8. Detection Instruments for Radiation Protection. The inability of the human being to detect and evaluate ionizing radiations by means of the natural sense has created the need for special instruments. The various types of instruments and how they are calibrated and used are set forth. This section likewise is pertinent to current civil defense activities.

9. Cost of Radiation Protection. Sample comparative plant construction and operating costs serve to illustrate the immense additional expenditures necessitated by radiation protection requirements.

Part II, entitled "Highlights of 1950 in Atomic Energy Programs," records the outstanding developments in production rates, new facilities, construction, administrative policy, and progress and new developments in physics, medicine, and agriculture. Brief reference is made to production of thermal nuclear weapons (H-bomb).

Ten appendixes contain much useful information on such items as principal staff of the AEC, membership of the various advisory committees, list of major research centers of the AEC, isotope distribution program, list of AEC contracts for research in radiation production, etc.

The report is undoubtedly the most inclusive compilation of information available to the general public on the AEC radiation protection program. It should be required reading for industrial hygienists, industrial medica land safety personnel, and other public health workers.

A. T. Rossano, Boston.

Monitor for Airborne Radioactive Dust. J. B. H. Kuper, E. H. Foster and W. Bernstein, Atomic Energy Commission Unclassified Document 800 (no date).

This eight page paper describes a continuous monitoring instrument, several of which have been constructed and operated at Brookhaven for studying the natural radioactive background and its daily variations. A strip of filter paper is moved continuously across an aperture through which the air to be monitored is pumped. After dust collection the paper passes one or more counters. The standard Brookhaven arrangement utilizes one mica window β-γ counter which sees the dust sample about one hour after collection and an α counter which sees the sample about four hours later. The apparatus is so designed that additional counters can readily be used, or the time sequence of the various counts readily altered from a minimum of about one-half hour to a maximum of about 18 hours following collection.

Adaptation of Nuclear Sc. Abst.

Radiation-Exposure Survey of X-Ray and Isotope Personnel. Charles K. Spalding, Egilda De Amicis and Russell F. Cowing, Nucleonics **5**:63, 1949.

A survey of radiation exposure based on 7,678 films worn by personnel indicates that x-ray personnel received substantially more radiation than personnel working with isotopes. In a nine month study of 45 workers in four x-ray departments 0.43 per cent of the films exceeded the standard weekly tolerance of 0.3 r., and 2.9 per cent ranged between 0.05 and 0.3 r. In a three week survey of 61 persons in 13 other establishments, over 3 per cent of the x-ray personnel exceeded the permissible weekly level, and some weekly exposures were as high as 9 r. The Atomic Energy Commission has adopted a daily tolerance dose of 0.1 rem instead of the 0.3 r. per week recommended by the National Bureau of Standards for x-rays. Nevertheless, an eight month survey of 140 individuals in isotope laboratories showed only one weekly film in excess of 0.3 r. and only 0.5 per cent above 0.05 r. No exposure of the hands from opening packages of isotopes was recorded.

Adaptation of Chem. Abst.

A Direct Method for Determining Radium in Exposed Humans. Edwin R. Russell, Roman C. Lesko and Jack Schubert, Nucleonics **7**:60 (July) 1950.

Radium in urine and other biological materials can be routinely determined by a rapid, sensitive method involving counting of alpha particles from the radium, following separation. The method consists of wet-ashing urine of tissues with concentrated HNO_3, dissolving the ash in 0.1 molar HNO_3, and coprecipitating the radium with $PbSO_4$; the $PbSO_4$ precipitate is dissolved in HCl and the radium coprecipitated with a few milligrams of $BaCl_2$. The radium