

ocean circulation measurements. Water from the Gulf Stream has been traced through the North and Norwegian Seas, either into the Arctic Ocean or to the deep water formation zones off the coast of Greenland. This paper will review the techniques specific to AMS ^{129}I analysis and present some details of the above applications.

266 URANIUM INCORPORATION IN THE POULTRY BONES IN FUNCTION OF ADMINISTRATION OF PHYTASE AND U IN THE CHOW. J. D. T. Arruda-Neto^{*1,2}, A. C. Cestari^{2,3}, C. B. Zamboni², M. Saiki², G. P. Nogueira⁴, M.V. Manso Guevara^{1,2}. ^{*1}Universidade de São Paulo- IFUSP- Brasil, ²Instituto de Pesquisas Energéticas e Nucleares - CNEN/SP- Brasil, ³Universidade de Santo Amaro - Brasil, ⁴Faculdade de Veterinária - UNESP - BRASIL

Groups of seven days old Cobb broilers were fed with ration doped with uranyl nitrate at a fixed concentration of 20 ppm, and two concentrations of phytase (120 and 180 ppm). Two animals per group were sacrificed weekly up to their adulthood. The uranium content in tibia was measured by neutron activation analysis. It was observed that the biokinetics of U does not change by administration of phytase, but the U concentration in the bones increased by up to a factor of 2, and in a nonexpected periodically time oscillating fashion. The concentration of uranium (ngU/g bone) is decreasing all along the animal life spanning period of 14-42 days, meaning that the skeleton mass is growing faster than the corresponding accumulation of uranium is. This last finding is interpreted as a possible interplay between two metabolic peculiarities, associated both with U transfer to (uptake), and U removed from (clearance) the bones, receptively.

267 DECOMPOSITION OF REACTOR-IRRADIATED SUBSTANCES: IMPLEMENTATION OF A NEW DATABASE B. Wierczinski. P. Bode, Delft University of Technology, Interfaculty Reactor Institute, Department of Radiochemistry, Mekelweg 15, 2629 JB Delft, THE NETHERLANDS

Neutron irradiation is applied worldwide to study the elemental composition of various samples and for radioisotope production. However, many materials may cause practical problems during and after irradiation, due to a pressure build up in e.g. quartz capsules. The pressure build up is caused by decomposition of organic samples or of samples which contain a considerable amount of crystal water. Eventually this can lead to an explosion during the irradiation, which is an unacceptable safety and health physics risk in the operation of a nuclear research reactor. At the research reactor of the Interfaculty Reactor Institute in Delft, a specially designed apparatus is used to measure the pressure in quartz capsules after irradiation in the reactor. This reactor is in operation since 1963 and a lot of information has since then been collected about a large variety of substances which decompose during irradiation. We think that the implementation of a database containing this type of information may be valuable to all users of a neutron irradiation facility. Measured pressures as a function of irradiation time, dose rate and mass and the format of the new database will be presented. The equipment will be described for measuring the pressure build-up.

268 A COMPARISON OF ENVIRONMENTAL RESTORATION SITE CHARACTERIZATION USING IN-SITU GAMMA SPECTROSCOPY, LABORATORY GAMMA SPECTROSCOPY, ICP-MASS SPECTROSCOPY AND SCANNING GPS/GAMMA SURVEYS. Mark Miller¹, Amir Mohagheghi², and Ken Baker³ (¹Weston Solutions, Inc; ²Sandia National Laboratories; ³Environmental Restoration Group, Inc.)

A radiologically contaminated Environmental Restoration (ER) site at Sandia National Laboratories was partially characterized using four different methods to determine the relative efficacy, accuracy and precision of each. The four methods were: 1) In-situ gamma spectroscopy, 2) Laboratory gamma spectroscopy, 3) Laboratory inductively coupled plasma mass spectroscopy (ICP-MS), and 4) Scanning GPS/Gamma Field Surveys. The sampling and analyses processes are discussed, along with the results of the investigation. Various strong points and weak points of each sampling and analysis approach for site characterization are discussed, especially as they relate to MARSSIM.