THE COST OF NUCLEAR DESALINATION

What would be the cost of fresh water obtained by desalination of sea or brackish water with the help of a nuclear reactor? What methods are being employed for such costing and evaluation?

These are basic questions for the increasing number of countries wich are considering water desalination for the production of drinking water or for industrial or agricultural purposes.

Following the recommendations of a panel of experts convened by the IAEA in Vienna, Austria, in April 1965, the Agency is now preparing a report on the desalination methods used or developed in various countries. Another panel met in Vienna in April of the current year, to help the Agency with the final draft of this report which is due to be published this autumn.

The panel, 20 experts from 7 countries, was chaired consecutively by Mr. N. Carrillo (Mexico) and Mr. V.N. Meckoni (India).

ISOTOPE CHRONOLOGY AND RECORDED HISTORY

By Willard F. Libby

Professor Libby gave a lecture on radiocarbon dating at IAEA headquarters, Vienna, in January 1966.

Nature produces radiocarbon by the irradiation of the air by cosmic rays. Radiocarbon has an average lifetime of 8000 years and a half lifetime of about 5 700 years ; a good part of the radiocarbon in your body was produced before the dawn of history. History is a really very recent matter in terms of radiocarbon. Our oldest historical records are less than one half-life of radiocarbon. In terms of the age of the earth, however, radiocarbon is short-lived. The age of the earth is something like 5 000 million years, which is a million half-lives of radiocarbon. Radiocarbon has little application to the broad sweep of geological processes, but it does have application to human history.

Now this is how it works. In the topmost layers of the atmosphere, at altitudes of about 50 000 feet, cosmic rays produce radiocarbon by converting the nitrogen into carbon 14, with a different chemistry. Carbon in air will burn and the product is mainly carbon dioxide. Carbon dioxide is our substance. We are made of three things in essence - carbon dioxide, water