

ROLE AND RESPONSIBILITY
OF SCIENTISTS AND ENGINEERS
IN RADWASTE COMMUNICATIONS

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Public opinion survey research of recent years reveal a considerable, almost complete ignorance of the subject of radioactive waste on the part of the general public. Accompanying this lack of knowledge is an expression of overwhelming concern about nuclear waste, to the point that nuclear waste is considered by the general public to be a more serious problem than toxic chemical wastes in general. A large segment of the public believes that there are no current acceptable technologies for the safe management and disposal of radwastes. On the other hand, consistent with a pervading, continuing faith in science and technology, the public firmly believes that science will someday solve the nuclear waste problem.

Consistently, survey after survey, the public has identified scientists and engineers to be by far the most credible sources of information on nuclear energy topics. The desire on the part of the general public to obtain nuclear energy information directly from nuclear scientists and engineers is but another expression of common sense. The subject is a technical one, the public wants to hear directly from people who know, that is professionals who are engaged in the field; and the public does perceive a separation between scientific and engineering work, and commercial or profit-oriented activities.

The right and need of the public to know, and the high mark of confidence awarded scientists and engineers are, by themselves, sufficient to clearly establish the responsibility of scientists and engineers to communicate with the public on the radwaste issue. Such communication must be based both on a responsible knowledge of the subject, and on an honest concern for the public's well-being. This responsibility, of course, is equally to science and the engineering profession in the broader context of science and society in today's world.

The nuclear scientist or engineer must inform the public on the nature of radwastes, their production, the potential hazards to public health and the environment, the technologies and procedures for processing, handling, transporting, storing and disposing of radwastes and the adequacies of such in protecting the public health and the environment. In providing information, the scientist or engineer should do so as an individual professional, and not as a representative of an institutional position. Furthermore, this information must be open, honest and responsive. The nuclear scientific and engineering communities must communicate with a wide range of concerned audiences, including legislators, policy and decision-makers, opinion leaders, special interest groups, the media, and the general public in its complexities of demographic and geographic elements. The information must address the specific concerns of each audience.

In the role of informing the lay public, the scientist or engineer has another, fundamental responsibility which, if obvious, must nonetheless be highlighted. This is the responsibility to learn to communicate effectively. Scientists and engineers are trained and in most cases learn through practice to communicate effectively with their peers in the scientific and engineering communities. But, communication with a lay audience, to be effective, requires a very different approach, attitude and emphasis. Before even hoping to communicate on radwaste issues, the scientist or engineer must gain an understanding of where the public (or particular audience) is, and meet the public where it is - the public's fears, concerns, perceptions, beliefs, learning modes, and level of familiarity with and responsiveness to the rational, logical use of words and language common to purely technical or scientific communications. The scientist or engineer must develop messages using words and ideas that address the audience's concerns and that effectively convey information. The scientist or engineer must learn and develop communication skills that will permit his or her messages to be transmitted and positively received by the audience. Finally, because of the overwhelming importance today of the electronics media, the scientist or engineer should learn to use with ease and confidence the mass media communications channels. For if scientists and engineers are looked upon as the most credible sources of information on radwaste or nuclear energy matters, public opinion surveys indicate that an overwhelming majority of the American public takes its information on these subjects from television and radio.

In communicating on radwastes, it is often important to provide a broader perspective on the issue. The benefits (for example electricity or medical care) that accrue from the processes that generate the radwaste should be communicated, for the public, and rightly so, will show little tolerance for information about waste of any kind, unless there is a good reason to generate that waste in the first place. Radwastes should be related to toxic wastes generated by other energy technologies, and the amounts of research, knowledge and management capabilities for radwastes relative to other toxic wastes should be noted. It is also important for the scientist or engineer to be willing to step outside the purely technical arena and address broader social and ethical questions that permeate the radwaste issue.

Perceptions, in a narrow rationalistic sense, are different from reality, and in a purely scientific sense cannot be relied on even as an approximation to reality. However, in the broader arenas of public awareness and social consciousness, perceptions or beliefs are often equated with reality. And public attitudes and societal decision-making are often based on perceptions. Now perceptions or beliefs, like feelings, are neither good nor bad. They are just there. However, decisions can be good or bad. If perceptions or beliefs are incorrect, only valid information, communicated credibly and effectively, can modify and correct them.