

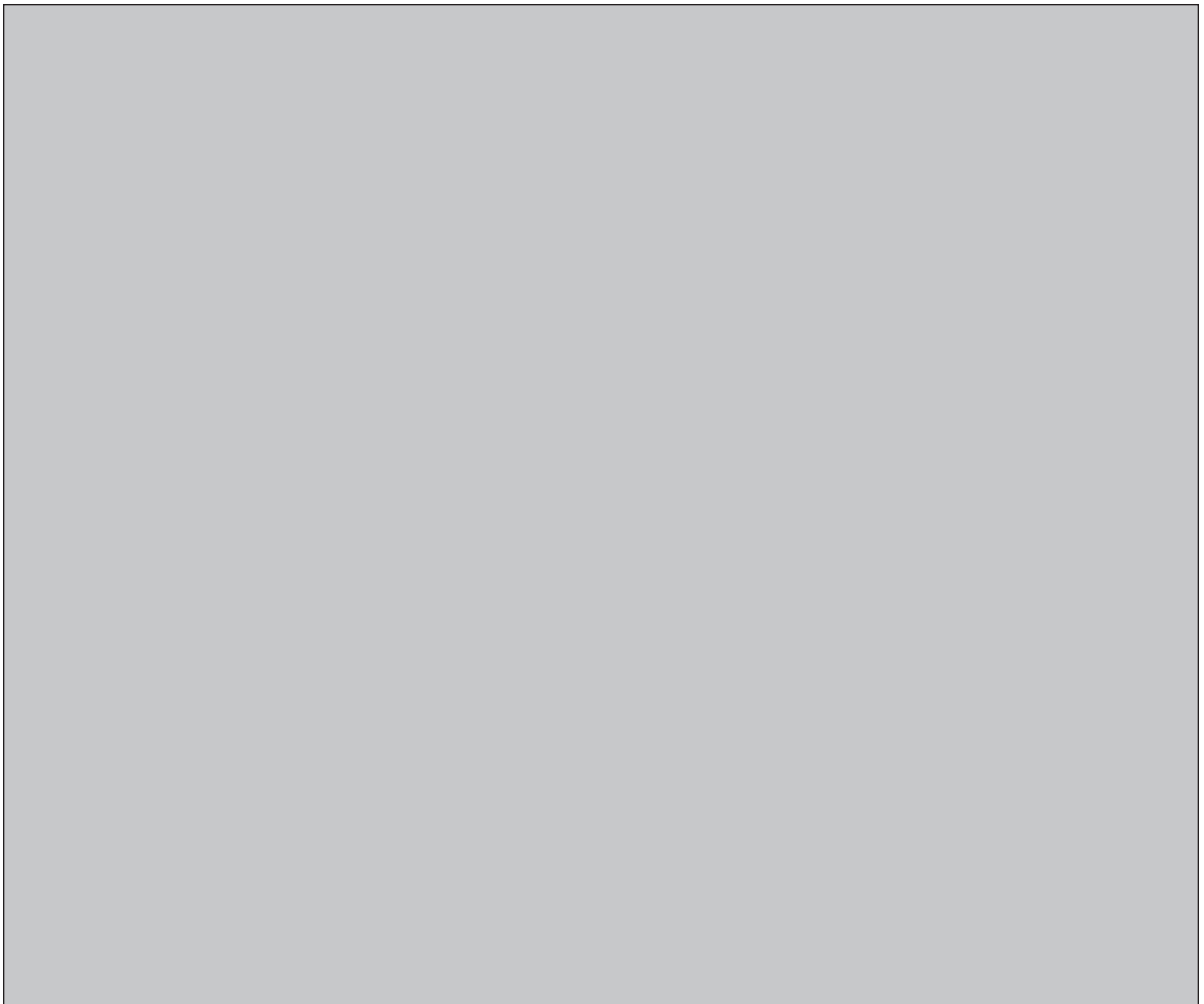
**NWMO BACKGROUND PAPERS**

**3. HEALTH AND SAFETY**

**3-3 STATUS OF CANADIAN AND INTERNATIONAL EFFORTS TO REDUCE THE SECURITY  
RISK OF NUCLEAR FUEL WASTE**

**EXECUTIVE SUMMARY**

**Science Applications International Corporation  
(SAIC Canada)**



## Summary

The Nuclear Waste Management Organization (NWMO) was established under the Nuclear Fuel Waste Act (NFWA) to investigate approaches for managing Canada's used nuclear fuel. The review of different management options involves issues ranging from the identification of societal, ethical and community implications, to specific issues of safety and security in transportation and storage of used nuclear fuel. The NWMO commissioned the preparation of a number of background papers on specific topics. One of these topics – the status of Canadian and international efforts to reduce the security risk of nuclear fuel waste – is addressed in this paper.

The background paper is divided into three parts. Part I contains the introduction, aim and scope, and a brief description of the generation and management of nuclear fuel waste in Canada. Part II contains the body of the paper providing a factual accounting of current Canadian and international efforts for reducing the security risk associated with nuclear fuel waste. Part III contains a glossary, references and a selected bibliography.

In developing the information contained in this background paper, SAIC Canada reviewed the following public record documents:

- a. Canadian legislation, regulation and policy;
- b. Canadian public threat assessment documents;
- c. International Atomic Energy Agency conventions, technical reports, technical documents, and information circulars; and
- d. US Nuclear Regulatory Commission regulations.

In all aspects of nuclear security, it is the licensee that is responsible for meeting or exceeding the requirements of the Nuclear Security Regulations. It is a condition of the licence issued to operate a Class I nuclear facility that all requirements of the Regulations are met.

The events of September 11, 2001 necessitated a review of the security arrangements that were in place at Class I nuclear facilities at the time. The Canadian Nuclear Safety Commission issued directions to the licensees to increase security arrangements. The licensees have complied with those directions.

Canada, in cooperation with the International Atomic Energy Agency, applies safeguards requirements as conditions of licences. The safeguards are implemented by the licensee. Safeguards requirements include accounting and reporting requirements, physical security measures and support for inspection and verification.

The Nuclear Waste Management Organisation is required to study the following three approaches for nuclear fuel waste management, at a minimum:

- a. deep geological disposal in the Canadian Shield;
- b. storage at nuclear reactor sites; and
- c. centralised storage either above or below ground.

All the above approaches are subject to regulation under the existing Nuclear Security Regulations since nuclear fuel waste is considered a Category II nuclear material. Indeed any approach to the management of nuclear fuel waste will be subject to the Nuclear Security Regulations as amended over time. Nuclear fuel waste management is also subject to IAEA safeguards.