

Because of a minimum of available knowledge of the protection qualities of shielding material, and some indecision on personnel radiation protection regulations, in some countries, the Eldorado model was designed conservatively. Somewhat more than adequate protection for hospital personnel was provided. This has in recent years proven to be valuable because it permits of a considerably stronger cobalt source than was originally considered.

There was reason for a good deal of confidence in the future uses and market for machines of this type. It was also apparent that there was considerable room for variety in design of the machines, to provide convenience in a variety of clinical techniques. This situation coupled with the obvious advantage of being ahead of other countries both in ability to produce suitable Cobalt 60 and in design experience, provided the incentive to design and build a more ambitious machine. This machine trade named "Theratron B" is much more massive, and is capable of precision rotation and oscillation movements. It provides a built-in treatment bed and makes possible precise fixed, multiportal and rotation treatment techniques with a minimum of lost time in patient set-up.

The first Theratron B was completed and installed in May 1953.

In the meantime substantial amounts of cobalt were entered in NRX with a view to providing supplies for quantity sales. A period of about two years is required to produce satisfactory Cobalt 60 in NRX.

The accident in NRX in December 1952 found much of the cobalt only partly processed. Some good, and some second rate sources were salvaged, but the programme received a very severe set-back. It was early 1957 before the output of Cobalt 60 from NRX again returned to normal.

During this period, companies in other countries throughout the world began to design and build cobalt therapy machines. Cobalt 60 of suitable specific activity became available in the United States. When Canada was again in a position to proceed vigorously, the position was no longer a monopoly but rather one of keen international competition. In spite of these problems very substantial progress was and is still being made. The table below indicates year by year results.

TABLE I

Atomic Energy of Canada Limited Therapy Machines

<u>Year</u>	<u>Equipments shipped</u>	<u>Total to Date</u>
1951-52	1	1
1952-53	4	5