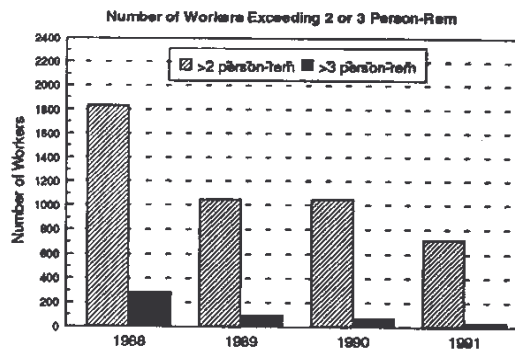


N248. Radiation Exposure Trends

The U.S. NRC has recently published an analysis of 1991 exposure data. Plant average exposures decreased by 23%, the largest drop since 1984. PWRs incurred 223 person-rem/plant and BWRs 324 person-rem/plant. The plant average is now the lowest since 1969, when just seven smallish, newish plants had more than one year of operation.

The number of workers exceeding 2 person-rem decreased from over 1300 in 1990 to under 700 in 1991. Industry had been concerned that the pressure to reduce individual exposures might result in an increase in the total number of workers exposed through dose-sharing, but there is no evidence of this in these data. In fact, the number of workers in each exposure range from 0.1 to 3 rem has decreased each year recently. The number of workers with measurable dose per reactor has declined every year since 1984, suggesting that the rise in operating and maintenance costs attributed to growth in staff numbers is not due to increase in operations and maintenance workers, which seems to be well controlled. The figure presents a graphical summary of some of these data.

Overall, the trends continue to indicate enhanced efficiency in the use of staff in radiation zones and increasing use of robotics and improved technology to reduce fields. The remarkable drop of 400% in dose per megawatt-year in the last 10 years also shows the importance of the improvement in capacity factor that has occurred in this period. 87% of the exposure at the ten plants with highest exposures was incurred during outages. The challenge for the future will be to keep exposures low as plants get older and special maintenance demands increase.



Taken from, "Radiation Exposure Trends," by Chris Wood. Radiation Control News, December 1992, No. 16. For further information call Chris Wood, (415) 855-2379.