THE ANSTO BODY PROTEIN MONITOR

N. BLAGOJEVIC and B.J ALLEN

The first Body Protein Monitor (BPM) to operate in Australia (Allen et al. 1987, 1989) was fabricated at the Lucas Heights Research Laboratories in 1985. In collaboration with The Children's Hospital, Camperdown, this instrument was successfully used in a study of protein deposition in children with cystic fibrosis (Baur et al. 1990). Other clinical studies followed of end-stage renal failure (Allman et al. 1990, Pollock et al. 1990) and the effects of aortic surgery (Fletcher et al. 1990). Current projects include phenylketonuria, anorexia nervosa, liver disease and transplantation, synthetic growth hormone, intravenous fat emulsions, and paediatric arthritis. Some six Sydney hospitals are involved with these projects. The ANSTO prototype BPM is now located in the Nuclear Medicine Department of the Royal North Shore Hospital.

The widespread application of the BPM and its acceptance by Sydney medical specialists as a vital element in clinical trials led to the design and fabrication of a commercial model. This unit has been sold to the University of Texas Medical Branch, and has been designed to study obese subjects. The BPM features a computer controlled table operation which allows all subjects to be measured to the same statistical precision. The Am Be neutron sources, supplied by the customer, can be turned on and off by virtue of rotating shield and collimator drums. Other features include the low background around the monitor, aluminium construction, top and bottom neutron sources, 4 high efficiency 10 x 10 x 20cm NaI detectors and the 7 minute counting time. There is also a provision for a bismuth germanate detector for the direct measurement of whole body chlorine.

The IBM PC computer system is based on the Canberra S100 multichannel analysis card and Microsoft Windows Software operation.

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Nuclear Applications, Biomedicine & Health Program, Australian Nuclear Science and Technology Organisation PMB 1, Menai NSW 2234.