

Today, AECL provides over half the world's supply of radioactive isotopes for medical diagnostic procedures.

Treatment Planning

The fact that one spoonful of medicine may be good for what ails you does not always mean two are better. The second may actually be harmful.

In radiation therapy for cancer the rules are no different, the objective being to determine how much and where the radiation is needed and then to make sure the prescription is accurately filled.

That is where Atomic Energy of Canada's medical division, AECL

Medical, comes in with treatment "simulators", which make it possible for the therapy team to, in effect, "practise" a treatment protocol before exposing patients to gamma rays.

With the use of a device known as Therasim 130 and a treatment planning system dubbed TP-11L or Theraplan L, both designed and manufactured by AECL, all data on the size and location of a tumor is put into a computer. There, the correct radiation dosage is calculated.

Theraplan L permits three-dimensional "density" data obtained from computerized axial tomography (CAT) scans to be used in calculating dose distributions for

different areas of a tumor.

The system's console includes a colour monitor to display CAT scans and graphics, as well as an alphanumeric terminal, standard keyboard, numeric keypad and a trackball and potentiometers cluster for interaction with the CAT pictures. The system will work with most types of CAT scanners.

The use of electron beams in radiation therapy is growing steadily today and both the TP-11L and Theraplan L systems give beam calculations for all electron energy levels both for fixed and moving therapy fields.

Another aid in following the patient's treatment is AECL's "TRIM" tumor registry where patient records of diagnosis and treatment can be stored. This system makes possible instant recall of information for hospital statistical purposes as well.

To meet the need for qualified operators, AECL provides training courses on its computer-based system at its plant near Ottawa. It also maintains service centres and parts depots in the USA, Australia as well as in other parts of Canada.

Nuclear Medicine

Over half the world's supply of medical radioactive isotopes is supplied by AECL. Its industrial and isotope products division, is a major supplier of radioisotopes.

One of several isotopes can be attached to a drug designed to concentrate on a particular internal organ doctors may wish to examine. It collects there after injection into the bloodstream and a gamma camera or nuclear medicine camera then obtains an image of the organ.



The latest addition to AECL's cobalt-60 cancer treatment program is the low costing Phoenix.