or demonstrable changes in the human body.

But, below these upper limits, there are a wide range of changes which the body can adapt to and accommodate to and it is in this area that we get into the problem of definition of environmental quality. This is a very complex problem and one, sir, also which involves more than demonstrable physiologic damage.

Later on in this discussion we touch a little bit upon the subject of cost versus benefits, and also in our prepared statement we have in the more detailed report some information on this subject of the need for considering these things.