TR-500
COG-93-410

THE PERFORMANCE, ASSESSMENT AND RANKING OF CONTAINER DESIGN OPTIONS FOR THE CANADIAN NUCLEAR FUEL WASTE MANAGEMENT PROGRAM

by

J.L. Crosthwaite

ABSTRACT

A review of the engineering program to develop used-fuel disposal-container designs appropriate for achieving the disposal requirements and long-term radionuclide isolation objectives of the Canadian Nuclear Fuel Waste Development Program (CNFWMP) is presented. This program, conducted over a ten-year period, has resulted in the development of several container designs, and the identification and development of fabrication and inspection techniques that could be used for container construction, part of which would have to be conducted under remote, shielded conditions. Of the container designs identified, one has been selected as the reference for an engineering study for a conceptual used-fuel disposal centre, which will form part of the Environmental Impact Statement for the concept for disposal of Canada's nuclear fuel waste. Also described are other container concepts which, in a future optimization stage, could receive further study. Throughout the report, extensive reference is provided to publications that provide greater detail of the work described.

AECL Research
Whiteshell Laboratories
Pinawa, Manitoba ROE 1LO
1994