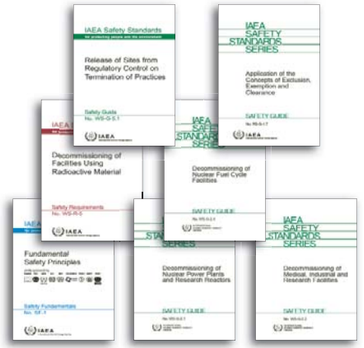
International Safety Standards

As part of its statutory function, the IAEA has been developing safety standards related to decommissioning

- Decommissioning of all types of facilities.
- Release of sites from regulatory control.
- Release of material from regulatory control.
- Safety assessment.
- Management of contaminated scrap metal.

IAEA safety standards are revised on a regular basis in accordance with the experience of Member States and good practices.



Supporting Safety, Technical Reports and Other Publications

The IAEA also assists operators, regulators and other specialists from Member States with detailed recommendations and examples of state of the art practices from decommissioning projects in the areas of:

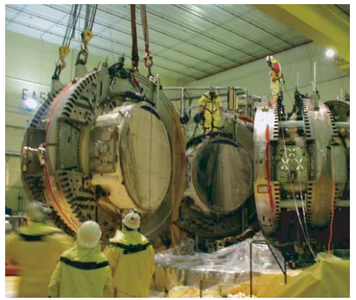
- Characterization of facilities.
- Selection of decommissioning strategies.
- Monitoring of materials and sites for compliance with release criteria.
- State-of-the-art decommissioning technologies.
- Cost estimates and financial mechanisms.
- Planning, organization and management of decommissioning.
- Development and review of safety assessment.
- Management of decommissioning waste.
- Decommissioning of structures, systems and components.

International Action Plan on Decommissioning

- To establish the IAEA as the international focal point to assist all Member States with the planning, undertaking and termination of decommissioning in accordance with international safety standards and state of the art recommendations;
- To focus future IAEA activities on decommissioning, addressing key areas and developing the international nuclear safety regime in the field of decommissioning.

The main areas of ongoing and future activities are:

- Governmental roles and responsibilities for decommissioning.
- Decommissioning strategies.
- Independent review of decommissioning of facilities.
- Decommissioning of small facilities.
- Safety standards for decommissioning.
- Management of material and sites.
- Funding and cost estimation.
- Transfer of sustainable technologies
- Maintaining competence in decommissioning.
- Lessons learned from decommissioning as a feedback to improve the design of new facilities.



For further information:

International Atomic Energy Agency
P.O. Box 100
Wagramer strasse 5
1400 Vienna
Austria
Fax; +43-1-26007
Tel.: +43-1-26000
http://www.iaea.org
decommissioning@iaea.org

Decommissioning of Nuclear Facilities: A Major Undertaking

Worldwide some 100 power reactors, 250 research reactors and many other fuel cycle facilities are already or will in the near future be decommissioned. Decommissioning is now an industrial scale activity in which adequate planning, funding, regulatory control and measures to ensure safety and cost–effectiveness during and after decommissioning have become increasingly important. The total decommissioning liability for reactors; fuel cycle facilities and research activities over the next 50 years is estimated at approximately $1000 billion.

Global Nuclear Safety Regime applied to Decommissioning

The IAEA objective is to apply a global nuclear safety regime to decommissioning and to assist Member States in termination of practices and release of facilities and activities from regulatory control by using appropriate technologies in a safe, timely and cost effective manner.

IAEA
International Atomic Energy Agency

M E E T I N G M E M B E R S T A T E N E E D S

Assisting Decommissioning Projects

IAEA Technical Cooperation Framework

Through its technical cooperation programme, the IAEA assists its Member States in the field of planning, implementation and regulation of the decommissioning of all types of nuclear facilities. This assistance is provided according to the needs of Member States, the radiological and physical status of the facility and the stage of decommissioning activities.
It includes:

- Development and review of legal and regulatory framework.
- Development and review of preliminary or detailed decommissioning plans.
- Development of cost estimates for decommissioning.
- Establishment of decommissioning databases.
- Selection and utilization of adequate technologies.
- Establishment of decommissioning infrastructure.
- Technical and managerial training for key staff.

The Tammuz-2 Research Reactor, Iraq

Decommissioning of nuclear powered submarines in the Russian Federation

Decommissioning of the IRT-M research reactor, Georgia

The success of decommissioning relies on adequate and early planning and involvement of all interested parties

International Framework

The IAEA also provides assistance to Member States on the application of safety standards for decommissioning through the coordination of international projects.
These projects address specific areas of decommissioning (e.g. technologies, safety assessment, application of a graded approach and regulatory review) or the decommissioning of facilities with different complexities and hazards.

- Evaluation and Demonstration of Safety during Decommissioning (DeSa project).
- Evaluation and Decommissioning of Former Facilities that Used Radioactive Material in Iraq.
- Co-ordinated Research Project on Innovative and Adaptive technologies in Decommissioning of Nuclear Facilities.
- Research Reactor Decommissioning Demonstration Project (R2D2P).
- Decommissioning Planning for the BN-350 Reactor in Kazakhstan.

Networking

Exchange of Knowledge, Experience and Information

The exchange of experience and knowledge between all Member States is achieved through technical meetings, thematic workshops, international conferences like the International Conference on Lessons Learned from the Decommissioning of Nuclear Facilities and the Safe Termination of Nuclear Activities, held in Athens, Greece, in December 2006.

The IAEA has recently launched the International Decommissioning Network to assist in the strategic planning and coordination of technology, safety and security in decommissioning among Member States. It will be based on ongoing decommissioning projects involving different facilities and technologies used.

Learning from experience and working towards harmonized approaches for planning, implementation and regulation of decommissioning are key to ensuring an adequate level of safety and the effective use of resources.

Training and Building Competence

The IAEA organizes annually about ten national or regional training events related to decommissioning. The main areas covered are:

- Radiological characterization.
- Legal and regulatory framework.
- Organization and management of decommissioning.
- Optimization of decommissioning .
- Decommissioning planning.

The Joint Convention
45 contracting parties (April 2007)

Coordination and Cooperation with International Organizations

The IAEA works closely with other international organizations in a wide range of areas related to decommissioning, such as the development of recommendations on the clearance of material and monitoring of potentially contaminated scrap metal; organization of international conferences and topical meetings; review of national decommissioning programmes; development of harmonized regulatory requirements for decommissioning in Europe; and stakeholder involvement. Some of the organisations are the:

- Contact Expert Group for International Radioactive Waste Projects in the Russian Federation (CEG)
- UN Economic Commission for Europe (UNECE).
- European Commission (EC).
- Nuclear Energy Agency (NEA) of the OECD.
- Western European Nuclear Regulatory Association (WENRA).
- World Nuclear Association (WNA).

Providing Services

The Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management

The Joint Convention is the first specific, international, legally binding instrument related to the safe management of radioactive waste. It encourages the Contracting Parties to take the appropriate steps to ensure the safe decommissioning of their facilities. Every three years, Contracting parties present their national programme to their peers during a review meeting. Contracting Parties exchange information on good practices and help each other to improve safety. The third review meeting will take place in May 2009.
The IAEA assists in the effective implementation of the Joint Convention by organizing the review meetings of Contracting Parties and promoting the convention through regional workshops and meetings, newsletters, brochures and a web page (http://www-ns.iaea.org/).

The success of decommissioning relies on adequate and early planning and involvement of all interested parties

The Joint Convention
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Appraisal Services of Decommissioning Planning and Performance

The IAEA offers services for independent reviews of activities associated with the planning and undertaking of the decommissioning of nuclear facilities. These reviews aim to assist regulators and operators from all Member States in decommissioning of nuclear facilities in accordance with internationally agreed safety standards and state of the art practices.

- Decommissioning legal and regulatory framework.
- Decommissioning strategies.
- Decommissioning plans.
- Decommissioning technologies.
- Financial mechanisms.

Use of nibblers in segmenting nuclear components