

N144. The Challenge Of The 1995 Radiation Exposure Goals

The U.S. nuclear power industry has been remarkably successful at reducing worker radiation exposures over the past ten years. However, the rate of improvement has slowed recently and it seems clear that renewed efforts will be required to meet the industry goals for 1995. This situation leads us to consider a number of questions: what is needed to achieve the goals, can the goals be reached in a cost-effective manner, and what technology is available now that will have the greatest impact by 1995?

The 1990 industry goal was essentially achieved by PWRs and was exceeded by BWRs. Future goals are expressed on the basis of plant median exposures, rather than plant average. Figures in this article show the recent plant data plotted as plant median exposures, together with 1995 industry goals. The downward trend has slowed in the past 3 to 4 years, and significant acceleration will be required to achieve the 1995 goal. These goals present a real challenge. Is the effort required worthwhile? Apart from the obvious reason that the exposure goals are a significant measure of overall industry performance, there are three main technical reasons for supporting the goals. Firstly, the goals are designed to bring U.S. plant performance more closely in line with international performance. Despite the narrowing of the gap, U.S. plant exposures remain significantly higher than best foreign experience. Secondly, current estimates of the health risks of ionizing radiation (e.g., ICRP 60 and BEIR V) are 2 to 4 times greater than earlier estimates. The industry needs to respond to these new risk estimates. Thirdly, radiation reduction is cost effective: outages are shorter, manpower requirements are reduced, and work quality is improved. Despite the up-front costs, the benefits over the following 1 to 3 years typically outweigh the expenses.

Taken From: "The Challenges of the 1995 Radiation Exposure Goals," Howard Ocken and Chris Wood, Radiation Control News, December 1991, No. 12. For further information, call Howard Ocken, (415) 855-2055 or Chris Wood (415) 855-2379. EPRI, 3412 Hillview Avenue, Palo Alto, CA 94303.