

HUMAN EXPOSURE FROM ENVIRONMENTAL CONTAMINANTS

R. F. Foster

Radiation Protection Department

Better estimates of the radiation exposure received by people that live near atomic energy plants are being obtained through studies that combine information on diets and whole body counts. The program includes both survey-type data and controlled experiments. Thousands of local people that have received whole body counts have also completed dietary questionnaires. These data are being incorporated into an electronic data processing program that permits the computations of relationships between body burdens of certain radionuclides and the kinds and quantities of foods consumed. For example, an exercise to demonstrate the applicability of the program permitted us to determine that people obtain about 25 percent of their  $\text{Cs}^{137}$  body burden from milk and this  $\text{Cs}^{137}$  is retained with an effective half-life of about 65 days.

Consumption of Columbia River fish, under experimental conditions, accompanied by frequent whole body counts, has shown that virtually 100 percent of the  $\text{P}^{32}$  is absorbed and that the effective half-life is about 9.3 days. The same experiment showed that about 40 percent of the  $\text{Zn}^{65}$  ingested with fish is retained (the value adopted by Committee II of the ICRP is 10 percent), and the effective half-life is 150 days.

The quantification of the movement of several radionuclides through environmental pathways to man will result from this work. Modeling of relationships of this type is being undertaken in conjunction with the Applied Mathematics Department. ~~Zinc~~<sup>Zinc</sup>-65 is of particular interest at this time because it can be traced to man from both fish and cattle.

**326 US ATOMIC ENERGY**

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BOX No. 2

FOLDER 5