

N164. ALARA - An Historical And Global Perspective

The nuclear power industry goes to great lengths to protect its workers. The safety measures which are standard in nuclear plants go far beyond those which protect workers in other industries. Unfortunately, these measures tend to make the public more nervous about nuclear power instead of reassuring them. This has been a factor in the evolution of today's strict radiation protection standards.

The International Council for Radiation Protection (ICRP) originated the concept of ALARA in the 1960s. U.S. Federal regulators adopted the ICRP recommendations in the early 1970s, making radiation protection everyone's concern, not just that of radiation protection technicians. They soon issued Regulatory Guide 8.8 which suggested three areas in which management should concentrate dose reduction efforts. These are:

- Commitment to and support of the concept of ALARA.
- Use of ALARA in the design of facilities and equipment.
- Implementation of ALARA in all radiation protection activities including planning, selection, and qualification of equipment and training of personnel.

Concern over rising US collective doses led the Nuclear Regulatory Commission (NRC) to ask Brookhaven National Laboratory to establish an ALARA Center in 1983 to research effective ALARA processes and practices. In 1988, its domain was extended to DOE facilities. In collaboration with the Nuclear Energy Agency of the Organization for Economic Cooperation, Brookhaven has also been working on an international information system on occupational dose reduction techniques.

In 1985, the US Institute of Nuclear Power Operations (INPO) issued guidelines for radiological protection at nuclear power plants. This followed a 1984 "Good Practices" document recommending the establishment of radiation exposure reduction goals. In 1986, INPO issued an executive summary of this document to its member utilities emphasizing the need for effective ALARA programs. These programs can achieve a level of exposure low enough to provide good protection for workers, while preserving the economic integrity of the plant. Some basic components of these programs are commitment, good management, and the use of proper tools and procedures for operational health physics activities.

Collective doses at US plants have been lowered remarkably by the implementation of sound ALARA programs. However, doses must be continually lowered to reflect the increasing estimates of risks from radiation.

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