

ENRESA INTERNATIONAL COOPERATION

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The Empresa Nacional de Residuos Radiactivos, S.A. (ENRESA) was set up in 1984 with the mandate to undertake responsibility for radioactive waste management in Spain. From the very beginning, ENRESA was fully aware of the fact that international cooperation plays a very important role in the development of national programmes. Aspects such as the setting up of international databases, the development and validation of models or site characterization techniques, require such enormous efforts and amounts of resources that they could hardly be undertaken individually. Furthermore, joint participation in research, development and demonstration projects reinforces the level of confidence, not only in the decision-making process but also in the technologies, techniques and practices used. ENRESA's participation in the international context is largely defined, on the one hand, by the needs arising from its technical programme, as reflected in the General Radioactive Waste Plan and in the Research and Development Plan, and on the other by the need to support Spanish governmental institutions in their participation in inter-governmental forums.

The formula for cooperation varies according to needs, this cooperation generally being accomplished by means of bilateral agreements with other institutions having similar competences or by participating in the programmes of inter-governmental organizations. In particular, ENRESA has reached cooperation agreements with most of the agencies with similar responsibilities in other countries and participates very actively in the programmes of the European Union, the Nuclear Energy Agency (NEA/OECD) and the International Atomic Energy Agency (IAEA).

INTRODUCTION

Spain, with an installed nuclear power of 7.5 GWe and more than a thousand administratively authorized installations using radioactive isotopes for medical, industrial and research purposes, is a country which generates radioactive wastes to a total estimated amount of some 200,000 m³ of low and intermediate level wastes, including those arising from the dismantling of facilities, and some 6,000 tons of irradiated nuclear fuel produced by the nuclear power plants during their operating lifetime, which is assumed to be 40 years.

Since 1984, the responsibility for managing these wastes and for dismantling nuclear installations has been commissioned to the Empresa Nacional de Residuos Radiactivos, S.A., which, working within the legal and institutional framework established and in compliance with the policy and strategy to be applied and set out in the General Radioactive Waste Plans (GRWP's) periodically approved by the Government, attempts to minimize the potential risk of such wastes, adopting the most appropriate solutions for this purpose. Generally speaking, the technical and socio-political aspects of radioactive waste management are framed by a common set of problems in the international context. The need for technically and socially acceptable solutions requires the deployment of efforts in research, development and communication which could not be assumed in their entirety by any one country individually, even those having a proven technological capacity. In

this respect, international cooperation is increasingly seen as being a fundamental element in the different national programmes. ENRESA obviously cannot but be a part of this situation, and consequently participates actively in both the international cooperation programmes carried out within the framework of the international organizations and in contacts and actions with companies and organizations in other countries, depending on its needs.

COOPERATION OBJECTIVES AND CRITERIA

Since its creation in 1985, ENRESA has been aware of the need to take as a point of reference for its activities those actions already undertaken by other countries in Spain's economic and social sphere, and to participate in the numerous projects for technical research, development of standards, etc. performed within the framework of supranational organizations or planned by each country and open to international collaboration as a way of increasing current technical knowledge or achieving better economies in relation to the resources invested.

In this context, and in keeping with the basic principal of facilitating the company's tasks, the main objectives of ENRESA's international activities are as follows:

- Gaining access to a wide corpus of information facilitating decision-making.
- Comparing and contrasting its experiences in radioactive waste management with those

of other countries having similar programmes, through the joint development of research projects providing mutual advantages from the results obtained and/or allowing more economical solutions to be applied.

- Contributing to the bringing into harmony of the criteria, standards and practices used in current management or which may go to form the doctrine for the construction and operation of future spent fuel disposal facilities, the dismantling of nuclear power plants, etc.

Consequently, ENRESA participates in all the initiatives launched by the International Organizations and other countries managing radioactive wastes, as long as they meet the following criteria:

- Their objectives coincide with issues in relation to which there are technological shortcomings.
- The actions proposed complement those contemplated in the corresponding ENRESA R&D Plans and may be integrated into them.
- They contribute to the establishment of regulatory standards in areas in which these are not available at national level, or to promote development of such standards.
- Their culmination provides technical support for the Spanish authorities.
- They serve for the sharing of experiences in the fields of decision-making and of public information.
- Their performance meets the aforementioned criteria and their performance budgets may be shared.

FRAMEWORK FOR COOPERATION

The management of radioactive wastes up to their definitive disposal (final elimination) is an issue common to all those countries which generate electricity by nuclear means, an issue which, in view of the technical, economic and social problems involved, transcends on most occasions the dimension of each State.

ENRESA participates in the two major world organizations which work specifically in the nuclear area: the International Atomic Energy Agency (IAEA) and the Nuclear Energy Agency of the Organization for Economic Cooperation and Development (NEA/OECD), and participates also in all those activities relating to radioactive waste management which are promoted by the corresponding departments of the Commission of the European Union.

Furthermore, one of ENRESA's strategies in the field of international cooperation is bilateral collaboration with its counterpart organizations in different countries. These relationships are organized by way of Collaboration Agreements and through Project Development Contracts in the case of specific actions.

Union and destined to subsequently provide support for specific national developments.

- To optimize the acquisition of scientific and technological knowledge in specific areas of interest to various of the Union's member countries, on the basis of the similarity of disposal concepts or of the analysis and resolution of the problems posed.
- To verify and spread nationally developed technologies and methodologies through their application in international cooperation projects.
- To directly obtain scientific and technological knowledge making it possible to carry out experiments in underground installations and laboratories not currently existing in Spain.
- To participate in decision-making in the main international forums, on the basis of the efficiency and knowledge demonstrated by the international cooperation projects in which ENRESA and its contractors or support organizations have participated.
- To complete the ENRESA R&D programme, with advantage taken of the financing opportunities offered by the Community.

Community financing amounting to around 40%.

With a view to ensuring the availability of knowledge and the capacity to track the programmes, and thus be able to integrate them efficiently into its own R&D programmes, ENRESA participates as an expert, providing support for the Ministry of Industry and Energy (MIE), on the Programme Coordination Committee (PCC), which advises the European Commission in relation to the development of R&D Framework Programmes. Likewise, ENRESA participates in the project coordination groups, this allowing the Company to maintain suitable control and tracking of both development and results. In addition, it participates, along with the Centre for Energy, Environmental and Technological Research (CIEMAT), in the Laboratory Network, an association whose mission is to promote and facilitate collaboration in development, application and standardization for verification of the quality of waste packages. Another area of cooperation within the framework of the European Union is through participation in the Action Plan, directed by Directorate General XI (The Environment, Nuclear Safety and Civil Defence), the generic objectives of which are the development of technical cooperation at Community level in relation to the definitive or long-term disposal of radioactive wastes, the development of coordinated actions for this purpose and the development of technical cooperation with third party countries, especially with those of Eastern Europe and the members of the Community of Independent States. This cooperation materializes through participation on the Advisory Committee for Programme Management (ACPM), on which ENRESA participates jointly with the MIE, as well as in the task forces set up for the development and tracking of the Plan.

Technical assistance to the Countries of Eastern Europe occurs within the framework of the PHARE and TACIS programmes, managed by the European Commission's Directorate General I (External Relations), in which ENRESA participates either directly or through the CASSIOPEE consortium (Consortium d'Assistance Operationelle aux Pays de l'Europe de l'Est). This consortium was created at the beginning of 1993 as a European Economic Interest Grouping by six

SUPRANATIONAL COLLABORATION

INTERNATIONAL ATOMIC
ENERGY AGENCY (IAEA)

EUROPEAN UNION

NUCLEAR ENERGY
AGENCY (NEA/OECD)

ENRESA

European Union

ENRESA's participation in the Community's programmes relates fundamentally to the following: the Research and Development programmes promoted by Directorate General XII (Science, Research and Development), the Community Action Plan developed by Directorate General XI (The Environment, Nuclear Safety and Civil Defence) and the programmes of technical assistance for the Eastern Countries (PHARE and TACIS), carried out through Directorate General XI (External Relations).

One of ENRESA's concerns in defining its R&D programmes has been to combine its activities with international programmes and developments in those areas in which the two are complementary, and to contrast the results obtained with those of other countries. Thus, ENRESA participates in the EU programmes with the following objectives:

- To optimize the acquisition of basic scientific and technological knowledge in areas of radioactive waste management common to the different member countries of the

Special attention might be brought to the high degree of integration achieved through participation in specific radioactive waste management, nuclear installation decommissioning and radiological protection programmes during the third Framework Programme (1990-1994), as well in the Nuclear Fission Safety Programme included in the fourth such programme (1994-1998). Suffice it to say, by way of an example, that during the third programme ENRESA participated directly or indirectly in 36 projects, with a total cost of some 5,700 million pesetas, with the European Union financing approximately a third, and that in the fourth ENRESA has participated in 27 projects with a cost of 900 million pesetas, the

PARTICIPATION IN THE 3RD AND 4TH EUROPEAN UNION R&D FP

PROGRAMME	N° OF PROJECTS	TOTAL COST (Mill. Pts.)	CONTRIBUTIONS			YIELD (Mill. Pts.)
			ENRESA	EU	OTHERS	
3 rd (1990-1994)	36	5,700	29%	33%	38%	900
4 th (1994-1998)	27	9,000	12%	38%	50%	830

PARTICIPATION IN THE PHARE AND TACIS PROGRAMMES

PROJECT/STUDY	PROGRAMME	PERIOD
- Evaluation of the radioactive waste management situation in Bulgaria	PHARE	1993
- Regional study for evaluation of the situation and the establishment of priorities in PHARE countries	PHARE	1993-1994
- Definition of a radioactive waste management scheme in Ukraine	TACIS	1996
- Support to Hungary for definition of options and candidate sites for the disposal of low and intermediate level radioactive wastes	PHARE	1995-1996
- Improvement of the installations for the treatment and disposal of radioactive wastes from minor producers in the Moscow area	TACIS	1995-1996
- Assistance to the Nuclear Safety Council for a project for collaboration with the Russian Regulatory Organization in the area of acceptance criteria	TACIS	1996
- Assistance to the European Commission in the definition of projects, specifications and evaluation of bids within the PHARE programme	PHARE	1996-1997
- Assistance to the Czech Republic for the creation of the Radioactive Waste Management Agency	PHARE	1997-1998
- Evaluation of the situation in and the needs of Slovenia	PHARE	1997-1998

International Atomic Energy Agency (IAEA)

The IAEA is an autonomous intergovernmental organization, created in 1956, which operates under the aegis of the United Nations. It provides its member States with advice and technical assistance on developments in the use of nuclear energy and on the health, safety and environmental aspects of its application. The Agency also provides grants and technical assistance for developing nations, organizes training courses and scientific meetings and issues technical publications. The IAEA has been particularly active in the field of radioactive waste management, sponsoring several programmes, conferences and publications in this area. The Waste Management Assessment and Technical Review Programme, for example, was launched in 1989. The objective of this Programme is to draw up objective reports on the radioactive waste management programmes of its member States, in response to requests from these members. The IAEA took a major step in 1991 when it started the Radioactive

Waste Safety Standards (RADWASS) Programme, aimed at drawing up a full range of standards and guides for the management of radioactive waste, based on international consensus, that would complete the existing national standards. The Agency also constitutes an important forum within which Conventions devoted to different nuclear-related aspects are developed. Of particular importance is the Convention on the Safety of the Management of Spent Fuel and Radioactive Waste, which was approved at the end of 1997, following two years of meetings of an open-ended group of technical and legal experts of the member countries.

ENRESA participates very actively in the programmes of this Agency, in particular in the RADWASS Programme, where it assists the Agency by providing a cost-free expert for the development of this important initiative and by participating, along with the CSN, on the Waste Safety Standards Advisory Committee (WASSAC), as well as in the Group for Principles and Criteria.

ENRESA also cooperates with the Agency in assisting developing countries, participating in expert missions to these countries and receiving scientific visits and experts for training from these countries. ENRESA also took part, in support of the Spanish authorities, in the Group of technical and legal experts for the development of the Convention on the safety of spent fuel and radioactive waste management.

European agencies responsible for the management of radioactive wastes in their respective countries (ANDRA in France, COVRA in the Netherlands, DBE in Germany, ENRESA in Spain, NIREX in the United Kingdom and ONDRAF in Belgium), with the objective of providing technical assistance to the Eastern Countries in the development of radioactive waste management systems. ENRESA actively participates in the activities of the Consortium, in which it is the fundamental leader of the European Commission advisory project for organization of the approach to be adopted within the PHARE programme in the area of radioactive wastes. Also worthy of mention is the fact that during the period 1995-1996, ENRESA led the project for assistance to the Moscow region's RADON Association, for evaluation and proposals for improvement to the installations for the treatment and disposal of radioactive wastes from minor producers, and that it currently leads the project for assistance to the Czech Republic, for the creation of the agency responsible for radioactive waste management in that country. The following table shows a summary of the projects undertaken within the framework of these programmes.

Nuclear Energy Agency (NEA/OECD)

The NEA was created in 1958, but received its present name in 1972. The primary objective

of the NEA is to promote cooperation among the governments of its member countries in furthering the development of nuclear energy as a safe, environmentally acceptable and economic energy sources.

The NEA encourages the harmonization of national regulatory policies and practices with particular reference to the safety of nuclear installations, the protection of mankind against ionizing radiations and the preservation of the environment, radioactive waste management and nuclear third-party liabilities and insurance.

ENRESA participates in programmes devoted to the exchange of technical and scientific information in the field of radioactive waste management and the decommissioning of nuclear installations. In particular, it participates along with the MIE and CSN on the Radioactive Waste Management Committee (RWMC), as well as in the Performance Assessment Advisory Group (PAAG) and Site Evaluation and Demonstration Group (SEDE). It also participates on the Nuclear Development Committee (NDC) and its related ad-hoc groups dealing with the costs of radioactive waste management and the Partitioning and Transmutation of long-lived radionuclides. It is also a member of the Liaison Committee of the Decommissioning Programme, participating in the exchange of technical information regarding decommissioning projects through the Technical Advisory Group (TAG).

It also participates on an ad-hoc basis on Technical Committees and in Advisory Groups for the development of specific reports relating to different aspects of radioactive waste management.

BILATERAL COOPERATION

At bilateral level, ENRESA has established collaboration agreements with the majority of the agencies of other countries having

areas of competence similar to its own, as well as with other organizations with which it collaborates in specific aspects of its programme. These collaboration agreements allow ENRESA to have available exhaustive information on the approaches and evolution of the programmes of other countries, this being fundamental for both the decision-making process and for contrasting and strengthening confidence in the solutions adopted. The following table lists these agreements.

ENRESA COLLABORATION AGREEMENTS

COUNTRY	ORGANIZATION
Argentina	CNEA : National Atomic Energy Commission
Croatia	APO : Hazardous and Radioactive Waste Management Agency
France	ANDRA: Radioactive Waste Management Agency CEA : Atomic Energy Commission
Japan	JNFL : Japan Nuclear Fuel Limited
Sweden	SKB : Radioactive Waste Management Agency
Switzerland	NAGRA: Radioactive Waste Management Agency
United Kingdom	NIREX : Radioactive Waste Management Agency
USA	OCRRWM (DOE) : Office of Civilian Radioactive Waste Management



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