

Demonstration of Safety of Decommissioning of Facilities Using Radioactive Material

Borislava Batandjieva¹, Patricio O'Donnell

*International Atomic Energy Agency,
Department of Nuclear Safety and Security,
Division of Radiation, Transport and Waste Safety
Wagramer strasse 5, P.O.Box 100, 1400 Vienna, Austria*

Abstract

The development of nuclear industry worldwide in the recent years has particular impact on the approach of operators, regulators and interested parties to the implementation of the final phases (decommissioning) of all facilities that use radioactive material (from nuclear power plants, fuel fabrication facilities, research reactors to small research or medical laboratories). Decommissioning is becoming an increasingly important activity for two main reasons – termination of the practice in a safe manner with the view to use the facility or the site for other purposes, or termination of the practice and reuse the facility or site for new built nuclear facilities. The latter is of special relevance to multi-facility sites where for example new nuclear power plants and envisaged. However, limited countries have the adequate legal and regulatory framework, and experience necessary for decommissioning.

In order to respond to this challenge of the nuclear industry and assist Member States in the adequate planning, conduct and termination of decommissioning of wide range of facilities, over the last decade the IAEA has implemented and initiated several projects in this field. One of the main focuses of this assistance to operators, regulators and specialists involved in decommissioning is the evaluation and demonstration of safety of decommissioning. This importance of these Agency activities was also highlighted in the International Action Plan on Decommissioning, during the second Joint Convention meeting in 2006 and the International Conference on Lessons Learned from Decommissioning in Athens in 2006.

The IAEA has been providing technical support to its Member States in this field through several mechanisms: (i) the establishment of a framework of safety standards on decommissioning and development of a supporting technical documents; (ii) the establishment of an international peer review mechanism for decommissioning; (iii) the technical cooperation projects at national and regional level (e.g. Europe); (iv) the international projects such as DeSa (Evaluation and Demonstration of Safety during Decommissioning of Nuclear Facilities) and its planned follow-up, R²D²P and Iraq project; as well as (v) through training and education of specialists working in the field of decommissioning and (vi) facilitation of the exchange of knowledge and experience between all Member States (e.g. Athens conference in 2006, International Decommissioning Forum, Annual Forum for Operators and Regulators in Decommissioning).

The ongoing cooperation with Member States shows that the areas of specific interest for the Member States remain the following: the relevant safety criteria and safety assessment methodology to be applied to decommissioning; application of the graded approach in the development and review of safety assessments or decommissioning plans; evolution of the decommissioning plan and the supporting arguments through the decommissioning project.

This paper presents a summary of the recent IAEA activities and projects on demonstration of safety during decommissioning and the lessons learned to date.

¹ To be presented by B. Batandjieva: B.Batandjieva@iaea.org

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