789 Radiation-Hazard Control for a Power Reactor. G. H. Whipple. Mech. Eng. 79, 253-257 (Mar. 1957).

The recommended maximum permissible exposure of 0.3 r per week has a small but possibly significant risk for a lifetime occupational exposure. It has been demonstrated that reactor plants can be designed and operated with an average level considerably less than 0.3 r per week. The additional cost of a reactor plant designed for average exposure levels less than 0.3 r per week will probably be recovered many times over by savings in operating costs. In keeping with good engineering practice, which always includes a safety factor in any design, it is recommended that 0.03 r per week be taken as the design criterion. -- Author's conclusions

790 Radiation Exposure Patterns Aboard the USS Nautilus. J. H. Ebersole. New Eng. J. Med. 256, 67-74 (Jan. 10, 1957).

The increasing need for profession-wide knowledge of radiation control practices is emphasized. The radiation control program used aboard the USS Nautilus is described and is presented as a unique application of radiation safety principles. The radiation exposure pattern of the ship during a year's operation is presented, stressing the very low exposures encountered. It is believed that, given similar good engineering design and conservative shielding practices, this pattern can continue in nuclear installations of the future. -- Author's summary

791 Atomic Energy Commission: The Safety and Accident Record to Date. D. F. Hayes. Natl. Safety News 75, (JASSE Section) 19-24 (May 1957). (From an address at a special conference of American Management Association).

A series of tables lists radiation accidents in atomic energy activities and reports the general exposure records in routine operations of AEC contractors. In 11 years between August 1, 1945, and July 31, 1956, there were 16 radiation accidents in which 69 persons were overexposed to radiation. In eight cases only one person was involved. In another instance 28 servicemen were overexposed by an unexpected concentration of fallout after a 1954 weapons test. Of the 69 exposed only two died, in 1945 and 1946. Of the remainder 19 suffered skin injury and several exposures were comparatively minor. The bulk of the injuries occurred in research activities where unknowns involved in any research are usually accompanied by more accidents. In most instances the causes of the radiation accidents have been found to involve human and mechanical causative factors practically identical in type with those for accidents in which no radioactive consideration was involved. It can be concluded that the radiation hazard in industry can be controlled, and that while costs for radiation safety may be high in order to control accidents and injuries, these costs should be considered part of the operating expense.

792 Radium Capsules and Their Associated Hazards. R. G. Gallaghar and E. L. Saenger. Am. J. Roentgenol. Radium Therapy 77, 511-523 (Mar. 1957).

In the past several years there have been at least six accidents involving the escape of radium salts from their sealed containers. Potential health hazards have been created. Radium has been widely spread throughout buildings resulting in several occurrences of serious contamination and tedious decontamination procedures. The authors have had experience in two such episodes. Simple tests for leakage of sealed radium sources are described. Methods of handling radium accidents of this type are outlined. The necessity for adequate records of radiation surveys and decontamination operations is indicated. Practical techniques of handling contaminated individuals, contaminated areas and equipment, and decontamination techniques are detailed. Using proper procedures in such situations, the risk to the health of individuals can be reduced significantly. -- Authors' summary

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