THE UNDERGROUND RESEARCH LABORATORY STATUS REPORT 1983 JANUARY 1 TO MARCH 31

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ABSTRACT

A major objective of the Canadian nuclear program is the safe management of used fuel waste, to ensure that there will be no significant adverse effects on man or the environment at any time. The objectives of the Canadian Nuclear Fuel Waste Management Program are to assess the concept that the disposal of radioactive wastes in deep, stable geological formations will achieve this objective and, if the concept is proven, to establish the capability for safely disposing of these wastes.

The geotechnical portion of this research and development program includes activities related to hydrogeology, geophysics, geology, rock properties and geomechanics. Activities in the various segments of the program are directed towards evaluating plutonic bodies, defining the undisturbed hydrogeology and rock-mass characteristics, and predicting long-term changes in these characteristics due to construction, loading and closure of an underground vault. The development of techniques for predicting the subsurface geological environment and modeling the geochemistry, hydrogeology and thermal rock mechanics of a rock mass is a key activity of the research program.

The mechanical, thermal, hydrogeological and geochemical properties of deep, stable, geological formations that are representative of a potential disposal vault are not generally of interest to other organizations because valuable minerals are not present in commercial quantities. Thus, to develop the necessary understanding of the properties and mechanisms that control the properties of large, intact rock masses, a suitably located underground research laboratory is being constructed.

This document is the second in a series of quarterly status reports being issued to provide current information on the underground research laboratory program.

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