dation. Cold storage of sodium pertechnetate is not common U.S. practice. Individual monographs list *Organ Specificity* but times, animal species, and methods are not given so the utility of thse specifications is obscure.

The concept of using various process controls is an important dimension of quality assurance often omitted in previous quality-control discussions. Unfortunately, the two most important process controls, monitoring for aseptic technique in drawing and dispensing doses and monitoring personal radiation exposures and biocontamination, are not included. This booklet is a step towards providing a handy, quick, quality-control reference; however, it should be used with other texts or other references from current nuclear medicine practice.

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QUALITY ASSURANCE IN DIAGNOSTIC RADIOLOGY. Medical Physics Monograph No. 4, American Association of Physicists in Medicine. New York, American Institute of Physics, 1980, 180 pp, members AAPM $10.00; nonmembers $20.00.

This monograph contains the proceedings of the symposium "Higher Level Quality Assurance in Diagnostic Radiology" held in Cincinnati in July, 1977. The stated purpose of the monograph is to "enable technologists working with the guidance and supervision of a medical physicist to set up a viable quality assurance program in diagnostic radiology with minimal expense." Although the publication provides considerable useful information, it does not achieve its stated purpose uniformly throughout the text. This shortcoming occurs because much of the information is not suitable for use by technologists, and almost no information is provided about the cost of required test instrumentation, manpower commitment, or methods to evaluate the effectiveness of quality-assurance procedures. Another deficiency is the unfortunately long delay between the date of the symposium (July 1977) and the publication of the proceedings (December 1980).

The book is divided into 13 chapters covering the need for higher level quality assurance (Chap. 1), assessment of automatic exposure and brightness control systems (Chap. 2), evaluation of generator performance (Chap. 3), photographic processor quality control (Chap. 4), cineradiographic systems (Chap. 5), image intensifier and television systems (Chaps. 6 and 7), the modulation transfer function (Chap. 8), x-ray filters and beam quality (Chap. 9), protection surveys (Chap. 10), radiation exposures to patients (Chap. 11), testing results on certified equipment (Chap. 12), and description of an approach for a unified view of radiological imaging systems (Chap. 13). Although useful information is presented in each chapter, the most practical information is found in Chaps. 1-5, 9-11. The information in Chap. 11 on radiation doses from diagnostic procedures is particularly valuable since it presents an excellent overview of the subject with an extensive reference list.

This book represents a useful addition to the literature in the area of quality control, and it is recommended to those individuals actively involved in the field.

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PHYSICAL TECHNIQUES IN MEDICINE. Vol. 2. J. T. McMullan, Ed. Chichester/New York/Brisbane/Toronto, John Wiley & Sons, 1980, 158 pp, illustrated, $45.00

This is the second in a series on biomedical engineering subjects written by authors from the United Kingdom and South Africa. The aim of the series is to "discuss these physical techniques and to present the necessary background together with clinical applications." In the preface, we learn that the series "is intended to meet the needs of students and research workers in medicine, medical physics, bioengineering, and related areas."

In this second volume, the five chapters are: The CAT Scanner, Pressure Sores, Hyperbaric Medicine, Cryosurgery, and Radiation Therapy. Although the level of these chapters indicates they are intended for the beginner, the depth varies significantly from chapter to chapter. The mathematical level is elementary throughout this book. A comprehensive index is provided.

The discussion of the CAT Scanner is particularly disappointing: the level of treatment is very superficial, the illustrations are poor, and many of the statements made in the text, especially those relating to clinical applications, are remarkably naive. The discussion of reconstruction procedures does not include filtered backprojection. Eight references are provided, but the best texts and reviews on the subject are omitted.

Upon reading this chapter, radiologists and nuclear medicine specialists will be interested to learn that "it is not possible to see through the heart shadow" on conventional chest x-rays. Potential purchasers of CAT scanners will be loathe to find that "the price of a CT scanner is probably similar to the price of a commercial airliner or a new sports stadium: certainly it is a good deal less than that of a nuclear submarine." Such erroneous comments are common in this chapter.

The discussion of radiation therapy in 21 pages with seven figures and five tables is necessarily rather superficial. This is an honest effort, however, and a novice may digest the material quickly in a single sitting. Only four references are provided, none more recent than 1978. The author refers to his 1974 text on the subject, published in England, but no current American texts are mentioned.

The remaining chapters on pressure sores, hyperbaric medicine, and cryosurgery treat their rather narrow subjects in greater depth, and each is accompanied with appropriate references.

This book, with the exception of the chapter on CAT scanners, may be useful for beginning readers with general interest in the topics presented.

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COMPUTERS IN ULTRASONIC DIAGNOSTICS. P. N. T. Wells, J. P. Woodcock. Forest Grove, Oregon, Research Studies Press, 1980, 94 pp, illustrated, $27.50

This is volume 1 in the Medical Computing Series (edited by D. W. Hill). This brief monograph is organized into ten sections, each with appropriate tables and illustrations and a set of references for each section. A total of 107 references is provided, but they are somewhat dated. An extended table of contents is provided, but there is no index.

The sections include data acquisition, data recording and digitization, signal analysis and processing techniques, ultrasonic tomographic reconstruction, digital picture enhancement, feature extraction and pattern recognition, three-dimensional applications, and examples of some early ultrasonic imaging computer systems.

The mathematical level of the monograph requires some prior knowledge of Fourier, Laplace, and z transforms. Both one-dimensional pulse echo and Doppler technology are considered. Real-time two-dimensional scanners and small-parts scanners are not treated in depth. The commonplace, digital, solid-state scan conversion memory was not in wide use at the time the monograph was written and therefore is not described in detail.

The material relating to specific computer systems and ultrasonic data acquisition and processing hardware is badly out of date. The reader can, however, develop an appreciation of the level of development of ultrasonic computer technology several years ago.