NMT Bookshelf

NCRP REPORT NO. 51: RADIATION PROTECTION DESIGN GUIDELINES FOR 0.1-100 MeV PARTICLE ACCELERATOR FACILITIES

National Council on Radiation Protection and Measurements, Washington DC, 1977, 159 pp.

This report is concerned with radiations produced by accelerators of charged particles having energies from 0.1 to 100 MeV and includes recommendations concerning structural shielding and details of accelerator facility design, as they pertain to radiation protection. There is some overlapping of this report with the coverage of other NCRP reports but every attempt has been made to limit duplication of material, except where it is justified for the sake of continuity. The recommendations in the report provide basic standards for use in the preparation of regulatory protection codes.

The booklet is divided into four chapters and nine appendices. The chapters include an Introduction, which defines the purpose, scope, and general consideration of the report, and is followed by chapters on facility considerations, sources of radiation, and radiation shielding. The appendices contain a number of statements, tables, and graphs relating to a number of topics associated with the design of shielding for particle accelerators.

NCRP Report No. 51 will be particularly useful to those persons involved in the design of proper facilities for the accommodation of nuclear medicine cyclotrons. Examples are given of some typical methods of shielding accelerators and of providing access to accelerator vaults. Examples are provided to allow the reader to calculate the radiation escaping from such facilities, thereby allowing proper calculation of the shielding required.

This booklet will not be of any value to the nuclear medicine technologist in normal circumstances, although if acquisition of a particle accelerator of some sort is contemplated, then quite obviously the recommendations contained in this NCRP report should be given due consideration.

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NCRP REPORT NO. 53: REVIEW OF NCRP RADIATION DOSE LIMIT FOR EMBRYO AND FETUS IN OCCUPATIONALLY-EXPOSED WOMEN

National Council on Radiation Protection and Measurements, Washington, DC, 1977, 42 pp.

The NCRP issued a statement on the recommended dose limit for fetal irradiation in 1971. Since that time, a number of reports have been published dealing with this subject; the NCRP Board of Directors also appointed an ad hoc committee to review the basis for the current dose limit and the published reports pertinent to the question, and to decide whether the information warranted any change in the stated dose limit. This report is the result of that review.

The ad hoc committee recommended that the maximum permissible dose remain at 0.5 rem. The main body of this report consists of comments on the conclusions and recommendations of the committee's study.

Appendix A of the report is the historical background of ICRP and NCRP dose limits for the embryo–fetus. As with all NCRP reports, this one provides a very concise and consolidated collection of information relating to the subject. The major part of the booklet summarizes the state of knowledge as it existed in 1976, and anyone concerned in radiation protection activities would be well advised to read this portion of the report, if not the rest of it. The report will probably be of considerable interest to nuclear medicine technologists, particularly those who may become pregnant during their working life, since it is directly associated with that situation.

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FUNDAMENTALS OF RIA AND OTHER LIGAND ASSAYS

Jeffrey C. Travis, Radioassay Publishers, Anaheim, 1977, 168 pp, $25.00.

This soft-bound booklet (5½ × 8½ in.) is designed to teach the basic principles and the practical applications of ligand binding assays. Referred to as "a programmed text," the book utilizes an outline format in which, after a statement is made, specific questions are asked, followed by the appropriate answers. Subject matter includes radioassay, enzyme immunoassay, viroimmunological assay, and fluoroimmunoassay. Automation, kit selection, and quality control are among other topics discussed. Comprehension of the content presumes experience in chemistry and laboratory procedures.

Although the text contains much useful information, it is plagued with multiple typographical errors, misspellings, and run-on sentences. In addition, this reviewer noted an incorrect figure, an incorrect formula, and several misleading or confusing statements. These oversights conspire to make difficult concepts even more difficult for the student.

The text is overpriced at $25.00.

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