



## Core Disassembly Facility

CNL's Core Disassembly Facility (CDF) located at the Chalk River Laboratories is used for severe accident analysis.

This one-of-a-kind Canadian facility was built to study the creep and sagging of a one-fifth-scale CANDU reactor fuel channel at a temperature of approximately 1,300°C. A stack of four channels can be tested simultaneously within the CDF. It has the ability to control the temperature profile of each individual channel through a sophisticated power distribution and control system and a laser sensor measures the creep sag at the mid-span of the fuel channel.

The CDF has an AutoMet polisher and a Vibromet final polisher, which can be used to polish samples and tubes before testing. With an active fume hood for the cutting and drilling of active  $UO_2$  pellets, this facility is useful in sample preparation and examination of fuel and fuel channel component metallography.

Staff in the Core Disassembly Facility have the experience to fabricate channel components, to perform tests at high temperatures ( $\sim 1,300^\circ\text{C}$ ) and are experts in material interaction at high temperatures. The CDF is mostly used for industry experiments to better understand and validate input parameters for computer modelling simulation.

CNL's Metallographic Services Laboratory and Fission Products Behaviour Laboratory are complementary laboratories which work in conjunction with the Core Disassembly Facility, providing analytical examination to understand component interaction. The adjoining laboratory to the CDF is the Microphotography Laboratory, which can measure the oxide layer thickness, tube cracking and strain measurements of samples.

