SESSION 101
US NRC/US DOE/IAEA LLW Performance Assessment, the Safety Case (PRISM) and Long Term Monitoring Workshop

Christine Gelles
Director, Office of Disposal Operations
Office of Environmental Management
Chairperson, IAEA PRISM Project
Overview of IAEA PRISM Project

• PRISM

  – Practical Illustration and Use of the Safety Case Concept in the Management of Near-Surface Disposal
Safety Case

- Recognized in national and international documents

- Term used to refer to this broad range of arguments and activities that demonstrate and provide confidence in the safety of a facility and its management

- Some programs address these issues without using the term “Safety Case”
Safety Assessment

• Provides an important contribution to the safety arguments for a disposal facility

• Cannot, itself, adequately demonstrate the safety of the disposal system

• A holistic view is needed, with a broader range of arguments and activities to justify disposal of radioactive waste
Objective of the PRISM Project

- The current lack of a consistent interpretation of the safety case concept, particularly in respect of near-surface disposal, suggests that the PRISM project is timely.

- Focus on exchanging experience and communicating good practice concerning:
  - Components and expectations of the Safety Case and their evolution over the lifecycle of a near-surface radioactive waste disposal facility
  - Decision making at different stages in the facility lifecycle, using the Safety Case
Objective of the PRISM Project

• Predecessor Projects

  – NSARS
    • Safety Assessment of Near-Surface Radioactive Waste Disposal Facilities

  – ISAM
    • Improvement of Safety Assessment Methodologies for Near-surface Disposal Facilities

  – ASAM
    • Application of Safety Assessment Methodologies for Near Surface Waste Disposal Facilities
Objective of the PRISM Project

- Evolution of Related IAEA Projects
Scope of the PRISM Project

• The project is open to professionals from Member States who are from operating and supporting organizations or regulatory organizations concerned with assessing, improving and managing the safety of near-surface radioactive waste disposal facilities. Participants are expected to contribute actively to the project by taking part in plenary discussions and Task Group activities.

• Target Audience
  – Professionals from Member States who undertake technical activities related to the safety of near-surface radioactive waste disposal facilities
  – Technical specialists in issues related to safety assessment or the Safety Case
  – Those who responsible for the management / operation or regulation of waste disposal facilities
Scope of the PRISM Project

• All types of near surface radioactive waste disposal facility, including
  – Very Low Level Waste (VLLW) facilities
  – Low Level Waste (LLW) facilities
  – Intermediate Level Waste (ILW) facilities
  – Boreholes facilities
  – Shallow caverns
  – Mining and mineral processing waste facilities

• Both new and existing disposal facilities
Scope of the PRISM Project

- Participants provide experience
  - Wide range of facility designs, waste characteristics and regulatory frameworks, and different stages of development

- Considers the changing nature and use of the Safety Case over the lifetime of a disposal facility, specifically
  - The components and expectations of the safety case and their evolution over the lifecycle of a near-surface radioactive waste disposal facility
  - Decision making at different stages in the facility lifecycle, using the safety case
Structure of the PRISM Project

• Coordinating Group
  – Chairperson
  – IAEA Scientific Secretary
  – Task Coordinators

• Four Task Groups
  – Safety Case Understanding
  – Disposal Facility Design
  – Managing Waste Acceptance Criteria
  – Managing Uncertainties
PRISM Structure

• Dedicated Task Groups have been established to address specific issues. The Task Groups address the following areas of concern:
  – Task Group 1: Understanding the safety case
  – Task Group 2: Disposal facility design
  – Task Group 3: Managing waste acceptance
  – Task Group 4: Managing uncertainty

• In each of these tasks, the focus will be on the use of the safety case to take management decisions throughout the life cycle of the facility.

• A key project deliverable will be a project report based on the task group reports. In addition, a booklet, aimed at project managers responsible for implementing near-surface waste disposal, will be produced describing the use of the safety case in managing disposal at these facilities.
PRISM Project Timeline

• The project started with a plenary meeting in March 2009
  – Project proposal discussed and accepted
  – Task Groups formed
• Task Group technical meetings conducted in 2009-2010
• Second Plenary meeting held September 2010
  – Task Groups presented progress and worked toward Task Group deliverables
• Additional task group and technical meetings planned
• Third Plenary targeted for Fall 2011