

## **John S. Hewitt Team Achievement Award – The International Tunnel Sealing Experiment**



The Tunnel Sealing Experiment (TSX) was the first in situ test and demonstration of full-scale repository seal components. The TSX was conceived and implemented by AECL's Waste Technology Division, in particular those at the Underground Research Laboratory (URL) who, in conjunction with international partners (JNC, ANDRA, and the USDOE), saw it successfully through its planning, construction, operation and decommissioning stages.

The TSX was constructed within the URL in a full-scale (4.2-m-wide by 3.5-m-high) tunnel, commencing in 1997. It was operated successfully for more than 5 years under the applied conditions of high groundwater pressure (4 MPa) and elevated temperature (65°C). The facility was decommissioned in 2004.

The success of the TSX required the efforts of a multidisciplinary and multinational team of engineers, scientists and technicians. In order to achieve such success, it was necessary to overcome a wide variety of technical challenges associated with a large-scale prototype simulation. With the successful construction and operation of the TSX, the technical viability of constructing tunnel seals in a repository environment was demonstrated, thereby building confidence in the long-term safety of nuclear fuel disposal in a deep geologic repository.

### **Purpose of the Award.**

The award aims at recognizing the recipients for “outstanding team achievements in the introduction or implementation of new concepts or the attainment of difficult goals in the nuclear field in Canada”.