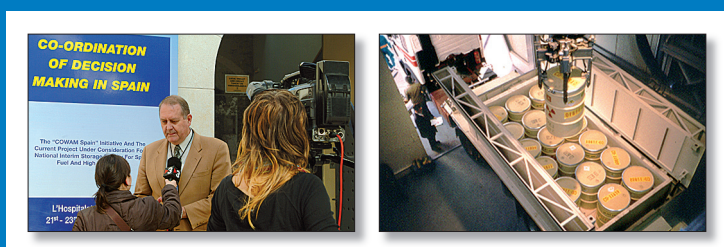


Radioactive Waste Management in Spain: Co-ordination and Projects

FSC Workshop Proceedings
L'Hospitalet de l'Infant, Spain
21-23 November 2005



Radioactive Waste Management

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NUCLEAR ENERGY AGENCY
ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

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FOREWORD

The sixth workshop of the OECD/NEA Forum on Stakeholder Confidence (FSC) was hosted by ENRESA, the Spanish agency responsible for the management of radioactive waste and the dismantling of nuclear power plants, and the Council of Nuclear Safety (CSN), with the support of the Association of Spanish Municipalities in Areas Surrounding Nuclear Power Plants (AMAC). The workshop took place at L'Hospitalet de l'Infant, Catalonia, Spain, on 21-23 November 2005.

The main theme of the workshop was the co-ordination of decision making today in Spain, with particular focus on COWAM-Spain, an initiative which is examining the decision-making processes involved in the siting of a centralised interim storage facility for high-level waste. COWAM-Spain looks at the involvement of local stakeholders, the relationship between national and local levels of decision making, and the long-term sustainability of decisions.

Fifty-four registered participants from fourteen countries attended the workshop. Around half of the participants were Spanish stakeholders; the others came from FSC member organisations or other institutions in OECD countries. Amongst the participants were representatives of municipal governments, civil society organisations, parliament, government agencies, private companies and international organisations as well as private citizens, consultants and academics.

The three-day event began with an overview of nuclear energy in Spain, followed by a site visit to the municipality of the decommissioned Vandellòs-I nuclear power plant. The latter also included a visit to the “nursery of entrepreneurs” economic development zone, a project aimed at helping new businesses to launch successfully. Workshop participants then explored the central theme and questions at hand through presentations by invited speakers and roundtable discussions amongst local stakeholders and international delegates.

These proceedings include a summary of the discussions and presentations which took place at the workshop and the community visits, an international perspective by the NEA Secretariat on the main lessons of the workshop and the full texts of the presentations given.

Acknowledgements

The FSC gratefully acknowledges the work of the members of the programme committee:

Mariano Vila D'Abadal	AMAC
Carmen Ruíz López	CSN
Jorge Lang-Lenton	ENRESA
Claudio Pescatore	OECD/NEA

as well as OECD/NEA consultants Anna Vári who prepared the Summary and International Perspective, and Claire Mays as editor of these proceedings.

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Main Workshop

Involving the Local Authorities

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SUMMARY

Introduction

Theme and Description of the Event

The “COWAM-Spain” project examines bottom-up approaches to decision making on siting in Spain and aims at defining a reference approach. The project is spearheaded by the association of the Spanish nuclear-affected municipalities (AMAC). The workshop focused on the inclusive methodology for decision making being developed within “COWAM-Spain”. This methodology would be applied to the siting of the currently-proposed national interim storage facility for spent fuel, which is a central issue nowadays in Spain.

The sixth workshop of the OECD/NEA Forum on Stakeholder Confidence was hosted by the Spanish Nuclear Waste Management Company (ENRESA) and the Council of Nuclear Safety (CSN), with the support of the Association of Spanish Nuclear Municipalities (AMAC); it took place in L’Hospitalet de l’Infant (Catalonia, Spain), 21-23 November, 2005. The workshop started with a half-day session in L’Hospitalet, aimed at giving a general introduction to the Spanish context. This was followed by a visit to the Vandellòs-I nuclear power plant and the municipality. After the community visits the workshop continued with three half-day sessions in L’Hospitalet.

Fifty-four registered participants from fourteen countries attended the workshop. About half of the participants were Spanish stakeholders; the rest came from FSC member organisations or other institutions in OECD countries. The participants included representatives of municipal governments, civil society organisations, parliament, government agencies, private companies and international organisations, as well as private citizens, consultants and academics.

The three-day meeting was structured as follows:

- Day 1.
 - The morning was devoted to introductory presentations, focusing on the Spanish institutional background and past case histories related to nuclear energy and radioactive waste management.
 - The afternoon: Visit of the municipality. The visit to the site of Vandellòs-I offered an opportunity for delegates to learn about the decommissioning and dismantling project of this nuclear power plant. The visit to the economic development zone of the municipality, particularly the “nursery of entrepreneurs” – a municipal project for helping new businesses get off the ground – helped understand the efforts aimed at invigorating the local economy.

- Day 2 and the morning of day 3.

They were devoted to the central theme of the workshop: how decision making about radioactive waste management is co-ordinated today in Spain. Invited plenary speakers introduced the COWAM-Spain initiative and expounded its three main themes:

(i) democracy and participatory systems for the local level; (ii) the interplay between the national and local level; and (iii) long-term governance. Presentations provided a background to subsequent round table discussions that included both local stakeholders and international delegates.

- Day 3 afternoon.

It was devoted to the feedback by two thematic rapporteurs. They evaluated the meeting from two distinct perspectives: that of the policy-making approach, and of participatory decision making.

The present Summary gives an overview of the presentations and discussions that took place at the workshop and the community visit. The structure of the Executive Summary follows the structure of the workshop itself. Complementary to this Executive Summary, and also provided with this document, is the NEA Secretariat's reflection highlighting from an international perspective some of the lessons to be learnt.

General Introduction to the Spanish Context

Introductory presentations in Part 1 focused on the legislative background, the institutional framework, and the key players in radioactive waste management in Spain. In Part II, two case examples were presented, regarding an earlier attempt to site a deep geological disposal facility for HLW and on the dismantling of the Vandellòs-I nuclear power plant, respectively.

Welcoming session

Takanori Tanaka, Deputy Director General of the OECD Safety and Regulation Division opened the workshop. He expressed his thanks to the Spanish hosts, ENRESA, CSN, AMAC, and the municipality of L'Hospitalet. He highlighted the activities of OECD/NEA and particularly the FSC concerning communication with stakeholders of radioactive waste management, where citizens are treated as partners. Mr. Tanaka pointed out that the main objective of FSC workshops is to better understand similarities and differences between societal aspects of radioactive waste management in various countries and to share international experiences "on the ground".

Janet Kotra, vice-chair of the FSC and Head of the HLW Public Outreach Team of the US Nuclear Regulatory Commission, welcomed the audience on behalf of the FSC. She expressed a profound appreciation for the fact that, over the years, FSC workshops have developed to an excellent opportunity for learning, where participants listen to each other with great respect and empathy. Ms. Kotra emphasised that the main objective would be to understand and address factors that affect stakeholder confidence. She expressed her hope that – similarly to the previous ones – this meeting would again be a satisfying experience for all parties.

Josef Castellnou Barceló, Mayor, Municipality of L'Hospitalet i Vandellòs, welcomed participants on behalf of the host community. He briefly described the settlements of the municipality that occupy a total area of approximately 100 km². First he reviewed the socio-economic characteristics of his and neighbouring communities and, within this, the importance of the nuclear industry. Tourism is another activity playing a very important part, thanks partly to the scenic beauty of the area, its unique landscape, e.g. the proximity of the Ebro River delta, and partly to the historic traditions of the region.

The Spanish Nuclear and Institutional Scene

Carlos Villota, Director of Nuclear Energy of UNESA gave an overview of the Spanish nuclear industry, the utility companies and the relevant institutions. Companies of the nuclear industry include firms that produce heavy components or equipment (ENSA), manufacturers of nuclear fuel (ENUSA), engineering companies, the National Company for Radioactive Waste Management (ENRESA), and nuclear power plants (nine units at seven sites). Nuclear energy is a significant component of the energy mix in Spain: 11% of all energy produced in Spain is of nuclear origin, whilst the share of nuclear energy in the total electricity generation is approximately 23%.

The five main players of the energy sector that provide for the vast majority of electricity production, distribution, and supply have formed the Spanish Electricity Industry Association (UNESA). The latter carries out co-ordination, representation, management and promotion tasks for its members, as well as the protection of their business and professional interests. In the nuclear field, UNESA through its Nuclear Energy Committee co-ordinates aspects related to nuclear safety and radiological protection, regulation, NPP operation and R&D.

Regarding the institutional framework of the nuclear industry, ENSA, ENUSA and ENRESA are controlled by the national government through the Ministry of Economy and Finance and the Ministry of Science and Technology. All companies of the nuclear industry are licensed by the Ministry of Industry, Tourism and Trade (MITYC), while the regulatory body is the Nuclear Safety Council (CSN). It is noteworthy that CSN is independent of the government, as it reports directly to Parliament.

Nuria Prieto, legal advisor to ENRESA presented the main components of the Spanish legal and institutional framework with regard to site selection and licensing of nuclear facilities. The licensing process is governed by two key regulations, the Regulation on Nuclear and Radioactive Facilities (RINR) and the Royal Decree on Environmental Impact Assessment (EIA Decree). According to RINR, nuclear facilities require a number of permits and authorisations for their operation, including a preliminary authorisation (this recognises the suitability of the site selected), the construction permit, the operating permit, the authorisation for modification, and the decommissioning permit. All these permits and authorisations are issued by the Ministry of Industry, Tourism and Trade (MITYC) upon previous certification by the Nuclear Safety Council (CSN). The EIA Decree instructs that an EIA be submitted by the applicant to the Ministry of Environment (MIMA), which issues an EIS before any permit or authorisation is granted by MITYC.

Ms. Prieto set forth the procedures of public information prescribed by the above regulations during preliminary authorisation. The Regulation on Nuclear and Radioactive Facilities (RINR) requires the publication of an announcement indicating the objectives and the main characteristics of the facility and a 30-day period of comment. Similarly, the EIA Decree prescribes a period of public comment to the EIA. In addition, it is required that an Information Committee be operational during the construction, operation and dismantling of nuclear facilities, the mission of which is to inform and consult stakeholders. Members of an Information Committee should include – but not be restricted to – representatives of national government agencies (e.g. MITYC, CSN, MIMA), affected regional authorities and municipalities, and the operator of the facility.

José Manuel Redondo, Assistant to the Deputy Director for Nuclear Energy, MITYC, summarised the current status of Spain's General Radioactive Waste Management Plan. The Plan forms the basis for a national radioactive waste management policy and decommissioning strategy. It is prepared by ENRESA, submitted to MITYC, and if agreed, it is forwarded to the national government for approval with subsequent notification to Parliament. The planning horizon taken into

account goes from 1985 to 2070. The National Plan is updated periodically; the current (5th) Plan was approved in 1999. The most important element of the current strategy is the development of a centralised interim HLW storage facility by 2010. This might be complemented with the construction of on-site storage facilities at some NPPs, or with a second centralised facility. Meanwhile, research should continue on final geological disposal and P&T (the latter primarily by participating in international programmes). Activities included in the Plan are financed by a separate Fund, generated for the most part by billing the NPPs.

Mr. Redondo pointed out that, due to various recent developments in the nuclear industry, the revision of the current Plan is expected shortly. Finally, he argued that in order to meet the goals of the Plan, the public must have confidence that the best technologies have been chosen and a satisfactory decision-making process has been established.

Isabel Mellado, Technical Director of Nuclear Safety, CSN, outlined the functions of the nuclear regulatory agency in Spanish radioactive waste management. She indicated that the CSN is the only Spanish institution enabled to issue regulations in nuclear safety. The agency prepares binding statements in relation to the authorisation of nuclear facilities. It is responsible for inspecting and controlling the operation of nuclear facilities and enforcing the correction of possible deficiencies. In addition, the CSN is responsible for monitoring nuclear facilities, controlling environmental impacts, and inspecting radiological protection of the workers and the public. The agency provides information and training for the public, gives technical support in emergencies, and participates in the preparation of emergency plans. The authority has bilateral agreements with various countries, and takes part in the work of international organisations such as the IAEA, the OECD/NEA, and the Latin American Regulators' Forum.

Ms. Mellado introduced the Strategic Plan developed by CSN for the period 2005-2010. The main strategic objectives and activities related to decommissioning and waste management are (i) to complete the set of standards that regulate radioactive waste management; (ii) to develop an integrated model for the licensing process and control of nuclear installations, including the end of life, decommissioning and radioactive waste management; and (iii) to develop new tools for the safety assessment of waste storage installations. The main objectives and activities related to social credibility include (i) developing a communication policy aimed at increasing transparency and credibility; (ii) entering into dialogue with stakeholders to learn about their expectations and views and to promote mutual trust; (iii) facilitating access to information; and (iv) facilitating stakeholder participation in relevant CSN decisions.

Rosario García Velasco, Parliamentarian, Member of the Industry, Trade and Tourism Commission, spoke of the recent activities of the Commission related to nuclear matters. The Commission found that the existing Nuclear Energy Law appears obsolete and does not meet today's requirements. Therefore, the Commission is planning to submit to the Parliament amendments to this Law. In addition, the Commission proposed to amend the Law defining CSN's responsibilities, with the aim of expanding the controlling authority of the regulatory body. It has also decided that the General Radioactive Waste Management Plan should be updated. The Commission found that determining health risks related to nuclear activities requires epidemiological studies. The Green and Socialist factions have agreed funding for such studies.

Mr. Velasco recalled that all members of the Parliament – including the members of the Green Party – supported the development of a centralised storage facility. There is also agreement that in the course of finding a location for the facility, transparency of decision-making processes and public participation should be strengthened, objectivity and security should be guaranteed, and political consensus should be sought.

Past Examples of Cases and Actors and the Emergence of Stakeholder Involvement for Decision Making in Spain

Case 1

As the first case history Jorge Lang Lenton, Corporate Director of ENRESA, recounted the failed attempt to establish an underground disposal facility for HLW. The site selection process, which was planned by ENRESA in the 1980s, was aimed at finding the “technically best” site. The process was conducted by technical experts without public involvement. When 40 candidate siting areas were identified in the mid-1990s, information leaked out, creating vigorous public opposition in all of these locations. In 1998 the siting process was halted. The Senate proposed to continue R&D on geological disposal and on P&T, to reduce waste production, and to develop an energy policy that relies more on renewable energy sources. They also suggested that public participation be promoted. The 5th General Radioactive Waste Management Plan, which was developed in 1999, took these proposals into consideration. Regarding underground disposal, the government postponed any decision until 2010. At the end of 2004 a decision was made by Parliament to establish a centralised storage facility for HLW.

Mr. Lang-Lenton highlighted the main lessons of the failed siting attempt. First, it has to be acknowledged that HLW management is a societal rather than a technical problem. Second, for any radioactive waste management facility a socially feasible rather than a technically optimal site should be selected, i.e., “the best site is the possible site”. Finally, transparency and openness are needed for building confidence in the decision-making process.

As part of the case history on HLW disposal facility siting, Antonio Rovira Viñas, Professor, Autonomous University of Madrid, reported on the proposal of the Senate for the study of the problems generated by radioactive waste. The study took place from 1996 to 1998, with a wide stakeholder representation; participants included the representatives of universities, trade unions, environmental NGOs, municipalities, regional governments, research centres, government agencies, ENRESA, and international organisations. The transcripts of the discussions and the views expressed by stakeholders were analysed by a group of academics, and Professor Rovira presented a summary of the main results. The policy regarding nuclear energy production and radioactive waste management was seen as a problem that has to be taken up by the national government. However, it was also agreed that any decision to be made should have the support of the affected municipalities and regional governments (Autonomous Communities). Stakeholders criticised former decision-making processes for the lack of transparency, and expressed the wish to participate in democratic processes governed by the principles of information, transparency and participation.

Both environmental groups and trade unions were of the view that nuclear power plants should be shut down before decisions on the waste issue are made. Other groups, including the municipalities, took the opposite view, i.e. that planning for radioactive waste management should start now. Technical groups tended to support the deep geological disposal option, while representatives of several research organisations felt that storage at NPPs should be maintained and CSN officials considered that temporary centralised storage was more recommendable. Many participants had the view that further research needs to be conducted on various technologies (e.g. deep geological disposal, P&T) before a definitive decision is taken. It was suggested that politically feasible and technologically adequate solutions should be pursued and a law should be developed to instruct how such solutions should be identified. Mr. Rovira concluded that the study was very useful, participation was very active, and even radical environmental groups, like Greenpeace, took part in the dialogue constructively.

Case 2

The second case example discussed in this session was associated with the dismantling of the Vandellòs-I nuclear power plant. First Jorge Lang-Lenton, Corporate Director of ENRESA, outlined the history of the operation, closure and decommissioning of the facility. The plant's construction started in 1967, and operation was launched in 1972. In 1989 a fire in the turbine hall led to a government decision to close down the reactor. In 1998 dismantling activities started, which finished in 2003. Decommissioning and dismantling (D&D) activities were undertaken by ENRESA, with regulatory oversight by the CSN. In 2003 the dismantling activities were completed and a latency period of 25 years started.

During the D&D period the implementer focused on internal training, the employment of local labour force, communication policies and safety. In addition to providing internal training to the personnel, ENRESA also tried to mitigate the negative socio-economic impacts of NPP shut-down by hiring local and provincial companies to participate in dismantling activities. As a result of these policies, about 65% of the personnel were composed of local and provincial workers. Communication policies focused on inviting the public to visit the site and reassuring them about the safety of the operations (the total number of visitors reached about 25 000). In order to build up a good long-term relationship with the affected communities and institutions, ENRESA engaged in co-operation with a number of local actors. For example, a Municipal Monitoring Commission was established, an agreement was made with the Rovira i Virgili University of Tarragona on education and scholarships, and collaboration was set up with the Council of Commerce of Baix Camp in the field of waste management.

Josep Castellnou Barceló, Mayor, Municipality of Hospitalet i Vandellòs, acknowledged that the decommissioning of the Vandellòs-I nuclear power plant was a big challenge for the community. Closing down of the facility resulted in a rise of unemployment and a decrease of municipal income. Therefore, from the very beginning, municipal governments entered into negotiations with ENRESA on socio-economic benefits, including local employment in dismantling activities, and other types of financial and non-financial compensation. The ADE business association, i.e. a network of business organisations was created that guided the allotment of work to local firms.

Mr. Castellnou explained that local municipalities focused on the triad of safety, information and local development, considered the three "pillars of trust". A Municipal Monitoring Commission was created, made up of representatives of affected municipalities, the regional government, the ADE business association, trade unions, the local university, the NPP management and ENRESA to monitor the dismantling process and regularly inform the local public. A number of communication tools and channels were used, e.g. public information meetings, an information centre, the municipal magazine, the municipal radio station, and meetings with representatives of the local press. Academics from the University of Tarragona helped with translating technical information to public level.

José Luís Revilla, Head of the Dismantling Project, CSN, confirmed that the key factors of success of a D&D project are safety, participation and economic development. In order to increase transparency and stakeholder confidence, in D&D projects regulators should act as the "people's experts", i.e. as accessible resources for stakeholders to address safety issues.

Mr. Revilla spoke of the role of the regulator in the Vandellòs-I decommissioning project. In this case, the decommissioning EIA provided the first opportunity for involving stakeholders, particularly local groups in planning D&D activities. The second such mechanism was the establishment of the Dismantling Information Committee for the Vandellòs-I Decommissioning Plan, in which representatives of various national government agencies as well as regional and municipal governments took part. Within the

framework of this Committee, the CSN appointed a Resident Inspector to oversee ongoing activities and provide for public information. By reporting to the Parliament and informing the general public and the media about its oversight activity, CSN played the role of a “guarantor” of safety in this project.

Carlos Barceló, President of the Industrial Union of Hospitalet, spoke about the involvement of local companies in the dismantling project. Local companies realised that they could not undertake the whole project, and informed ENRESA of the tasks in which they would be able to co-operate. On the whole, during the course of the 5-year project the local and regional firms were given more work than they had originally expected. Mr. Barceló praised the good partnership that evolved between the local firms and the implementer.

Francesc Domènech, Chair of Tarragona Media Association, recalled that the Vandellòs-I accident created a very difficult situation for the nuclear industry. During the crisis the nuclear sector decided not to participate in any media activities. Finally, the industry realised that not being open only exacerbated the credibility crisis. The closure of the Vandellòs-I power plant decreased the stress and offered an opportunity for the nuclear sector to change its attitude and public relations.

In Mr. Domènech’s view the Vandellòs-I decommissioning project is a technical challenge undertaken by society. ENRESA made great efforts to rebuild mutual trust between the nuclear industry and the media. For the first time, journalists were provided with fluid data, some of them very complex, which the media had to render more understandable for the public. Finally, Mr. Domènech observed that nowadays it is the regulator which most needs to gain credibility.

Francesc Castells, Professor, University Rovira i Virgili of Tarragona, spoke of the support that the University provided for the Municipal Monitoring Commission. He noted that the composition of the Commission was balanced, representing the interests of every important stakeholder (industry, environment, employees, employers, host and neighbouring communities, the regional government, the power plant and the implementer). The Environmental Analysis and Management Group of the University served in a technical advisory role. Services of the University included the peer review of periodic ENRESA reports, the review of documents delivered by ENRESA to the Commission concerning labour and environmental safety, technical advice to the Commission related to the dismantling process, and request for – and analysis of – additional technical information. Mr. Castells underlined that the performance of the Municipal Monitoring Commission was highly professional. He recommended the use of similar arrangements in the case of other future dismantling processes.

Case 3

Ana García of the Autonomous University of Barcelona described the role, goals and future plans of the Association of Spanish Nuclear Municipalities (AMAC) formed by the mayors of Spanish municipalities that host, or whose boundaries lie within a distance of ten kilometres from a nuclear facility. One of its main goals has been strengthening the safety of nuclear communities and promoting emergency planning. In addition, AMAC is endeavouring to take a voice in nuclear discourse and is willing to serve as a link between relevant agents (e.g. ministries, CSN, ENRESA, industry) and local actors. Although the initial mistrust has given way to an explicit recognition of AMAC as a unified speaker for its members, AMAC still is not fully accepted as a participant in the decision-making processes. Ms. García judged that this is not only a clear manifestation of the democratic deficit in Spanish society, but also indicates a far-from-ideal situation concerning transparency and participation of groups affected by nuclear facilities.

Ms. García highlighted some of AMAC’s goals and planned actions, for example, getting recognition and social legitimisation as a representative spokesman for local institutions in nuclear

matters, reinforcing the channels of public information, raising public awareness regarding the necessity for democratisation and transparency, facilitating the development of Local Information Committees, becoming a participant actor in decision-making processes related to the centralised waste storage issue, and promoting sustainable development.

Main Workshop: The “COWAM-Spain” initiative and the current project under consideration for a national interim storage facility for spent fuel and high level waste

The main workshop focused on the COWAM-Spain initiative, aimed at developing recommendations for institutional arrangements and decision-making processes concerning the siting of a centralised interim storage facility for HLW. After the opening, three sessions addressed the main themes of the COWAM-Spain project, i.e. (i) the involvement of the local level, (ii) the interplay between the national and local level, and (iii) the long term sustainability of decisions. Sessions were structured into plenary presentations and facilitated round table discussions. The latter were summarised by moderators.

Session 1: Opening

Claudio Pescatore, Principal Administrator at the OECD, welcomed workshop participants on behalf of the NEA. He introduced OECD, the Nuclear Energy Agency (NEA), its Radioactive Waste Management Committee (RWMC) and the Forum on Stakeholder Confidence (FSC). The NEA was set up by 28 industrialised countries, which possess 85% of the world’s installed nuclear capacity. It is funded by member countries in proportion to their GDP. According to its Strategic Plan, the main goal of NEA is to maintain and further develop the scientific, technological, and legal bases required for a safe, environmentally friendly and economically sound use of nuclear energy. NEA has 80 employees (40 professionals) and seven committees.

Mr. Pescatore underlined the fact that the RWMC is a unique worldwide forum of senior regulators, implementers, policy makers and managers of R&D institutions, including representation of EC and IAEA management. It has four subgroups, the Forum on Stakeholder Confidence (FSC), the Integration Group for the Safety Case (IGSC), the Working Party on Decommissioning and Dismantling (WPDD), and the Regulators’ Forum (RF). The main goals are to gain a shared understanding of both the commonalities and differences between countries and types of organisations, to advance the state of the art wherever possible, and to make findings widely available. For delegates the above subgroups provide a neutral ground where all views are heard and debated, and an environment for learning and self-improvement.

Anna Vári, Professor, Hungarian Academy of Sciences, provided feedback on Day 1. She outlined the Spanish nuclear and institutional scene, identified the main stakeholders, and observed that while some actors (primarily the Parliament, ENRESA, and AMAC) have played key roles in shaping national RWMC policy, there are other important stakeholders (e.g. waste producers, regional governments, NGOs, and the general public), who have not been involved in such decisions so far. Regarding the role of the general public, it seems that public influence has been exerted on policy making mainly through the mechanisms of representative democracy or protest actions rather than direct participation.

Regarding the main lessons learnt from the two case studies presented on Day 1, she pointed out that in the case of siting an underground HLW disposal facility, key factors of failure included the intention to find a technically optimal site, the lack of openness and transparency, and the lack of political consensus regarding the need for a radioactive waste management facility. Regarding the Vandellòs-I dismantling case, the following factors of success were identified: proactive approach and

openness on the part of the implementer, involving local stakeholders, and addressing socio-economic concerns and safety issues. In addition, the necessity of dismantling was obvious for most stakeholders, and efforts for cleaning up were seen positively. Finally, community leadership played an important role in the successful management of the dismantling project.

Mariano Vila D'Abadal from AMAC summarised the objectives, components and achievements of the COWAM Spain initiative, which grew out of the "Community Waste Management" COWAM-2 project under the EU 6th Framework. Initiated by AMAC, it was aimed at planning a site selection process for a centralised waste storage facility. Participants of the project included experts from universities, representatives of regional governments, nuclear communities, nuclear industry, the implementer, the regulator, and trade unions, among others. The project was structured into four working groups. One dealt with overall management and integration and the others with (i) issues of democracy and local participatory systems, (ii) institutional framework and multi-level decision processes, and (iii) long-term governance, respectively.

Regarding the main conclusions of "COWAM-Spain", there is an agreement between key stakeholders that solving the HLW management problem and more specifically the selection of a site for a storage facility is the responsibility of the national government. Decision making at the national level should accommodate the requirements of political agreement, safety, public participation, information, and transparency. In order to reach the needed social and political consensus, affected municipalities and regional government(s) should be integrated into the decision-making process. From an ethical perspective, priority is given to the principle of responsibility, i.e. the problem should be handled by the current generation, and each country should manage its own waste. Links between nuclear energy policy and radioactive waste management policy should be made explicit, and public participation in policy making in both fields should be fostered. At the local level, the participation of municipalities should be voluntary and withdrawal from the process should be allowed. In addition to safety, sustainable socio-economic development of the affected region should also be promoted. It is recommended that Local Information Committees be set up with the aim of institutionalising and legitimising public participation at the local level.

In order to conduct a transparent, efficient, and legitimate site selection process, the establishment of a National Committee, composed of local and regional stakeholders, politicians and experts is proposed. This Committee would (i) define the technical, environmental, social and economic criteria for selecting candidate siting areas, (ii) develop a procedure for inviting interested municipalities to participate in the site selection process, and (iii) identify a minimum of two and a maximum of five suitable sites. The national government – with the agreement of the affected regional government and municipalities – would select the final site. It is also recommended that the National Committee continue its oversight activities during the later phases of construction and operation of the facility.

Session 2: Involving the local level

Mercé Chiapella, Professor, University Rovira i Virgili (Tarragona) presented a comparative study conducted within the framework of WG1 (democracy and local participatory systems) of COWAM-Spain. Two projects associated with the installation of a combined cycle natural gas power plant in the Tarragona district were compared: one in Mora la Nova (Enron) and one in Hospitalet/Vandellòs (Natural Gas). The Mora la Nova siting attempt failed because of vigorous local opposition, while the Hospitalet/Vandellòs process was successful. A detailed analysis revealed that the main difference between the two processes lay in the nature of the negotiations between the operator and the local stakeholders that preceded the publicising of the project, and the efficiency of the reconciliation of the standpoints. As a result of the comparative study, recommendations have been formulated concerning a few crucial preconditions for successful siting. One is that as many

alternative scenarios as possible and their possible outcomes should be analysed before a decision is made. The second is that from the very beginning of the project contact should be made not only with the host municipality but also with the neighbouring local governments, regional and national administrations, the affected business community, pressure groups, platforms, etc. The third recommendation concerns the style of negotiations with the stakeholders. According to this, the likelihood of success is higher if negotiations are comprehensive (i.e. aimed at integrating a variety of goals), interest-based and explicit. Namely, they are more likely to result in win-win solutions than narrowly-focused, position-based negotiations with hidden agendas.

Round table discussions

Moderator: Kathryn Shaver (NWMO, Canada)

What is the appropriate role for scientific experts (who would address issues such as need for the facility and safety) in a dialogue with the local population?

Most round tables felt that scientific experts (some preferred the term “specialists”) should be available to respond to questions and provide clarifications during public dialogues. It was recommended to distil and distribute in advance plain language summaries of scientific and technical issues as background context for meetings. Some emphasised that a dialogue means two-way communication, for a real exchange. It was agreed that experts should strive to be responsive to what local stakeholders want to know, i.e. to match available expertise to local expectations.

Some of the participants viewed that experts must be perceived to be independent. Others suggested that specialists should declare their interests and expose their values transparently. It was suggested that affected communities ought to have access to their own specialists for independent advice and expertise on matters they wish to pursue. Resources provided to local communities for purposes of capacity-building are key to addressing the information balance between implementers and affected communities. Ensuring that communities have resources and access to independent specialist knowledge of their choice is essential to supporting active local participation and informed decisions at the local level.

It was suggested that regulators should be visible and act as consultants for local stakeholders, but caution was noted that regulators are not always viewed as “independent”. It was also observed that actors (such as the regulator) that serve well as “experts” in one country may not be well received in that role in another country. Implementing agencies are also often to be considered “experts” provided that they have earned credibility in the eyes of the public. In other instances, NGOs may be regarded as experts.

Round tables discussed the challenges of addressing the broad range of disciplines of expertise deemed to be relevant to radioactive waste management. These multi-disciplinary areas will need to be addressed through appropriate specialists or working groups. Some pointed out that leadership is also required from social science experts, including those from the local university community. Finally, it was suggested there should be honesty about what science can and cannot do – i.e. address scientific uncertainty with candour – and this is key to building trust.

What can the leading governmental agencies do to demonstrate and follow through with commitment to a genuine stakeholder involvement process?

Participants argued that governments have an important role in setting the foundation and communicating the case for required decisions on radioactive waste management. To the extent that

governments can clarify at the outset how the waste management plans fit into the overall energy plans, this clarification may be helpful in establishing the focus and foundation for stakeholder involvement. Clarity should be provided by governments through statutes at the national level concerning the focus and scope of decisions, the roles and responsibilities of various actors, and requirements for public involvement.

The opportunity exists for establishing oversight commissions that bring together government representatives from national, regional and local levels with other actors for the duration of the project planning and implementation. Such a commission was proposed for consideration in Spain. It can also be very helpful if some government staff are on the scene and, therefore, become known in the community hosting the project. This was the case with the CSN, which had a resident inspector at the Vandellòs-I site during the critical phase of D&D.

Government can empower communities by legitimising local information committees and granting them autonomy. Round tables found that it is important to embrace proper training of all government representatives who interact with local stakeholders so that they are prepared to speak candidly, in plain language, to listen to local concerns, and when appropriate to make changes based on input from local expertise. It was also recommended that social science expertise be recruited and applied to better tailor government communication to the knowledge of how people receive and process information.

Would you agree that safety is everyone's concern and it will come naturally from a healthy democratic discussion?

It was agreed that safety is everyone's concern and it is non-negotiable. However, various stakeholders may hold different perspectives and definitions of safety.

Regarding whether or not safety will emerge naturally in democratic discussion, there were significant differences between the views of the round tables. Most of them judged that better safety assurance will not naturally evolve from discussion. However, one of the round tables concluded that when stakeholders are presented with opportunities to engage in discussion, issues of safety and security will emerge in dialogue. One country (Canada) reported that its iterative and multi-party engagement with specialists, interested citizens and the public at large had enabled exploration of what constitutes "safety" with regard to requirements for radioactive waste management. "Safety" was defined in collaboration with citizens as well as specialists, so that the scope to be considered included that which is relevant to citizens, and not just the definition understood by specialists. It was found that a meaningful process of engagement provides a democratic process through which citizens and specialists contribute to decision-making against this expanded perspective of safety.

Round tables were of the view that safety will need to be demonstrated at each point in the implementation process. It was suggested that societal notions of safety would evolve over time, as would the state of technical knowledge that greatly influences perceptions of safety and risk. It is therefore important to continue to provide democratic processes through which implementers can understand and align processes with evolving understandings of safety.

How to create multiple opportunities for people to be engaged in the process in ways that suit their needs and constraints?

Round tables suggested that decision-making processes should be structured to allow for multiple engagement opportunities through iterative processes of dialogue and sharing of information. It is important that such processes facilitate real dialogue and active participation, not just one-way

consultation. Engagement opportunities can be provided early on in a project phase, designed to understand societal expectations, pre-eminent citizen values, and key objectives for the project. Active involvement at the local level can continue through the implementation period, which may continue for decades.

It was felt that a diversity of engagement tools and media may be appropriate in order to reach the broad range of communities of interest. Face-to-face meetings are highly valued for real dialogue and such meetings may be supplemented through electronic dialogues, workshops and working groups. It was suggested that both qualitative (e.g. interviews) and quantitative types of processes (e.g. opinion polls and referenda) be applied. A step-wise decision-making process can play an important role in providing such multiple opportunities for engagement.

A structure to ensure active local engagement was discussed. Round tables viewed that it should be based on the establishment of a core, oversight committee that would meet at regular intervals to discuss project findings and maintain a forum of local stakeholder engagement. This type of committee could be supported by a number of topical working groups tasked with addressing a range of community-specific issues. Some of the round tables emphasised the importance of autonomous local advisory committees, which require resourcing and formal status conferred by government authorities. Committees could be tailored to the needs of the community to most effectively contribute to local discussions of the questions to be asked, information needs and the range of expertise required by the community.

Session 3: The interplay between the national and local level

Miquel Ferrús i Serra from the Group of European Municipalities with Nuclear Facilities (GMF) summarised the activities carried out by Working Group 2 of COWAM-Spain, focusing on the institutional system and the interaction between decision processes at various levels. The group first analysed the institutional background of radioactive waste management and identified the actors whose role in the authorisation process is defined by law. Then actors that can play important advisory roles (e.g. nuclear communities, media, business groups, consumers, federations of municipalities, NGOs) were also listed.

Next, Mr. Ferrús presented a case associated with a failed attempt to establish an industrial waste storage facility in Baena (Córdoba). He explained that although the potential host municipality and several local players (e.g. political parties) supported the project initially, a massive opposition followed, and finally the vast majority of the local population rejected the facility. A detailed analysis revealed that the main cause of failure was the lack of clear definition of the project (e.g. the source and volume of waste, the technology to be applied, etc.) before negotiations with the municipality about compensation and participation started. Another important factor of failure was the lack of transparency, which opened the way for speculations. Lack of involving a number of important stakeholders in the negotiations resulted in disagreements between members of the regional parliament and between different executive levels of government and various other political actors.

Mr. Ferrús explained the lessons that were drawn from the empirical study. Most importantly, the goals of a radioactive waste management project and the roles of the various actors should be clearly defined from the very beginning. The national government should be the one who defines the problem to be resolved, should demonstrate its willingness to solve it, and should guarantee safety and transparency during decision, implementation and operation. Both the affected municipalities and the regional government should participate in all of the above phases. A National Commission should be created to guarantee the fair play by the actors throughout the process. The members of the Commission should be chosen by the Parliament. In addition, a Local Information Committee should be established in the candidate area to inform and consult the local community.

Round table discussions

Moderator: Janet Kotra (US Nuclear Regulatory Commission)

Are there clear definitions of roles for the national and local level in Spain (with regard to waste management decision making)?

Most of the round tables were of the view that the roles of various players have not been clearly defined yet and there is still opportunity to shape the roles in the context of defining a process. Participants of discussions agreed that the national government should lead the process, but the need remains for wider national consensus. ENRESA must draft a Radioactive Waste Management Plan, but it is not clear how stakeholder input in application of the Aarhus Convention will be taken into account during the planning effort.

How to balance national imperatives with local views? Who should lead, local or national?

Round tables suggested that leadership for structuring any site-specific stakeholder involvement process should be at the local level, with the national government retaining the final decision-making authority. Many participants spoke of the value of retaining a municipal veto as is the case in Finland. In many countries, the “regional level” is also important; lack of support there can derail agreements reached between municipalities and national governments.

Is there any national framework for supporting the local level (host communities and/or neighbouring communities) from the economic and other viewpoints?

Participants agreed on the importance of providing generous resources and legal tools, allowing for some measure of local oversight (in addition to, or to complement that of regulatory authorities), as well as a long-term role for host community. Many participants noted the value of empowering a local committee for providing and receiving information to and from the local community. It was suggested that local communities should have the ability to decide what role they want to play and under what conditions.

Session 4: Long-term sustainability of decisions

Meritxell Martell from Enviro Spain spoke of the long-term aspects of radioactive waste management. She pointed out that decision-making processes need to be framed within the context of sustainability, which means that a balance should be sought between scientific considerations, economic aspects and structural conditions. Focusing on structural aspects, Working Group 3 of COWAM-Spain came to the conclusion that the activity of the regulator is a key factor of long-term management. Another finding is that from a sustainability perspective multi-level governance is more effective for coping with the challenges of radioactive waste management than one tier of government-making decisions. The working group also felt that the current Local Information Committees need to evolve towards more institutionalised and legitimised mechanisms for long-term involvement.

Ms. Martell introduced a study comparing the efficiency of economic instruments to advance sustainable development in nuclear communities vs. municipalities in mining areas. The study found that funds transferred to nuclear zones had become a means to facilitate local acceptance of nuclear facilities rather than a means to promote socio-economic development. Another finding is that economic instruments are not sufficient guarantees of sustainable development by themselves; additional preconditions include leadership, vision and entrepreneurship on the part of community leaders, private or public investments, among others.

Finally, Ms. Martell summarised the challenges faced by the Spanish radioactive waste management programme, which include the need for strategic thinking, designing the future in a participatory fashion, and working with local and regional governments and citizens to devise mechanisms for social learning, economic development and environmental protection.

Round table discussions

Moderator: Markus Fritschi (Nagra, Switzerland)

The transportation activities are likely to be an ongoing issue over several years. There is a potential for public individuals to hinder the transport of cargo by various means. How do you lower the probability of such an event, and should it occur, how do you manage the situation taking into account public confidence in general?

Most round tables indicated that transportation of radioactive waste materials is seen as a symbol by opponents. Institutional actors are responsible for transporting safely; various means are used for that purpose, from secrecy to fully open announcement of the transportation programme.

In Germany, the industry has been requested to have storage on their sites in order to reduce the risk with transportation of nuclear material, and only vitrified waste is transported to a centralised storage facility. The probability of hindering the transport is reduced by a strong control by the police, especially over the last few kilometres. There is also some gain in performing transportation at another date than the one announced. In Sweden, there is no protest about transportation, which is performed by sea. In Argentina, the answer has mainly been legal, with an agreement of the Parliament. The clear framework that has been drawn in Argentina led to reduced opposition and hindering. In Japan, information about transportation is kept secret in order to avoid or limit hindering. In Canada, there is no transportation. In Germany and in Canada, clear information is delivered to the municipalities; this information is considered to be a factor for safety. Local municipalities may also play the role of a social institution in a very democratic way as in the United Kingdom. It was noted that transportation is regulated by a permit delivered by the regulator in most of the countries.

The host community for the central storage can be seen as providing a “service to the nation”. Beyond the responsibilities of the operator (Polluter- Pays-Principle), should the national government provide compensation for this service (User-Pays-Principle)? How will such an idea be received by the different stakeholders in Spain? Is there a precedent for such compensation? How is it negotiated?

The understanding about Spain is that the government provides compensation for service to the nation through the mission given to ENRESA. As soon as spent fuel is discharged from the reactor, it is considered as waste. The government has a clear responsibility for managing long term storage and for compensating communities. Money to the communities is coming from the power plants, in the form of a tax, and is managed through ENRESA.

In other countries, the question of compensation is raised when taking account of the opening of the energy market, and its consequences on competition. Compensation is not used in Sweden and in other countries as a direct explicit feature. Funds exist in all countries for reinforcing roads and infrastructure, developing public service, and supporting further studies, but the word “compensation” is avoided. However, compensation does exist in other fields of activity, such as for the oil industry in the Shetland Islands. Other forms of compensation may exist as local taxes or lower price for electricity delivery. Some participants noted that direct compensation cannot be relied upon as the only way to encourage local communities to accept an installation.

It was noted that the principles and rationale of compensation need to be developed ahead of time. It has to be decided if a burden or a disturbance is acknowledged, in which case compensation is aimed at balancing these. Another possibility is to consider benefits as incentives for the host communities to accept a facility. Benefits can be used for e.g. investing in human capital or developing infrastructure. In any case, the real or perceived impacts of the facility on the various players need to be understood, and compensation/incentive schemes must be discussed with the government of the affected region rather than merely with the host community.

Session 5: Thematic reports

In Session 5, two thematic rapporteurs presented their observations on the workshop. A discussion with the audience ensued.

Yves Le Bars, former Chairman of Andra and of the FSC, analysed the Spanish case within the European context. First, he summarised the evolution of policy-making approaches since the Second World War. In the first stage, decision-making authority was assigned to experts. Dialogue was not part of decision processes; opposition manifested itself in protest actions. In the second stage, society demanded the consideration of alternative solutions. Opponents organised legal actions and in this way decision-making authority was transferred to the courts, which based their judgements on hearing experts on differing sides of the question. The third stage is characterised by the involvement of relevant stakeholders and an interaction between decision makers, experts and stakeholders. According to this approach, public policy needs to be elaborated, adapted to, and adopted by different interest groups.

Mr. Le Bars argued that the Spanish history of radioactive waste management went through the former two stages. The siting attempt for an underground disposal facility followed the approach of the first stage. Decision makers and experts were of the view that deep geological disposal was the best solution and they were not willing to share information with the public. This led to a failure and a moratorium. The Vandellòs-I decommissioning case shows some features of the second stage, for example, the introduction of independent expertise in the Municipal Monitoring Commission. Finally, with the involvement of AMAC, a shift to the third stage can be seen: the COWAM-Spain project defined main principles for a decision-making process where policy makers, experts and stakeholders could collaborate to define a viable radioactive waste management policy.

Mr. Le Bars observed that the current Spanish situation raises a number of questions. On the national level, the direction of radioactive waste management policy is defined by the national Plan, which is periodically revised. It is an open question as to how the national planning process could integrate the input of all major stakeholders. While the role of the main actors is clear, they seem to have difficulties in proceeding from “more communication” to “collective learning” and the recognition of “civil society”.

Mr. Le Bars outlined three possible extreme scenarios. The first is the “no decision” scenario (similar to the German status quo), where neither the government nor the industry wants to make a decision. This situation could be interpreted as a compromise between environmentalists and utility companies to wait for the social maturity of final disposal. Under this scenario, long-term storage capacity will be necessary, which could be built at a low financial and political cost, at NPP sites. This scenario is viable since nuclear industry still exists with the competencies needed to maintain and oversee on-site storage. The second scenario may be called “ethics and business” (the Nordic way). In this scenario, government and industry share the willingness to close the fuel cycle and not to transfer responsibility to next generations. This high-cost scenario leads to decisions on establishing a disposal facility and the negotiation of a contract between the government and the host community/ies.

Scenario 3 is described as an “ambiguity scenario” (as seen in most of Europe). It is characterised by a strong willingness of industry and government to close the fuel cycle, but also by the wish of nuclear industry to minimise public influence and limit open debates. The final solution to the problem is, in a way, left to a willing municipality. This scenario may eventually lead to Scenario 1 (no decision), or Scenario 2 (if the radioactive waste management issue becomes sufficiently mature in society). Finally, Mr. Le Bars judged that Scenario 2 is unlikely under the current Spanish conditions. At the national level, the search for driving forces to boost decision-making and siting processes continues.

Thomas Webler, Professor, Antioch New England Graduate School, gave voice to the opinion that the workshop and the municipal visit offered a comprehensive perspective on the Spanish situation. He appreciated the good working atmosphere of the meetings, the authentic interest in an open dialogue, and the opportunities offered for people to learn from each other.

Professor Webler analysed the Spanish situation from the perspective of public involvement and found many strengths. He judged that one of the main strengths of the present approach is that the problem of HLW disposal is seen as a societal problem, rather than the problem of ENRESA. In addition, there appears to be shared agreement on the problem and how to solve it, i.e. there is widespread support for establishing a centralised storage facility. Another strong point is that some key stakeholders (especially AMAC and ENRESA) are very active and take a collaborative approach to solving the problem. They are also engaged in international projects aimed at dialogue and learning. It is also advantageous to have AMAC as project leader since it comprises host communities and neighbouring communities as well. A further advantage is that, at this stage, no timetable is imposed upon the process. Finally, since technologies of interim storage are well understood, there are no technical uncertainties to resolve.

Professor Webler also called attention to the points of vulnerability of the Spanish programme. He demonstrated that there are several weak points in the proposed process, and he suggested these be remedied by explicitly defining the decision-making process. Regarding the involvement of the local public, both the formal authorisation process and the EIA process are highly formalised and may not offer citizens adequate opportunity to participate. There is not adequate clarity on how communities volunteer to host a facility (by a vote of elected officials, by referendum, etc.), how they can withdraw, and what will be the role of elected leaders, neighbouring communities and regional governments in such decisions. All of these decisions require public deliberation at many levels of governance, but the structures to enable these sorts of discussions do not appear to be in place. A further weakness is that several important players (the nuclear industry, the regulator, the Spanish Nuclear Energy Forum, the Spanish Nuclear Energy Society) do not seem to be involved in developing the siting process. Professor Webler also emphasised that, for the process to succeed, governmental agencies will need to demonstrate lasting commitment to seeing this process through to its own end. Achieving this commitment up front should be a high priority.

Professor Webler concluded that rules of deliberation and decision making need to be clearly defined. Research has shown that processes such as this are more successful when they offer stakeholders and citizens multiple and diverse opportunities for involvement, and responsible organisations are committed to a constructive collaborative relationship to solve the problem. He endorsed the plan of having a participatory deliberative process overseen by a committee appointed by Parliament, if they are given independent oversight and adequate budgetary resources. Finally, he emphasised the need to focus on the realisation of effective political deliberation among stakeholders at the level of municipalities.

Session 6: Closure

Session 6 included the final addresses by FSC leadership and workshop organisers.

Janet Kotra vice-chair of the FSC indicated that she learnt important lessons about the local uniqueness and cultural specificities of the Spanish situation. At the same time, the country workshops also show that the various cases have important commonalities, such as what creates and destroys trust. They also share the basic idea that the ultimate goal is to protect public health and safety. Ms. Kotra expressed her thanks to the Spanish hosts and the NEA Secretariat for the organisation, and to the speakers, moderators, rapporteurs, and all participants for their co-operation.

Claudio Pescatore from OECD/NEA applauded the active participation of all, as well as the opportunity for learning. He reported that the ideas elaborated by the FSC are being transferred also to other groups in radioactive waste management, particularly the Working Party on Decommissioning and Dismantling. The Vandellòs example was very important to that effect.

Jorge Lang-Lenton from ENRESA said that the workshop had confirmed his view that the municipalities to be affected by the storage of spent fuel should play a key role in decision-making processes. The opinion of these communities should be fully respected when planning for the establishment of a storage facility. The siting process will create a big challenge for all stakeholders, including politicians, municipalities, civil society organisations and ENRESA. Hopefully, the process will be a success in the exercise of democracy.

Carmen Ruiz López from CSN expressed her thanks to participants for the good discussions. She said that she had not only learnt a lot but also enjoyed the vibrant meeting. She thanked the local hosts for their hospitality.

Josep Castellnou Barceló, Mayor of Hospitalet i Vandellòs, expressed his belief that his community is trying to solve a problem which is shared by many countries. Local stakeholders are looking for a solution the central elements of which are safety, information, economic development and trust.

INTERNATIONAL PERSPECTIVE

NEA Secretariat

Changing concepts of fairness and striving for robustness

The Spanish workshop of the FSC provided further confirmation of the trend, observed in other OECD countries in the field of decision making for radioactive waste management, towards moving from a technical-hierarchical approach to a combined societal-technical approach.

The failed siting process of the HLW disposal facility was a typical case of the technical-hierarchical approach, characterised by strict government pre-emption of local authority, limited public access, and a strong reliance on technical criteria. For the Vandellòs-I dismantling the implementer applied an approach that puts into the forefront negotiations with the local communities concerning economic development and oversight. This shows that important lessons had been learnt from the earlier experience. The current recommendations from the COWAM-Spain initiative go a step further and combine additional elements involving not only the local but also all the intermediate levels of government up to the national one, as well as clearer protocols for the role of safety, information and transparency, public participation, sustainable socio-economic development, and the principle of responsibility. In accordance with FSC findings, COWAM-Spain too recommends finding a licensable site that the local and regional actors consider both safe and acceptable, instead of seeking a technically optimal site.

Roles and responsibilities of actors

Who holds the ultimate management responsibility?

Different countries use different models for assigning responsibility for the management of high-level radioactive waste. In Canada, Sweden, and Finland the responsibility lies with the waste generators; in Belgium, and the USA it is the responsibility of the national government. In France it is the responsibility of the national government, but long-term liabilities still lie with the industry. Interestingly, in Germany it has been proposed recently that responsibility for siting and operating a radioactive waste management facility be transferred from the federal government to the nuclear industry; whereas in the Netherlands this responsibility was transferred recently from industry to the government. The latter move was made in order to allow for a century-long period of interim storage, which is a period over which government stability is felt to be greater than that of industrial operators. In Spain, after the decision to favour an interim-storage facility as a first step, ENRESA similarly has been made closer to government than before.

The role of the regulator

A widely supported view among stakeholders is that strengthening the role of the regulator is desirable. A trend towards viewing the regulator as the “people’s expert” can be observed in a number of countries (e.g. Sweden, Finland, Canada).

The role of local committees and of nuclear municipalities

There also seems to be general agreement that Local Information Committees – the creation of which is prescribed by Spanish law – have an important role to play in all phases of facility design and operation. Local committees have been functioning in a number of countries. Their functions may include transferring information between implementers and local citizens, advising decision makers, and planning facilities or socio-economic development concepts.

An important element of the Spanish institutional scene is AMAC, which hitherto has played, and intends to continue to play, a very active part in the planning of the decision-making process, in the development of Local Information Committees and in representing community interests. The proactive role of AMAC provides confirmation of an earlier observation by the FSC: namely, that local communities that find themselves *de facto* hosts of radioactive wastes are likely to become active players in decision-making processes, including proposing solutions for radioactive waste management.

Vandellòs-I dismantling: an important example of application of the three “pillars of trust”

The workshop provided the opportunity to review and appreciate the Vandellòs decommissioning project, a rare complete waste management project that, in fact, was instrumental in enunciating the three pillars of trust that the FSC embraces: Safety, Participation, and (local) Economic Development. The Vandellòs-I decommissioning project exemplifies how the three principles were satisfied.

Each of these three pillars has particular meaning for the individuals making up the communities affected by decommissioning and dismantling, as well as for the institutions involved in this activity. Safety is necessary for any individual to be able to act, take decisions and make use of his/her freedom. Safety during the whole lifetime of a project is paramount and should constitute as small a burden as possible on both current stakeholders and those who will enter the scene at a later time – including future generations. Assurance of safety, e.g. through the provision of adequate information, including plans for dealing with emergencies, is essential for communities in the locality of a nuclear facility.

A decide-announce-defend policy is not conducive to sustained progress. Participation in decisions is the effective and best way forward for site operators closely to involve local politicians or community leaders, and to co-operate with any local committees set up to oversee the community interests. This means providing them with transparently valid information about plans and programmes, living up to commitments, and being constantly available to answer questions and hear comments. It also means providing valid information on safety and environmental matters including waste management and giving full consideration to concerns about the effects on society such as loss of employment, the need for alternative economic activity, or future use of the site and about compensatory benefits for the community. At the same time, because decommissioning of nuclear facilities, and nuclear power plants especially, has more than just local dimensions, questions should be expected on links to the national energy and radioactive waste management policies. A clear structure of actors and their roles is helpful to situate national and local responsibilities, and should be broadly publicised.

All techniques for communication have their place: conventional meetings, seminars, debates and provision of information packages for local discussions to television programmes and websites, supported with “chat-rooms” if appropriate. Timeliness is a key factor. Communities where facilities are shut down have additional special communication needs as a result of termination of local employment. The employees of the phased-out facility are special stakeholders who may become a resource in the subsequent dismantling phase.

Local development is the final pillar. While the sustainability of the host community has not always been a priority for traditional industrial operators closing down an automotive or manufacturing plant, there are demands on the nuclear sector to ensure high socio-economic potential and quality of life in the host community. Communities are eager to take part in deliberations about the suitability of decommissioning, to see the land restored to open and productive usage if the plant is dismantled, and to receive assurances of different natures that their economic viability will not falter. An example may be drawn from the “sister” area of long-term radioactive waste management, in which stakeholders see community sustainability funds as an important instrument.

These final proceedings of the Spain workshop of the FSC provide a useful overview of the lessons learnt from the decommissioning of Vandellòs-I from the point of view of stakeholder confidence.

Sustainable development

The COWAM-Spain study comparing the efficiency of economic instruments to advance sustainable development in nuclear communities vs. municipalities in mining areas is inspiring. Funds transferred to communities ought to be a means to promote socio-economic development rather than simply facilitate local acceptance of the facility. Funds should thus be earmarked appropriately.

Final remark

Overall, the Spanish workshop offered a well-rounded perspective on the inclusion of stakeholders in decision making, and the atmosphere of the meetings was conducive to an honest and open exchange of ideas. The continued presence of AMAC members including the mayor of Hospitalet contributed to rooting the workshop in local life and actual experience.

WORKSHOP

INTRODUCTION AND WELCOME ADDRESS

Takanori Tanaka
NEA Deputy Director, Safety and Regulation

Chairperson, Ladies and Gentlemen,

On behalf of the OECD Nuclear Energy Agency (NEA), it is my pleasure to welcome you to this workshop. I would like also to express my thanks to our Spanish colleagues at AMAC, ENRESA, CSN and particularly Vandellòs Municipality for their hospitality for giving us this opportunity to meet here in L'Hospitalet de l'Infant and to address stakeholder issues. On a personal basis, I am very glad to be offered the opportunity to represent my Agency, to introduce myself as the new NEA Deputy Director for Safety and Regulation.

This is the 6th workshop of a series organised by the Forum on Stakeholder Confidence (FSC). We have a unique opportunity to hear from and interact with our Spanish colleagues who have just completed a landmark process – reaching a common view on ways to organise the decision-making process toward siting a facility. This workshop will provide the all of us, international delegates and our Spanish colleagues, not only with a chance to explore how this joint approach was carried out but also the actual people responsible for the project “COWAM-Spain” with the opportunity to discuss the outcomes of their work within our international arena.

It is well recognised that risk decisions/management are no longer the exclusive domain of scientific understanding and experts' judgements. They involve a variety of actors, from the general public to specific social groups concerned, each having their own sensitivities. In that regard, nuclear energy technologies are perceived to have a weak point in the field of radioactive waste management. Therefore, communication with stakeholders has become a key challenge for both the nuclear and non-nuclear communities.

Following this trend, in the 90s, the OECD launched a programme seeking for dialogue with civil society. At their 1999 and 2000 OECD Ministerial Council meetings, Ministers notably recognised the OECD role to assist governments in improving communications and consultation with civil society or civil society organisations (CSOs) by ensuring the transparency and clarity in policy making. They also noticed that many OECD committees have stakeholder involvement and that this could be deepened. Among other OECD Directorates, the Public Affairs Department has also played an important role looking specifically at how to strengthen the relationship between governments and their citizens, especially in terms of treating citizens more like partners to consult and learn from in decision making. It is a fact that people will accept the outcome of a process that they perceive as fair, even if the solution is not one they would have chosen.

The NEA, one of the OECD Directorates, also initiated support to governments in their dialogue with civil society. All our standing technical committees, from safety to waste, radiation protection and nuclear development, are concerned. The FSC, which is more waste management orientated, has achieved a world reference status. The results of its studies and its recommendations are valuable to organisations and governments in adapting to the new decision-making environment as the results arise from workshops like this one.

The NEA in general and the FSC in particular do not offer recipes for success but only ground to understand commonalities and differences. By this means, they assist organisations in identifying their own way forward.

International co-operation is essential to address those challenges in the most effective way. Exchange of information and experience sharing between countries are means to ensure such co-operation and international fora such as the FSC offer unique opportunities for free discussions.

I am looking forward to the presentations and discussions on the coming days and I am sure that we will all benefit from lively and stimulating discussions. I thank you for your attention.

**THE SPANISH NUCLEAR AND INSTITUTIONAL SCENE:
ROLES AND RESPONSIBILITIES**

NUCLEAR ENERGY IN SPAIN

Carlos de Villota
Spanish Electricity Industry Association (UNESA)

Ladies and gentlemen, my dear friends, good morning. I should first like to thank the organisers of this seminar for their kind invitation to participate, since I consider that this event is particularly important and appropriate in order to inform whoever it might concern of the reality of radioactive waste management and the need for all the parties involved to participate in the taking of suitable decisions to ensure the safe and optimised management of such wastes.

Given that my presentation is one of the first, it is aimed at describing nuclear energy in Spain and, in particular, the main companies working in this field, the institutions relating to the electricity and nuclear sectors in Spain, the nuclear power plants existing in the country and UNESA, the entity in charge of co-ordinating the generic activities of the electricity industry in relation to nuclear matters.

Institutional Organisation

The nuclear regulatory authority in Spain is the Nuclear Safety Council (CSN), created by law in 1980 as a body independent from the State Administration, with its own legal standing and resources independent from those of the State. The CSN is the sole organisation responsible for nuclear safety and radiation protection.

Given that this morning there will be a specific presentation on the CSN, I shall not extend my description further, simply stating that its main activities are inspection and control of the operation of the Spanish nuclear and radioactive facilities, the issuing of proposals regarding regulations governing nuclear and radiation protection matters, the development of specific standards and proposals regarding sanctions. The CSN reports and decisions are binding upon the Administration as regards the denial of authorisations or the conditions to be met for their awarding. The CSN reports directly to the national Parliament.

Organisations that also have responsibilities for certain activities relating to nuclear and radioactive facilities, depending on the Government, are the Ministry of the Environment, the Ministry of Industry, Tourism and Commerce, which grants significant authorisations, and the Ministries of Economy and the Exchequer and Science and Technology, to which report various organisations and companies such as the manufacturer of nuclear components (ENSA), the nuclear fuel manufacturing facility (ENUSA), the Centre for Energy-related, Environmental and Technological Research (CIEMAT) and the national radioactive waste management agency Empresa Nacional de Residuos Radiactivos (ENRESA), on which there will also be a specific presentation this morning.

Other state organisations that are related in a sense to nuclear activities are the National Energy Commission (CNE), which is the electricity market regulator, the market operator (OMEL) and Red Eléctrica de España (REE), which is in charge of electricity transmission, distribution being the responsibility of the utilities.

Main Companies in the Nuclear Industry

As I have already pointed out before, Spain has a company that manufactures nuclear components (ENSA), a company manufacturing nuclear fuel (ENUSA) and several engineering companies working in the nuclear and radiation protection field, the most important being Tecnatom, Empresarios Agrupados, Iberinco, Initec and Soluziona. All these companies provide services and support for both the 9 operating nuclear plants in Spain and numerous plants abroad.

Given their interest, I shall now go on to present the most important economic parameters and activities of the manufacturing companies existing in Spain, ENSA and ENUSA.

Equipos Nucleares S.A. (ENSA)

ENSA was founded in 1973 and is currently owned solely by the state industrial holding company Sociedad Española de Participaciones Industriales (SEPI), which reports to the Ministry of Economy and the Exchequer. ENSA's manufacturing facilities are located in the north of Spain, in Santander, on the Cantabrian coast. ENSA manufactures nuclear components such as reactor pressure vessels (RPV), Steam Generators (SG), pressurisers (PZR) and reactor internals (INT), along with nuclear fuel storage and transport elements such as storage pool racks and dry storage casks, and radioactive waste treatment and conditioning systems such as waste incinerators, concentrators, supercompaction systems, etc.

ENSA has manufactured numerous nuclear components of this type, among them 18 RPVs, 86 SGs, 6 PZR and 7 INTs, as well as 17 new fuel racks for nuclear power plants in countries as diverse as Argentina, Belgium, China, France, Finland, Germany, India, Korea, Sweden and the United States which makes the company one of the world's main suppliers of nuclear components and a leader in exports of steam generators.

ENUSA

ENUSA Industrias Avanzadas, S.A. was set up in 1972 to manufacture fuel for pressurised water reactor (PWR) and boiling water reactor (BWR) nuclear power plants. Its shareholders are SEPI (with 60%) and CIEMAT (with the remaining 40%). The company's manufacturing facility, which started up in 1985, is located in Juzbado (Salamanca). The company has a total of 550 workers.

As regards its nuclear activities, ENUSA has an agreement with the Spanish electricity utilities whereby it acquires the uranium required for the country's nuclear power plants, in the form of concentrates, including the corresponding enrichment services. ENUSA manufactures fuel assemblies for pressurised water reactors (PWR) and boiling water reactors (BWR) under licensing agreements signed with Westinghouse and General Electric respectively. It also carries out core engineering tasks to define the refuelling patterns for the plants, as well as thermohydraulic design or accident analysis.

The Juzbado facility has four fuel assembly manufacturing lines, 3 for PWR, BWR and VVER fuel and one for fuel rods containing gadolinium. It obtains the UO₂ pellets from the enriched uranium concentrates received and manufactures fuel rods and assemblies. The Juzbado facility is authorised to work with uranium enriched by up to 5% and to process up to 400 Tn of uranium a year.

To date ENUSA has manufactured more than 5 500 PWR fuel assemblies, more than 6 000 BWR assemblies and more than 500 of the VVER type. In addition to the Spanish plants, ENUSA has supplied fuel for the Olkiluoto and Loviisa plants in Finland, Forsmark (Sweden), Grundemmingen (Germany), Doel (Belgium) and Cruas, Belleville and Tricastin (France).

The Electricity Industry

In Spain the production, distribution and supply of electricity is undertaken by the Electricity Utilities, the most important being Endesa, Iberdrola, Unión Fenosa, Hidrocantábrico and Viesgo, all of which are integrated within UNESA. There are also other companies involved in the electricity industry, such as the co-generators, independent producers and minor distributors and suppliers. As has been indicated before, there are other agents or institutions directly related to the electricity industry, such as the operator of the electricity transmission system (REE), the Electricity Market Operator (OMEL) and the regulators: the Ministry of Industry, Tourism and Commerce, the National Energy Commission (CNE) and the Nuclear Safety Council (CSN).

As of the end of 2004 the total electrical power installed in Spain amounted to 72 537 MWe, almost 38% of which was hydro power (including other renewable energy sources such as wind), 51% was from fossil fuels (mainly coal and gas) (including co-generation) and 11% from nuclear energy. Gross production in 2004 amounted to almost 280 000 GWh, of which 20% was hydroelectricity, 57% fossil and 23% nuclear. The increase in electricity consumption in Spain was 4.1% in 2004, in keeping with the values experienced in recent years, the average over the last 6 years being 5.6%.

The table showing the Electricity Balance includes more detailed data on electricity production in 2003 and 2004 by generation source, along with the international electricity exchange balances.

Electricity Balance. Total for Spain	Millions of kWh		% Variation
	2003	2004	
Production			
<i>Ordinary Regime</i>			
• Hydroelectric	38 774	29 679	-23.5
• Fossil fuels	108 480	127 022	17.1
• Nuclear power	61 894	63 675	2.9
Total Ordinary Regime	209 148	220 376	5.4
<i>Special Regime (estimate)</i>			
• Cogeneration	33 821	34 188	1.1
• Hydroelectric	5 191	5 326	2.6
• Wind energy	12 304	15 436	25.5
• Biomass/Wastes etc.	4 039	4 336	7.3
Total Special Regime	55 355	59 286	7.1
Total Gross Production in Spain	264 503	279 662	5.7
Internal consumption	11 333	11 989	5.8
Net Production	253 170	267 673	5.7
Consumption in pumping	4 678	4 605	-1.6
International balance	1 264	-3 038	–
Energy available for market	249 756	260 030	4.1
Losses in transmission and distribution	19 408	20 207	4.1
Net consumption	230 348	239 823	4.1

An aspect that warrants special mention is the different weights of the installed power and electricity production by plant type. Nuclear energy, with a power level of almost 11%, produces 23% of the country's electricity, while hydro power, with a level of 26%, produced 13% and wind energy, with an installed power level of over 11% (similar to that of nuclear energy) produced only 5.5%

(almost a quarter of nuclear production). The availability of wind energy is frequently low during periods of peak demand (extreme heat or cold), since these usually coincide with situations of high atmospheric stability and lack of wind, this meaning that most of the installed wind power is inoperable when it is most needed. This implies that wind energy, although helping to reduce energy imports from abroad, requires the installation of the same amount of power in plants able to supply the necessary energy when the wind power is unavailable.

The Spanish Nuclear Power Plants

There are nine nuclear groups in operation in Spain at 7 seven sites, totalling 7 878 MWe. Of these, 7 have PWR reactors based on Westinghouse technology, the exception being one KWU plant, while the two remaining groups have boiling water reactors (BWR) of General Electric design. The first nuclear power plant to enter into operation in Spain was José Cabrera, with 150 MWe, the final shutdown of which is scheduled for April 2006. With the exception of the Garoña plant, which started operation in 1971 and has a power level of 460 MWe, the 7 others have power levels of around 1 000 MWe and entered into operation between 1981 and 1988.

As has been indicated before, in order to ensure that the levels of safety of the Spanish nuclear power plants do not decrease, their operation is monitored closely by the Nuclear Safety Council, which revises all the plant licensing documents, frequently inspects the facilities and has two resident inspectors permanently on site at each. I shall not go into detail regarding the nuclear regulatory structure in Spain since I understand that this issue will be dealt with in detail during the specific paper on the CSN that will be presented this morning.

What I would like to underline is the high values of availability of the Spanish nuclear power plants, which with their average value of 92.7% in 2004 are among the best at world level. The non-scheduled unavailability factor that year amounted to 2.8%, while automatic scrams stood at 1.11 per reactor/year.

Since 1994 several of the plants have carried out work aimed at increasing their rated power, the total power of the Spanish plants having increased by 500 MWe since that year.

Over the last 10 to 15 years, the average availability factor of the plants has remained practically always at around 90%; the non-scheduled unavailability factor at around 3%, with some variations in certain years; automatic scrams at between 1 and 2 per reactor-year and exposure to radiation at values similar to or lower than the averages of other countries.

Finally, it should be pointed out that the production cost of electricity by nuclear means in Spain – Operation and Maintenance (O+M) + Fuel – amounted to 1.10 c€/kWh net in 2004, with O+M costs contributing 0.763 c€/kWh and fuel costs 0.338 c€/kWh. These costs have decreased gradually in recent years. Apart from the above, the plants have provided a total of some 150 Million Euros per year in investment costs.

UNESA

The Spanish Electricity Industry Association (UNESA) is a sector-specific professional organisation for the co-ordination, representation, management, promotion and defence of the interests of its associate utilities. The origins of the association date back to 1944.

Among others, UNESA's activities include collaboration with the Public Administrations and entities responsible for the economic and technical management of the market, the representation,

promotion and defence of the interests of its members for the enhancement and improvement of their activities and services, co-ordinating the actions required in this respect, and relations with other business organisations, associations, federations, etc. at both national and international level.

The five most important Spanish electricity utilities (Endesa, Iberdrola, Unión Fenosa, Hidrocantábrico and Viesgo) are currently members of UNESA and between them contribute more than 80% of Spain's installed power and 78% of production. As regards nuclear issues, 100% of the installed power with its associated electricity production belongs to the UNESA members.

UNESA is managed by a Management Board that includes the Chairmen of the aforementioned utilities. For the performance of its activities, UNESA is organised around different inter-sector working committees, the co-ordination of which is the responsibility of the Committee of Directors. At present, the committees are as follows, by specialist working areas:

- Regulation Committee.
- Economics-Financial Committee.
- Energy Resources, Environmental and Indicative Planning Committee.
- Committee for Legal Affairs.
- Labour Relations Committee.
- Nuclear Energy Committee.
- Communications Committee.

Furthermore, UNESA participates in the activities of a large number of organisations. Thus, in the field of business representation it is part of the Assembly and Management Board of the Spanish Confederation of Business Organisations (CEOE) and of the Economic and Social Council. It is also present in the company operating the Spanish electricity market (OMEL), in Red Eléctrica de España S.A. (REE), on the Market Agents Committee (CAM) and on the Electricity Consultancy Council and the Hydrocarbons Consultancy Council of the National Energy Commission.

UNESA also participates or collaborates in the activities of the Nuclear Safety Council, the National Climate Council, the Spanish Climate Change Office, the Spanish Accounting and Business Administration Association (AECA), the Centre for Energy-Related, Environmental and Technological Research (CIEMAT) and the Energy Diversification and Savings Institute (IDAE). Likewise, the Association is present in the European Commission's European Energy and Transport Forum and Electricity Industry Union – EURELECTRIC, among other international institutions and organisations.

Specifically in the nuclear field, UNESA carries out co-ordination and support tasks through its Nuclear Energy Committee for the utilities and nuclear power plants in areas relating to nuclear safety and radiation protection, regulations, nuclear plant operation, technological aspects, fuel, radioactive waste and R&D projects associated with all these matters. Furthermore, UNESA, on behalf of the utilities, is a member of the US Nuclear Energy Institute (NEI) and Institute of Nuclear Power Operations (INPO) and World Association of Nuclear Operators (WANO), where it has several resident engineers, and participates in the nuclear activities of international organisations such as the International Atomic Energy Agency (IAEA) and the OECD Nuclear Energy Agency (NEA).

The activities of the UNESA Nuclear Energy Committee, which includes the top nuclear managers of the utilities with nuclear interests, as well as the Directors/Managers of these companies, are performed through a Sub-Committee and three subject-specific Commissions (Operation, technology/Safety and Radiation Protection/radioactive Waste). The Committee maintains relations with the CSN via a Liaison Committee, to which various working groups report, and with ENRESA via a "Parity" Commission.

PROCESS OF LICENSING NUCLEAR FACILITIES
(Résumé from the Spanish National Report
for the Joint Convention, 2005)

Nuria Prieto
Legal Advisory Bureau, ENRESA

The process of licensing both nuclear and radioactive facilities is governed by the Regulation on Nuclear and Radioactive Facilities (Span. *Reglamento de Instalaciones Nucleares y Radiactivas*, RINR), approved by Royal Decree 1836/1999, of 3rd December.

According to the RINR, these authorisations are granted by the Ministry of Industry, Tourism and Trade (Span. *Ministerio de Industria, Turismo y Comercio*, MITYC), to which the corresponding requests should be addressed, along with the documentation required in each case. The MITYC sends a copy of each request and accompanying documentation to the Nuclear Safety Council (Span. *Consejo de Seguridad Nuclear*, CSN) for its mandatory report.)

The CSN reports are mandatory and binding, both were negative or withholding in nature with respect to the request and, when positive, as regards the conditions established.

On receiving the report from the CSN, and following whatever decisions or further reports might be required in each case, the MITYC will adopt the appropriate resolution.

System for the licensing of nuclear facilities

According to the definitions included in the RINR, the following are nuclear facilities:

- Nuclear power plants.
- Nuclear reactors.
- Manufacturing facilities using nuclear fuels to produce nuclear substances and those at which nuclear substances are treated.
- Facilities for the permanent storage of nuclear substances.

In compliance with the RINR, the nuclear facilities require different permits or administrative authorisations for their operation, these being the preliminary or site authorisation, the construction permit, the operating permit, the authorisation for modification and the dismantling permit. The procedure for the awarding of each of these authorisations is regulated by the Regulation itself and is briefly described below.

Preliminary Authorisation

The preliminary or site authorisation constitutes official recognition of the objective proposed and of the suitability of the site selected. Awarding of this authorisation allows the licensee to initiate works on the preliminary infrastructures authorised and to request the construction permit for the facility.

Requests for preliminary authorisations are required to be accompanied by the following documents:

- Declaration of the needs to be covered and justification of the facility and of the site selected.
- Descriptive report on the fundamental elements making up the facility, along with basic information on the said installation.
- Preliminary construction project, including the phases and schedule for performance and a preliminary economic study of the financial investments and costs foreseen.
- Study on characterisation of the site and of the area of influence of the facility.
- Organisation foreseen for supervision of the project and quality assurance during construction.
- Description of the activities and preliminary infrastructure works to be performed.

As part of the process of dealing with such requests, a period of public information is opened, this being described in detail in point 3 of this Annex.

Construction Permit

This empowers the licensee to initiate the construction of the facility and to request the operating permit. This request should be accompanied by the following documentation:

- General design of the facility.
- Procurement schedule.
- Budget, financing, performance schedule and framework for technical collaboration.
- Economic study, updating the one submitted with the previous request.
- Preliminary safety analysis, which in turn should include the following:
 - Description of the site and surrounding area.
 - Description of the facility.
 - Analysis of foreseeable accidents and their consequences.
 - Radiological analysis study.
 - Update on the organisation foreseen by the requesting party for supervision of project performance and quality assurance during construction.
 - Organisation foreseen for future operation of the facility and preliminary operating personnel training programme.
 - Pre-operational radiological environmental monitoring programme.
 - Quality assurance programme for construction.
- Technological, economic and financing forecasts for dismantling and decommissioning.
- Administrative awards and authorisations, to be granted by other Ministries and public Administrations, or documents accrediting their request in compliance with all the necessary requirements.

During the construction and assembly of a nuclear facility, and prior to loading of the fuel or the acceptance of nuclear substances at the facility, the licensee of the authorisation is obliged to undertake a programme of pre-nuclear tests accrediting the adequate performance of the equipment or parts making up the installation, in relation both to nuclear safety and radiation protection and to the applicable industrial and technical standards.

The pre-nuclear testing programme will be proposed by the licensee of the authorisation and will require the approval of the Directorate General for Energy Policy and Mines, following a report from the CSN.

The results of the pre-nuclear testing programme will be submitted to the Directorate General for Energy Policy and Mines and to the CSN for analysis before the operating permit may be granted.

Operating Permit

This permit allows the licensee to load the nuclear fuel or introduce nuclear substances into the facility, to carry out the programme of nuclear tests and to operate the facility within the set of conditions established in the authorisation. This permit is first granted provisionally until the nuclear tests have been satisfactorily completed.

The licensee is required to submit the following documents in order to obtain the operating permit:

- Safety study. This must contain sufficient information for performance of an analysis of the facility from the point of view of nuclear safety and radiation protection, and must refer to the following issues:
 - Complementary data on the site and its characteristics obtained during construction.
 - Description of the facility and of the processes that will take place in it.
 - Analysis of foreseeable accidents and their consequences.
 - Analytical radiological study of the facility.
 - Operational radiological environmental monitoring programme.
- Operating regulation. This should contain the following information:
 - List of job posts entailing nuclear responsibility.
 - Organisation and functioning of the personnel.
 - Operating standards under normal and accident conditions.
- Operating technical specifications (OTS's): These will include the limit values for variables affecting safety and the minimum operating conditions.
- Site emergency plan: This will detail the measures foreseen by the licensee and the assignment of responsibilities to address accident conditions.
- Nuclear testing programme. This will describe the tests, their objective, the specific techniques to be used and the results expected.
- Quality assurance manual. This will establish the scope and content of the quality programme applicable to safety-related systems, structures and components.
- Radiation protection manual. This will include the facility's radiation protection standards.
- Radioactive waste management plan: This will include a system for the possible declassification of such wastes.
- Final economic study. This will analyse compliance with the economic and financial forecasts and establish the full and effective cost of the facility.
- Decommissioning and dismantling forecasts: This will establish the final disposal arrangements foreseen for the wastes generated and include a study of the cost and the economic and financial forecasts to guarantee decommissioning.

On completion of the nuclear testing programme, the licensee shall submit the results to the Directorate General for Energy Policy and Mines and to the CSN, along with a proposal for modifications to the OTS's if these were advisable in view of the tests performed.

The CSN will issue a report to the MITYC on the results of the tests and the modifications to be made, where appropriate, and on the conditions of the operating permit for the time period established. The MITYC will then issue the operating permit for the corresponding period.

Authorisation for Modification

The RINR establishes that all modifications to the design or to the operating conditions that affect the nuclear safety or radiation protection of the facility, as well as the performance of tests at the facility, should be previously analysed by the licensee in order to verify that the criteria, standards and

conditions on which the authorisation is based continue to be fulfilled. If, as a result of such analyses, the licensee were to conclude that the aforementioned requirements continue to be met, he may carry out the modifications, periodically reporting to the competent regulatory authorities. If, on the contrary, the design modification implies a change in the criteria, standards and conditions on which the operating permit is based, the licensee shall be required to request an authorisation for it, which must necessarily be issued to him before the modification enters into service or tests are performed. Regardless of the aforementioned modification, whenever in the judgment of the regulatory authorities the modification is major in its scope or implies significant construction or assembly works, the licensee is required to request authorisation for the performance and assembly of the modification, this authorisation to be obtained before initiating assembly or construction activities in relation to this type of modifications.

The request for the modification authorisation should be accompanied by the following documentation:

- Technical description of the modification.
- Safety assessment.
- Identification of the documents that would be affected by the modification.
- Identification of the tests to be performed prior to re-initiating operation.

When required, requests for authorisation to perform and assemble modifications should be accompanied by the following documentation:

- General description of the modification, identifying the underlying causes for it.
- Standards to be applied in the design, construction, assembly and testing of the modification.
- Basic design of the modification.
- Organisation foreseen and quality assurance programme for performance of the project.
- Identification of the scope and content of the analyses required to demonstrate the compatibility of the modification with the rest of the facility and to guarantee that the levels of safety of the facility continue to be maintained.
- Destination of equipment to be replaced.
- Procurement plan and budget in the case of major modifications.

Decommissioning Permit

On expiry of the operating permit, this authorisation allows the licensee to initiate activities for decontamination, the disassembly of equipment, the demolition of structures and the removal of materials, the ultimate aim being to allow for the full or restricted release of the site. The dismantling process will finish with the declaration of decommissioning.

The request for the decommissioning permit shall be accompanied by the following documentation:

- Safety analysis.
- Operating regulation.
- Technical specifications applicable during the dismantling phase.
- Quality assurance manual.
- Radiation protection manual.
- Site emergency plan.
- Radioactive waste management plan.
- Site restoration plan.
- Economic study of the dismantling process and financial arrangements to address it.

The decommissioning permit will include the general approach to be adopted and, if the process is to be carried out in different phases, will regulate only the activities foreseen for the immediate phase of performance.

On completion of the dismantling activities, and once the forecasts of the radioactive waste management plan have been met and the CSN has verified achievement of the technical conditions established in the dismantling programme, the MITYC will issue the declaration of decommissioning, following a report by the CSN. This declaration will release the licensee of the facility from his responsibility as operator and define, in the event of restricted release of the site, the applicable limitations on use and the party responsible for maintaining such limitations and monitoring compliance with them.

Public information and participation in the process of authorising facilities

Both the RINR and the standards relating to environmental impact require processes of public information, the most relevant of which is the one undertaken with respect to the preliminary authorisation of the facility. It would also be interesting to mention Law 38/1995, of 12 December, which recognises the right of any physical or legal person to access information on the environment in the hands of the public Administrations, as well as the obligation of the latter to make available such information. Likewise, Spain has approved and ratified in 2004 the Convention on access to information, public participation in decision-making and access to justice in issues relating to the environment, done in Aarhus (Denmark).

As regards the arrangements for the preliminary authorisation for nuclear and radioactive facilities involved in the nuclear fuel cycle, the RINR establishes that on reception of the request, the Regional Office of the Government in the Autonomous Community in which the facility is to be located will open a period of public information. This will begin with publication in the Official State Gazette and in that of the corresponding Autonomous Community of an announcement indicating the objective and the main characteristics of the facility, such that within thirty days of such publication those persons and entities considering themselves to be affected by the project may present whatever allegations they deem to be appropriate. On expiry of the thirty day period of public information, the said Government Office shall carry out the pertinent checks, as regards both the documentation submitted by the public and the written allegations, and shall issue a report, sending the file to the MITYC and a copy to the CSN.

The legal provisions on environmental impact¹ establish that the following shall be subject to an environmental impact assessment: public or private projects consisting of the performance of works, facilities or any activity relating, among others, to nuclear power plants and other nuclear reactors and facilities designed for the production or enrichment of nuclear fuel, the treatment of irradiated nuclear fuel or of high level waste, the disposal of irradiated nuclear fuel, exclusively the disposal of radioactive waste and exclusively the storage (for more than ten years) of irradiated nuclear fuels or radioactive waste at locations different from those at which they were produced. The process of public information shall be carried out jointly for the environmental impact assessment and the preliminary authorisation for the facility. The environmental impact statement shall be drawn up by the Ministry of the Environment in co-ordination with the CSN and shall be issued jointly with the preliminary authorisation for the facility.

1. “Real Decreto Legislativo 1302/1986 de evaluación de impacto ambiental, Real Decreto 1131/1988 que aprueba el Reglamento para la ejecución del anterior, Ley 6/2001 de modificación del Real Decreto Legislativo 1302/1986, de evaluación de impacto ambiental.”

Furthermore, the RINR also requires that an information Committee be in operation during the construction, operation and dismantling of nuclear power plants, the missions of which are to inform the different entities represented on the development of the activities regulated in the corresponding authorisations and jointly deal with questions of interest for these entities. The committee is presided over by a representative of the MITYC and includes one representative each of the licensee of the facility, the CSN, the Government Delegation, the Autonomous Community and the municipal area or areas in whose territory the facility is located. Other representatives of the Public Administrations may also sit on the Committee when the nature of the matters to be dealt with so requires.

In operation at municipal level is the Association of Municipalities with Nuclear Power Plants (AMAC), which acts as a go-between with the Administration regarding a series of aspects relating to nuclear power plants.

At another level of information and in general the CSN is assigned, among other functions, that of informing the public on matters within its realm of competence, without prejudice to the advertising of its administrative activities in the legally established terms.

THE SPANISH GENERAL RADIOACTIVE WASTE PLAN

José Manuel Redondo
Ministry of Industry, Tourism and Commerce

The Government establishes the general lines of the national policy on the management of radioactive waste and spent fuel through the General Radioactive Waste Plan (GRWP), which is the reference framework for the national spent fuel and radioactive waste management and decommissioning strategies.

In compliance with the requirements established in the Royal Decree 1349/2003, on the ordering of the activities of the ENRESA and their financing, this company has to propose to the Ministry of Industry, Tourism and Commerce (MITYC), every four years or whenever it is required by the MITYC, a proposal of GRWP. When the MITYC considers appropriate, it submits this Plan to the Government for approval, with subsequent notification to Parliament.

The planning term taken into account goes from 1985 to 2070 and, essentially, the GRWP contains the following:

- The current and foreseen generation inventories.
- The actions required and technical solutions foreseen for the management of radioactive waste and the dismantling and decommissioning of nuclear and, where appropriate, radioactive facilities throughout the timeframe of the Plan.
- The economic and financial measures foreseen for the performance of these actions.

The rationale for updating the GRWP periodically is due to the difficulty of forecasting technological and economic-financial related developments of spent fuel and radioactive waste management. The GRWP currently in force is the 5th, approved in July 1999.

The main waste producers in Spain are:

- Seven nuclear power plants currently in operation (9 reactors), with an installed electrical power of 7 876 MWe.
- A fuel manufacturing facility owned by ENUSA Industrias Avanzadas, S.A.
- Some 1 400 radioactive facilities for medical, industrial, scientific and agricultural purposes.
- The CIEMAT nuclear facility (Centre for Energy-Related, Environmental and Technological Research).
- The nuclear facilities being decommissioned (1 NPP and 2 research reactors).
- Others (the most significant amounts coming from some incidents from the steel industry).

In addition, from two reprocessing campaigns the following material will be returned:

- Radioactive waste from reprocessing in France the spent fuel of Vandellòs I NPP, closed-down in 1989, of which 13 m³ of high level vitrified waste and 670 m³ of intermediate level wastes of different types are to be returned to Spain as from the year 2010.
- Minor quantities of fissionable material from reprocessing in United Kingdom small amounts of spent fuel from Sta. María de Garoña NPP, sent before 1983.

According to the current GRWP, the total estimated volumes of radioactive wastes and spent fuel to be managed in Spain are 193 600 m³ of conditioned low and medium level waste and some 10 000 m³ of spent fuel and high level waste.

An updated economic-financial study of the cost of the activities contemplated in the GRWP submitted by ENRESA foresees a total management cost of 12 000 (M€ 2004). The most significant items being spent fuel management (50%) and the dismantling of the nuclear power plants (21%).

The financing scheme establishes the creation of a “Fund for the financing of the activities contemplated by the GRWP”. The revenues of this Fund come from the following channels, including the financial yield generated by them:

- By means of billing to the licensees of nuclear power plants of proportional amounts to the gross power generated are financed the spent fuel, radioactive waste management and decommissioning of nuclear power plants as from 1st April 2005. Until this date, these costs were financed by means of a percentage of the total electricity price.
- The amounts collected by way of tariffs on supply to end clients and access tariffs, resulting from the application of percentages on electricity sales.
- The amounts collected for the management of radioactive wastes arising from the manufacturing of fuel assemblies and from the dismantling of fuel assembly manufacturing facilities.
- The result of billing, through tariffs approved by the MITYC, for rendering of the radioactive waste management service to the operators of radioactive facilities generating radioactive wastes in the fields of medicine, industry, agriculture and research.
- Any other channel for revenues not contemplated in the previous paragraphs.

The strategies of the GRWP currently in force with regard to the spent fuel and high level waste management consist of having available a centralised interim storage facility by 2010, in order to provide a solution to the storage of the wastes and fissionable materials from reprocessing.

This facility will also be required to store wastes other than spent fuel and high level wastes which cannot be stored at El Cabril (the Spanish low and intermediate level wastes disposal facility), as well as the spent fuel itself, as the storage capacity of the nuclear power plants decreases or their dismantling is addressed.

Although this strategy is considered to be basic, it might be complemented with the construction of individual temporary storage facilities at some nuclear power plants, or with another centralised facility serving various such plants.

As regards the definitive management of spent fuel and high level waste, in view of uncertainties in the evolution of the international panorama, difficulties in making progress in the siting process and availability of proven storage technologies, any decision on final solutions is postponed until 2010.

Meanwhile, works should continue along two routes towards progress: definitive geological disposal, and partitioning and transmutation, promoting tracking of and proportionate participation in international programmes, such that, in view of the results obtained from technological developments, the Government might at that time be provided with the information required for decision making and with the basic capacity necessary for their implementation.

In view of the developments of the framework in which the current GRWP was approved, such as, the end of operation of Jose Cabrera NPP as of April 2006, the planned modification of the El Cabril disposal facility to build a storage facility for very low level radioactive wastes, and the proximity of 2010, the revision of the current GRWP in the next future is foreseen.

In this regard, the Commission for Industry of the Spanish Parliament urged the MITYC, in December 2004, to propose a revision of the GRWP to the Government, with a view to updating the strategies defined therein, and in particular those referring to the centralised interim storage facility.

In any case, to meet successfully the intended goals in the management of radioactive wastes it is essential to gain public confidence that:

- The best technological solution has been chosen.
- A satisfactory decision-making process has been established.

THE ROLE OF THE NUCLEAR SAFETY REGULATOR

Isabel Mellado

Technical Director of Nuclear Safety, CSN

Introduction

The Consejo de Seguridad Nuclear (CSN), or Nuclear Safety Council, is the only Spanish institution qualified in nuclear safety and radiological protection. Created in 1980, the CSN is independent of the Central State Administration, and possesses its own legal standing, estate and resources acquired directly from tax revenues.

The CSN proposes regulations and advises the government on subjects within its competence, including the criteria for siting nuclear facilities once the autonomous regions have been informed. The CSN is responsible for issuing mandatory and binding reports to the Ministry of Industry, Tourism and Commerce, and for inspections and evaluation of the facilities included within its realm of competence throughout their phases (construction, start-up, operating and decommissioning). It is also responsible for the radiological control and surveillance of workers, the general public and the environment, as described below. In 1999, a new responsibility was assigned to the CSN to perform studies, assessment and inspections in relation to all phases of radioactive waste and spent fuel management.

The CSN reports to the Spanish Parliament and is not subject to the hierarchy or auspices of the Government or the organisations in charge of promoting nuclear energy.

The Council itself is an Associative Body comprised of 5 members, appointed by Parliament for a 6 year term (these members cannot be removed). Under this Council is situated an extensive technical body. A General Secretary is seconded by Technical Directors in the area of Nuclear Safety and Radiological Protection. As well there are a R&D Office, an Inspection Office, and a Technical Standards Office. The CSN counts 446 workers, of which 191 are university graduate specialists in nuclear safety or radiological protection. The average age is 45 years. Ongoing training is provided in technical specialties and management.

Main Areas of Intervention and Activities of the CSN

The CSN has five main areas of intervention. These are:

Installations

- Inspects and controls the operation of nuclear and radioactive facilities and enforces the correction of possible deficiencies.
- Monitoring and control of nuclear and radioactive facilities.
- Lends approval for modifications.
- Studies and reports on each nuclear and radioactive installation project.

Worker Safety

- Radiological protection.
- Dosimetric control.
- Personnel licences.

Public

- Training.
- Information.
- Radiological protection.

Environment

- Impact control from installations.
- Nationwide radiological quality (Art. 35 of the Euratom Treaty).
- Exceptional activity on non-regulated facilities.

Emergencies

- Provides technical support in nuclear or radioactive emergencies.
- Participates in the preparation of the emergency plans.

As well, the CSN encourages and promotes research, performs assessment at institutions, promotes international relations, and develops regulations, including regulatory proposals to the government in matters of safety and radiological protection.

The CSN performs inspection and licensing functions at Spain's nine working reactors (on 7 plant sites). Similarly, four other installations representing the front and back ends of the fuel cycle (including the El Cabril LILW storage facility) are monitored and regulated by CSN. A total of 24 301 other radioactive installations (commercial, research, industry, and medical applications) are under CSN purview. All in all, 89 030 workers in these industries – with the very dominant majority in health delivery settings – are subject to dosimeter control (a data bank stores records for 219 549 workers).

The CSN's five-year plan for research and development covers nine areas:

1. Fuel
2. Primary circuit pressure barrier.
3. Containment and severe accidents.
4. Probabilistic Risk Analysis and human factor studies.
5. Radiological protection of humans.
6. Impact assessment and exposure to environmental radiation.
7. Radiological impact reduction: material and waste management techniques and intervention techniques in case of accidents.
8. Spent fuel and high-level radioactive waste.
9. Advanced nuclear power plants.

The last reported budget (2004) for R&D reached almost 3.4 million euros, out of a total operating budget of 48.2 million.

In the international area, CSN has bilateral agreements with regulator bodies from 19 countries. Spain is represented in working groups at IAEA, NEA and the European Union. CSN is a member of regulator associations INRA, WENRA, and the Latin American Regulator Forum.

Domestically, the CSN maintains relations with other institutions. Information on nuclear safety and radiological protection is provided to the national House of Representatives and Senate, as well as

to the Legislative Assemblies of Autonomous Regional Government. The regulator body collaborates on environmental surveillance with the national Environment Ministry and Autonomous Regional Governments. Emergency planning and response is an area of collaboration with the national Ministries of the Interior and Defence. As for the transposition of EC Directives, CSN works hand in hand with the national Ministries already mentioned, as well as the Ministry of Economy, etc.

In the areas of health, training, and energy, the regulatory body also plays an advisory role to the relevant national and regional ministries and public administrations. It provides advice on training to the Ministry of Education and Science and Universities. The CSN also acts as an expert on nuclear safety and radiological protection to the Courts of Justice, the Defender of the People and other institutional organisations.

Public information and communication

One of the functions established by the Law creating the CSN was to inform the public on matters of its competence. Main current activities carried out in this field are the following:

- Public information to the media.
- Expert presentations and lectures.
- An internet site (<http://www.csn.es>), which received 50 892 hits last year.
- Issuing of publications: periodic CSN publications include the Annual Report, reports to Parliament, technical publications and a quarterly magazine.
- A public information centre with interactive displays, which welcomes over 5 000 student visitors per year.

The objectives and activities in this area for the coming years are covered by the recently published CSN Strategic Plan aimed at increasing CSN's credibility in society.

The new CSN Strategic Plan

A Strategic Plan for the period 2005-2010 was approved by the CSN in January 2005 with a view to meeting in a systematic way the ever-increasing obligations attributed to it by law, and responding efficiently to the expectations of society and stakeholder groups. After setting out the Mission and Vision of the Regulatory Body (see Box 1 below), the Plan summarises the analysis of the social environment and describes the results expected, the strategies to be followed in the main areas (Safety and protection, Management and organisation and Social credibility), and associated objectives. The Plan states the most significant activities to be carried out to achieve the objectives.

In particular, the main strategic objectives and activities regarding waste management and decommissioning are:

- Complete the set of standards for regulating radioactive wastes and spent fuel management.
- Develop an integrated model for the licensing process and control of nuclear installations, including the end of operational lifetime, decommissioning and management of radioactive wastes and spent fuel.
- Develop new tools for the safety assessment of radioactive waste storage installations.

As for developing social credibility, the following objectives and activities are targeted:

- Develop a communication policy centred on transparency and credibility.
- Establish systematic communication with stakeholders in order to know their expectations and opinions and to promote mutual confidence.

- Facilitate the participation of stakeholders in relevant CSN decision-making processes.
- Facilitate the access to information.

Conclusions

The CSN, created by Law in 25/1980, is the sole Spanish technical authority competent for nuclear safety and radiological protection. It is independent from the General State administration, possessing its own legal standing and estate, and reporting directly to the Parliament. The CSN also acts as an expert on nuclear safety and radiological protection to the Courts of Justice, the Defender of the People and other institutional organisations. One of the functions established by the Law creating the CSN is to inform the public on matters of its competence. The CSN Strategic Plan for the period 2005-2010 (approved in January 2005) considers social credibility as one of the main objectives for the coming period of time, establishing strategies to improve communication with the public and the stakeholders with a view to responding efficiently to their expectations.

Box 1. Mission and Vision imparted by the CSN Strategic Plan 2005-2010

Mission

To protect the workers, the general public and the environment against the harmful effects of ionising radiations, ensuring that nuclear and radioactive facilities are operated safely by the licensees and establishing preventive and corrective measures for radiological emergencies, regardless of their origin.

Vision

CSN is: An organisation independent from the Public Administrations and the licensees of the facilities and reporting to the Parliament of the Nation. An organisation technically qualified for its proposals and decisions to be rigorous and its activities to be carried out efficiently, effectively and transparently, such that it warrants the trust of Spanish society and constitutes a point of reference at the international level.

THE ROLE OF PARLIAMENT

Rosário García Velasco
Parliamentarian
Industry, Trade and Tourism Commission

Rosario García Velasco, Parliamentarian, Member of the Industry, Trade and Tourism Commission, explained the nature and role of the Spanish Parliament in nuclear affairs.

Spain's Parliament is composed of two houses. The Congress, with 300-400 members, represents a provincial electoral constituency. Congress persons are elected through universal, free, equal, direct and secret suffrage. The Senate is the house of territorial representation. Spain's Autonomous Communities each appoint 1 senator plus one more per million inhabitants. On a general level, the two houses of Parliament assure the representation of the Spanish people. Among the competences attributed by the Constitution are: exercising the legislative powers of the State, approving annual budgets, and controlling the actions of the Government.

The Parliament is directly involved in energy planning, deliberating about the weight of different production sources in the energy mix, how to guarantee quality in supply and environmental compatibility, and how to combine the interests of the different economic and social agents through appropriate legislation. Government, acting on proposals by Parliament, has authored a national CO₂ emissions assignment plan, considered the place of renewable energy sources, savings and efficiency plan in the Iberian electricity market (MIBEL), and taken measures to promote productivity.

A number of recent activities of the parliamentary Industry, Trade and Tourism Commission relate to nuclear matters. The Commission found that the existing Nuclear Energy Act appears obsolete and does not meet today's requirements. Therefore, the Commission is planning to submit to the Parliament amendments to this Law. In addition, the Commission proposed to amend the Law 15/1980 defining the responsibilities of the Nuclear Safety Council (CSN), with the aim of expanding the controlling authority of this regulatory body. Note that the CSN informs Parliament of its activities by way of annual reports. Each year the Congress sets up a panel to analyse this report and recommendations are made, these being considered and passed by the corresponding Commission.

It was also decided in 2004 that the General Radioactive Waste Management Plan should be updated. Finally, the Basic Nuclear Emergency Plan (PLABEN) was approved and developed.

The Commission found that determining health risks related to nuclear activities requires epidemiological studies. The Green and Socialist factions agreed funding for such studies.

Ms. Velasco recalled that all members of the Parliament – including the members of the Green Party – unanimously supported the development of a centralised temporary radioactive waste storage facility. There is also agreement that in the course of finding a location for the facility, transparency of decision-making processes and public participation should be strengthened, objectivity and security should be guaranteed, and political consensus should be sought.

Finally, in 2005 the Parliament examined the Vandellòs incident¹, and sent resolutions to Government, the CSN, and the licensees. These called for higher standards in operations and auto-control by the licensees, but also, greater and improved control by the CSN. These measures were seen to be necessary to restore social credibility and, in turn, trust in the nuclear activity.

In sum, Parliament's intervention in these various domains is an opportunity to reinforce the basis of public trust and confidence in the safe management of Spanish nuclear affairs.

1. The incident consisted of the partial corrosion of some pipe in the secondary cooling system. There was lively regulatory discussion regarding the requirements for information from the NPP to the Regulatory Authority (CSN).

**PAST EXAMPLES OF CASES AND ACTORS AND
THE EMERGENCE OF STAKEHOLDER INVOLVEMENT
FOR DECISION MAKING IN SPAIN**

Case 1. The 1992 Senate Working Party

THE SENATE WORKING PARTY ON HLW MANAGEMENT IN SPAIN – HISTORICAL PERSPECTIVE

Jorge Lang-Lenton
Corporate Director, ENRESA

An historical account is given of the attempt to establish an underground disposal facility for HLW in Spain. The site selection process, which was commenced in 1986, was aimed at finding the “technically best” site. A detailed government plan (1st General Radioactive Waste Plan of 1986) foresaw site designation by about the year 2010, after successive phases of screening for favourable geological formations, regions, areas, and zones. Site characterisation was then to take place until 2015, followed by construction for licensing and operations by 2035. After thirty years of operation, the underground disposal facility would then be closed for monitoring in 2065.

However, societal unrest disrupted this plan. When 40 candidate siting areas were identified in the mid-1990s, information leaked out, creating vigorous public opposition in all of these locations. Mid 1995 saw the start of demonstrations against the HLW repository project. By the end of the year, demonstrations were spreading all across Spain. In October 1996, at the request of the Ministry of Industry and Energy (MINER), the Senate Commission on industry, trade and tourism organised a working party to study the issues arising from radioactive waste, through hearings of more than 50 experts and economic partners from Spain, and international witnesses.

In January 1998 MINER issued a press release: “No underground radioactive waste repository will be authorised in Spain in the short or medium term. This decision will be subject to ratification of the parliament and included in the bill on radioactive waste to be drafted following the conclusions of the working party. Any other decision concerning underground disposal will be postponed till the year 2010...”

The Senate working party issued conclusions in April 1998. No consensus was reached among the political parties. However, concrete proposals were made. The Senate proposed to continue R&D on geological disposal and on P&T, to reduce waste volume, and to develop an energy policy that relies more on renewable energy sources. The working party also suggested that public participation be promoted. Recommendations included:

- “A sound effort shall be undertaken to promote those R&D projects necessary in the areas of actinide partitioning and transmutation, incineration of fission products, advanced reprocessing and technologies associated with transmutation, as to complement the existing waste management practices.”
- “It is also necessary to carry out a relevant effort to promote maximum utilisation of renewable sources. Using the best techniques for the reduction of waste production is also an objective.”
- “To promote information and public debate through campaigns as wide as possible and oriented to the widest public, herein included is a plan for training in energy matters from primary school.”

The 5th General Radioactive Waste Management Plan, which was developed in 1999, took these proposals into consideration. In particular, the Plan:

- Highlights the necessity of better approaching the population prior to making decisions on what kind of definitive management should be implemented : “... it should be pointed out that, in view of the obvious sensitivity of society to matters relating to radioactivity, based among other things on a lack of public understanding of the true nature of the technical solutions proposed, it will be necessary to carry out the widest possible information/educational campaigns, in order to facilitate better knowledge and understanding both of the problem to be solved and the technology to be used to achieve such a solution”.
- Emphasises that “... any action in this field (HLW management) will require the furthest-reaching communications campaigns possible, with a view to providing the public with whatever information might be necessary; this is especially important because of the high level of social sensitivity to issues relating to radioactive waste”.

Regarding underground disposal, the government postponed any decision until 2010.

The major elements of the 5th General Plan were:

- Site selection.
 - Suspension of activities.
 - Maintenance of information.
- Systems design.
 - Incorporation of the concept of retrievability in conceptual designs.
- Safety assessment.
 - Performance of the ENRESA 2000 study.
 - Overall analysis.
 - Incorporation of R&D results.
 - Orientation of R&D requirements.
 - Analysis of possible impact of new technologies.
- R&D Plans.
 - Completion of site characterisation techniques.
 - Participation in international underground laboratories.
 - Participation in EU 5th Framework Programme.

At the end of 2004 a decision was made by Parliament to establish a centralised storage facility for HLW.

Some lessons were learnt in the course of this history:

- There is not a “single adequate” site for a HLW/SF repository. In fact, the best site is the possible site, with societal support. The role of geological barriers could be supplemented with improved design of engineering barriers.
- Public acceptance and participation were lacking in the former strategy. These turned out to be crucial for its continuity.
- The need to take into account public considerations appeared soon after the Senate started to analyse the issue.
- HLW/SF is a matter of national concern. Apart from being a bipartisan issue it requires an active involvement of all actors, mainly those at local level.
- The 5th General RW Plan was sensitive to public demands. Future developments of the plan will require renewed attention to stakeholder views.

**REPORT ON THE SENATE WORKING PARTY FOR THE STUDY
OF THE PROBLEMS ARISING FROM RADIOACTIVE WASTE CONSTITUTED
INSIDE THE COMMISSION OF INDUSTRY, COMMERCE AND TOURISM
FROM OCTOBER 30, 1996 TO APRIL 22, 1998**

**Antonio Rovira Viñas
Universidad Autónoma de Madrid**

On 30 October 1996, after approval of a motion presented on 18 October 1996, a proposal for the Study of the Problems Arising from Radioactive Waste was agreed inside the Senate Commission of Industry, Commerce and Tourism; a party worked for two years from that date, with the purpose of studying the problem from all the points of view, and presenting plans directed to the solving of such a set of problems, as well as the legal instruments to make it possible.

The working party was supported from its inception by the Honourables:

Mr. L. Antonio Chao Gómez	GPP.
Mr. Francisco Xavier Albistur Marín	GPSNV.
Mr. José Luís Alegre Escuder	GPS.
Mr. Pedro Luís Calvo Poch	GPP.
Mr. Antonio García Correa	GPS.
Mr. José Nieto Cicuéndez	GPMX.
Mr. Joan Horaci Simó i Burgués	GPCIU.
Mr. Juan José Unceta Antón	GPP.

In the course of the works of the party, Senator Núñez Rodríguez (GPP) replaced Senator Chao Gómez (GPP) as Speaker.

The working party held more than 50 auditions and work meetings, as well as interviews about the issue with foreign experts.

This report has been elaborated, as a consequence of all that work, with the main objective of presenting in a summarised way the principal conclusions of the different sectors represented in the auditions that took place during the whole process.

Principal Conclusions

The storage of radioactive waste is a subject of State.

The totality of the represented sectors considers the question of the storage of radioactive waste to be a problem of State, and that all the decisions relative to its treatment and final disposal has to be made in the scope of the State. In spite of this general conclusion, the Autonomous Communities declare that this does not justify the exclusion of the competences of the Autonomous Communities on any matter. In that sense, the Local Entities think that any decision made to this respect must have the authorisation and the social acceptance of the town where that waste is going to be disposed. This is a position on which almost all the speakers agree.

It seems out of the question that such a decision be approved, legally or politically, without the agreement of all the administrations involved. If this agreement were not necessary from all the points of view, such a proposal as that studied by this report would be unneeded.

Even the Research Centres add that the problems of high level radioactive waste must be solved through a consensus that includes the three administrations, organisms and social agents involved.

Accomplishment of public information campaigns

With a social sensitivity for all the subjects related to radioactivity confirmed, the totality of the represented sectors proposed that any decision that is taken on the matter must be governed by the principles of information, transparency and participation.

The electrical sector has consented a great effort in that direction by creating, within UNESA (Spanish Electric Industry Association), the Nuclear Industry Forum, which tries to influence society by giving information in a clear, loyal and sincere way about the utility of nuclear energy in the development of the country. Also, ENRESA (Radioactive Waste National Company) has developed a programme whose purpose is to inform the population about their projects.

Elaboration of rules and legislative initiatives

All the represented sectors concluded that the promulgation of a Law that regulates the system of storage of nuclear waste was necessary. In that sense, the appearance of Mr. Christian Bataille, Representative of the National Assembly of France, was important; he explained the most remarkable aspects of the French Law, regulating the disposition of these types of waste. Among the most important aspects of the regulatory instrument, there is the authorisation for the construction of several research laboratories, as well as the indication that research on surface storage and on transmutation must be pursued. Also, he indicates that the definitive decision with regard to the construction of a Deep Geologic Storage facility will have to be taken in 2006 and he proposes mechanisms of compensation for the regions that host the geologic laboratories.

Moreover, the Local Entities, with the agreement of all the participants, consider that the Spanish Law must establish the authorisation of the Town Councils as a requirement for the exercise of the activity and the regulation of the compensation mechanisms. The Autonomous Communities also expressed themselves regarding to the necessity of regulating these compensation mechanisms. On the other hand the Ecologists said that, apart from regulating the storage of the radioactive waste, this Law must also consider the closing of the nuclear stations.

Storage of Radioactive Waste

Different positions exist with regard to the best form of storing radioactive waste, in a temporary way as well as in a definitive one.

With regard to temporary storage, some, as it is the case of the electrical sector, think that the safest and most economic solution is temporary storage in the nuclear power stations, since it implies less manipulation and more simplified control while we look for definitive solutions. On the contrary, ENRESA esteems that it is more logical that there be a single Temporary Warehouse for the centralisation of the nuclear waste, for reasons such as the reduction in costs and the reduction of risks in the final transport. As to the research centres, the positions that these maintain on the matter are divided; thus the CIEMAT (Centre of Energetic, Environmental and Technological Research) and the College of Physicists of Spain were in favour of the storage in the same nuclear power stations, whereas the representatives of the CSN (Advisory Group on Nuclear Security), consider that the ATC (Temporary Centralised Storage) is more recommendable.

With regard to the definitive storage, the majority of the representatives considered that the appropriate thing is to continue investigating before making a definitive decision, finally, on the way to handle these wastes.

However, most of the represented sectors consider that according to present knowledge, the most feasible solution is deep geologic storage, with the exception of the representative of the University of Zaragoza, Rafael Núñez-Lagos Rogla and D. Juan Antonio Rubio (international representative) who show preference for the process of Transmutation devised by Professor Rubbia.

Another sector that opposes the construction of this type of locations is the Ecologist, alleging that they have to be rejected because of their implications for present and future generations, because there is no geologic formation that guarantees against radionuclides emigrating to the surface and the aquifers, among other reasons.

In relation to the creation of International Deep Geologic Storage, the positions were also divided; while ENRESA and the Universities consider that, from the scientific and economic point of view, the creation of one or several international deep geologic storages is more feasible, the Research Centres consider this a nonviable plan. If it is difficult to get to an agreement in a place within a single State, it will be difficult for 21 sovereign states to come to an agreement about a place to store the waste generated in all the Union.

With regard to the process of Transmutation devised by Professor Rubbia as a mechanism for treatment of nuclear waste, all consider that it is necessary to continue investigating this and other projects with the same purposes. In relation to this, the participants almost unanimously consider that a centre of research on radioactive waste is needed, with the corresponding programs and scientific personnel, which investigate the possible treatments with the objective of reducing its polluting load, together with the decision about a location.

Promoting renewable energies and reduction of waste

All the represented sectors indicated the necessity of promoting renewable energies as a more effective mechanism to avoid the generation of radioactive waste. With regard to the renewable energies, the ecological sector indicates that windmills represent one of the most feasible options in the sense that they cause less environmental impact. The Universities indicate that renewables must be more and more competitive.

This is what we can say about the working party that we had to present in the FSC Workshop in Hospitalet.

**PAST EXAMPLES OF CASES AND ACTORS AND
THE EMERGENCE OF STAKEHOLDER INVOLVEMENT
FOR DECISION MAKING IN SPAIN**

Case 2. The Dismantling of the Nuclear Power Plant Vandellòs-I

REPRESENTATIVE OF THE MUNICIPALITY

Josep Castellnou Barceló
Mayor of Vandellòs i l'Hospitalet de l'Infant

The decommissioning of the Vandellòs-I nuclear power plant was a big challenge for the host community of Vandellòs i l'Hospitalet de l'Infant and the close-by region. Closing down of the facility resulted in a rise of unemployment and a decrease of municipal income. The public was concerned with three issues: safety, transparency and information about the decommissioning, and economic future. Therefore, from the very beginning, municipal governments entered into negotiations with ENRESA on socio-economic benefits, including local employment in dismantling activities, and other types of financial and non-financial compensation. The ADE business association, i.e. a network of business organisations was created that guided the allotment of work to local firms.

To satisfy public demand, local municipalities focused on the triad of safety, dialogue and local development, considered the three “pillars of trust”. A Municipal Monitoring Commission was created, made up of representatives of affected municipalities, the regional government, the ADE business association, trade unions, the local university, the NPP management and ENRESA to monitor the dismantling process and regularly inform the local public. Items that were handled by this Commission included:

- Work process monitoring.
- Workers.
- Materials Control.
- Conventional and radioactive or contaminated waste management.
- Emanation waste management (liquid and gas).
- Safety (training and accidents).
- Surveillance (radiological and environmental: dust, noise).
- Effects.
- Fulfilment of agreed conditions.

A number of communication tools and channels were used, e.g., public information meetings, an information centre, the municipal magazine, the municipal radio station, and meetings with representatives of the local press. Particularly innovative was the idea to ask academics from the University of Tarragona to help with “translating” technical information into language that could be understood by all.

REPRESENTATIVE OF THE NUCLEAR SAFETY COUNCIL

José Luis Revilla
Dismantling Project Head, CSN

Just two years ago (September 2003), an international seminar was held in Tarragona, very near this location, in connection with the entering of the Vandellòs-1 nuclear power plant into the “safestore” or the care and maintenance period of its decommissioning plan. This international seminar was focused on Strategy Selection for the Decommissioning of Nuclear Facilities and more than 100 high-level specialists from all over the world and several mayors from both Europe and North America attended. The seminar encouraged open discussions to share lessons learnt from several decommissioning projects.

A number of common factors were defined for successful implementation of decommissioning strategies: i.e. safety, technical feasibility of decommissioning options, risk-informed progression of D&D activities as the project proceeds, maintenance of competency and corporate memory throughout the project, waste management and disposal capability, financing that suits the scope of the project, a well-defined risk-informed and performance-based regulatory process, and establishment of effective communications with local and regional governments and key stakeholders at the earliest opportunity before decommissioning.

The industry and the site and plant owners as well as the various regulators need to understand the many issues of concern to the public stakeholders and the need to consider how and when to address them. Examples of the concerns include employment in the area, the contents of the decommissioning plans, the future use of the site, the quantities and types of waste that will be produced and how each type will be dealt with, the environmental effects during the planned decommissioning process and afterwards, any extra traffic during the decommissioning, the recycling of materials and the cost and source of funding.

The seminar attendees were asked to identify the issues that were of significance to them in order to facilitate stakeholder involvement and confidence: early discussion of plans among stakeholders is important at the earliest opportunity before decommissioning but also the need to continue this engagement throughout implementation of the full decommissioning project was pointed out in the conclusions. Societal factors were considered key to successful decommissioning projects. Three “Pillars of Trust” were identified in the seminar to satisfying social demands (safety, participation and economic development).

The assurance of safety is essential for communities in the locality of a nuclear facility. This applies to all phases of the plant’s life, including the decommissioning and dismantling period, and it requires adequate information about the safety of the facility and about plans for decommissioning. In the specific context of D&D, participation in decisions was judged also to be essential and it was emphasised again that the decide-announce-defend policy is not conducive to progress. It was suggested that the best way forward is an early co-operation programme between different stakeholders (regulators included) to oversee the community interest.

This new dynamic of dialogue in the decision-making process has also a particular significance for regulatory authorities. It has meant providing the other stakeholders with transparently valid information on safety and environmental matters, including waste management, living up to commitments, and being constantly available to answer questions and hear comments from them. Stakeholder confidence and trust in institutions are seen as key conditions for successful societal decision-making process for decommissioning of nuclear facilities.

As you know the Spanish regulations that govern the process of awarding licenses, in particular the Royal Decree on Environmental Impact Assessment, require a process of public information in connection with the application for the decommissioning authorisation. As a matter of fact, in the case of Vandellòs-1, the decommissioning EIA (Environmental Impact Assessment) was really the primary mechanism for involving stakeholders and local authorities in the planning of activities that affect such social and environmental issues. The EIA was submitted in 1996 to the corresponding Governmental Delegation (at that time the Directorate General for Environmental Quality and Assessment) in order to get the Environmental Impact Statement. This EIS had to be issued before the administrative consent to implement the decommissioning strategy is granted by the Ministry of Industry. An extensive programme of public consultation about the Vandellòs-1 Decommissioning Plan was held before such Environmental Impact Statement was accepted in 1998. A summary of the EIA was sent by the Competent Authority to 110 different groups likely to be affected, including many local groups.

Furthermore, Spanish regulation also requires that during decommissioning of any nuclear power plant there is to be an information committee, a collegiate organisation whose functions are to inform the different entities represented of performance of the activities regulated in the corresponding authorisations and jointly deals with questions of interest to such entities. The Dismantling Information Committee for Vandellòs-1 Decommissioning Plan is presided over by a delegate of the Ministry of Industry, Trade & Tourism. The Committee is also made up of representatives of the Ministry of the Environment, the Nuclear Safety Council, the Government Delegate in Catalonia, the Regional Government of Catalonia and the Town Council of Vandellòs-I l'Hospitalet de l'Infant.

As a suggestion concerning this Dismantling Information Committee, the CSN established, during the most active period of dismantling of the facility (from 1999 to 2003), a Resident Inspector. The Resident Inspector was in charge of continuous tracking of the different activities being performed at the plant, and made periodic visits to check the progress made in dismantling on the spot. The CSN is also in charge of analysing each and every one of the major activities and of giving the go ahead for them once the guarantees in place are considered and contrasted.

It is worth also to mention here the collaboration program between the CSN and the “Servei de Coordinació d'Activitats Radioactives” established in order to involve the regional autonomous Authorities in the decommissioning process and to guarantee the required transparency to the general public. Such a “Servei” is the competent technical organisation of the autonomous regional government of Catalonia in charge of supervising, not the nuclear facilities as Vandellòs-1, but the radioactive facilities in the region. In all main inspections performed during the past active decommissioning period of the facility, the CSN Project Manager (myself) was accompanied by an Inspector of the “Servei” to oversee together the full process of dismantling of the facility.

Since the main mission of regulators is to protect public health and environment, the CSN has played an important role in the overall decision-making process of Vandellòs-1 Decommissioning Plan, in ensuring its credibility, and therefore in favouring confidence in the process. To be fully effective in carrying out their mission, regulators need not only be independent, competent and reliable, but also achieve the confidence and earn the trust of stakeholders and public. The regulatory oversight

that CSN has performed during the last decommissioning period of Vandellòs-1 has been regularly published in its annual report to the Parliament. But CSN has also frequently provided information to the public and different media and stakeholders of issues within its realm of competence.

To conclude, the CSN should be, and I think, this is the case in Vandellòs-1 Decommissioning Plan, the “guarantor” of safety and the “people’s expert”, acting as an accessible resource to stakeholders addressing safety concerns.

REPRESENTATIVE OF LOCAL COMMITTEE

Carlos Barceló
Vandellòs y L'Hospitalet de l'Infant Business Association

Good morning,

My name is Carlos Barceló and I am the President of the Vandellòs y L'Hospitalet de l'Infant Business Association (ADE).

I have been asked to explain our relationship with ENRESA and the relationships that were established with this company by our business people as a result of the dismantling of the Vandellòs-I Nuclear Power Plant.

The ADE was set up precisely with our sights set on the work that might arise as a result of the dismantling process.

They were times of crisis and we were attempting to achieve the maximum volume of work that might be undertaken by the business community in this municipal area, while promoting local employment.

ENRESA had pointed out on numerous occasions that promoting local employment was one of its priority objectives during the dismantling of the Vandellòs-1 nuclear power plant. The company considered that this option was backed by the high level of experience and professional specialisation that existed in the area surrounding this site.

The Association having been set up, at all times in collaboration with the Town Council, which was at our side throughout the process, we initiated conversations with ENRESA. It was at this time that we were able to verify the high degree of adaptability of the business fabric in the area and its capacity to respond to the widely varying operational requirements of a project as unique as is the dismantling of a nuclear power plant.

Having considered various approaches to the problem, ENRESA proposed that a percentage of the total amount of work to be performed within the framework of the project be set aside for the local business community, this amount being indicated in specific figures. Another proposal was the joint organisation of training activities in areas relating to the work to be carried out during dismantling.

We accepted these proposals and time was to demonstrate that they were fulfilled and even exceeded.

At the end of each year the ADE met with ENRESA to check that things were progressing satisfactorily.

The profiles of the local businesses that participated in the project were as follows:

- Civil Works Contractors.
- Metallic Constructions.

- Cleaning Companies.
- Electricians.
- Painters.
- Gardeners.
- Pest and Insect Control.
- Printing.

Over the 5 years that the dismantling lasted, the volume invoiced exceeded 1 000 million pesetas (six million euros).

Local employment also benefited: of the on average 323 workers that intervened in the dismantling of Vandellòs-1, 226, or exactly 70% of the total, were from municipal areas close to the plant.

It may be seen that apart from the immediate economic issue, the dismantling generated a way of working and an experience that has allowed certain companies to export their services to other parts of the country. It also allowed some of the workers to specialise in activities such as security or surveillance.

In short, this has been the result of the collaboration between the business community and the dismantling works, which may be defined as having been very positive.

REPRESENTATIVE OF THE MEDIA

**Francesc Domènech
Tarragona Media**

When the incident that gave rise to the closure of the Vandellòs-I nuclear power plant took place, in 1989, the way in which the issue of nuclear energy was dealt with in the Spanish media was decidedly partial. Society mistrusted nuclear energy, a fact that was reflected in the media, and the nuclear sector mistrusted the media and in general opted not to participate in the debate. While the anti-nuclear environmentalist groups demonstrated a spectacular ability to place on the table of social debate those issues that were in their interest, the nuclear sector responded in most cases with silence, or even with pressure and attempts to silence. This attitude generated a lack of trust in the media, among the local institutions – which were much pressured by the members of the public – and in society in general. The sector lacked something essential: credibility.

The 1989 accident contributed to changing this state of affairs since, once the initial impact had been overcome, the decision to shut down the plant in a sense reduced the intensity of the debate. Above all else, it led to a gradual change of attitude in the nuclear sector and among the companies and professionals involved. They began to realise that the worst thing they could do was generate mistrust and that the best way to dissipate such mistrust was with information. They realised that there was a need to do away with the problem of their lack of credibility.

The first sign of this change of attitude in the sector, at least in Tarragona, was brought by ENRESA, when it began to undertake the dismantling of Vandellòs-I, as commissioned by the Government.

The arrival of ENRESA in Vandellòs implied a display of change. While the nuclear industry was changing little by little, adapting an already existing structure, ENRESA, the as yet little known public company in charge of managing the most stigmatised issue involved in nuclear energy, waste, arrived with an entirely new concept: the inclusion from the very start of a communication policy in the general dismantling project.

No sooner had the company landed in Vandellòs, it became obvious that there was an obsession to develop the educational aspects of its project, which certainly included a series of characteristics that made it interesting: there were no precedents at world level, it constituted a technological challenge for the country and it was directed by a public company whose mission is to find solutions to one of the nuclear industry's pending problems, radioactive waste. From the very start the company undertook actions that seemed to capture the spirit of certain demands made years before: it set up a tracking commission in agreement with the local council, which included environmentalists; and it took the initiative of moving closer to the media through the Professional Association of Journalists, which allowed a relationship of openness and mutual trust to be developed, a relationship in which both parties were quite clear as to their respective roles in the process. For the first time we journalists were provided with fluid information, information that was often complex from the technical point of view, and we were given this without being asked for favourable treatment in return. Above all else, the company developed the educational aspects explaining what they were dealing with.

The journalists soon realised that when they rang ENRESA the response was not an attitude of defence. Rather, it was an attitude that “normalised” ENRESA’s presence in the area, and much has been learned throughout this period.

I have the feeling that the communication policy that ENRESA designed for this project has allowed it to work quite comfortably. There is one irrefutable fact: ENRESA has not met with any social opposition. This has been quite obvious in the media where, if no opinions and standpoints questioning the performance of the dismantling project have been reported, it has been because there have not been any. It is also quite clear that those contrary positions that have been put about have not achieved the social support that other energy-related projects have had, and continue to have, in the area.

Evidently it is easier to normalise relationships when faced with a project for the dismantling of a nuclear power plant – after the party somebody has to clean up, and nobody would criticise anybody for carrying out a task that nobody wants to do as long as it is done with the minimum level of correction – than it is to achieve a comparable attitude with respect to other types of projects that, as is known beforehand, would meet with a NO written in large capital letters.

It is important to be aware of this reality because, while ENRESA has been successful in this dismantling project, other agents involved in the nuclear industry often demonstrate that they still have a long way to go.

Allow me to quote the prime example: the organisation that should most strive to gain credibility is this country’s regulatory body, the Nuclear Safety Council. It is quite clear that this organisation does not generate the necessary level of trust, despite the fact that it is the body that should most be trusted. I refer to the comedy of errors that occurred as a result of last summer’s incidents at Vandellòs-II. I shall not analyse that issue since this would necessarily be the subject of a different intervention.

In any case, as regards communication policy, the dismantling of Vandellòs-I is a good example that should be taken into account. It is a good example because it has managed to generate trust.

REPORT FOR THE TRACKING COMMISSION OF THE TOWN COUNCIL OF VANDELLÒS Y L'HOSPITALET DE L'INFANT

**Francesc Castells
Universitat Rovira I Virgili**

General Comments

This report summarises the dismantling activities performed by ENRESA at the Vandellòs-I NPP during the period 01.05.02 to 31.10.02.

It was originally prepared for the Tracking Commission of the Town Council of the host community and published in November 2002. It is provided with very little modification (deletion of some detailed tables) to the FSC Spain Workshop Proceedings. In this way it forms a valuable record of decommissioning activities and moreover, of municipal oversight.

Work Progress

The work detailed below was been performed during this period:

- The assembly of the slab protective covering at elevation 16 was initiated.
- BIC cleaning and decontamination work was initiated, prior to the demolition of this element.
- The former reactor building was disassembled and the BCI demolished, leaving the new reactor weatherproof protective structure in view.
- Demolition work continues on the conventional buildings, along with the disassembly of buried piping.
- The wall measurement and decontamination process continues, along with the process of reclassification or declassification of active buildings.
- Work continues on the decontamination of the graphite silos.
- Decontamination work has been completed on the ATC, which will now be demolished.
- Activities relating to the remodelling of infrastructures and the implementation of systems for the latency period continue.
- The conditioning of the DTG at elevation 3.50 has been completed.
- The original report included a Gantt chart of activities and a tracking table showing their actual realisation.

Waste Management

Conventional Wastes

The non-radioactive wastes indicated in the following table had been removed from the site by the end of the period.

Removal from Site of Non-Radioactive Wastes

Waste	October 2002		Accumulated at ONSET	
	Quantity (kg)	No of transports	Quantity (kg)	No of transports
Absorbents and filtering material	–	–	11 660	3
Lubricating oil	–	–	127 820	15
Hydrochloric acid	–	–	80	1
Waste water and sewage	–	–	37 500	7
Alumina	–	–	2 360	1
Asbestos	–	–	460	1
Miscellaneous wastes	7 060	4	296 020	166
Large batteries	–	–	17 840	4
Electrical cables	–	–	309 500	24
Sodium carbonate	–	–	3 960	1
Ash	–	–	4 640	1
Scrap	61 020	5	5 375 870	422
Detergents	–	–	1 220	1
Halogenated solvents	–	–	3 000	1
Non-halogenated solvents	–	–	3 000	1
Effluents and sediments	26 120	3	435 280	33
Electronic equipment	–	–	39 450	8
Foaming agents	–	–	3 ,140	1
Glass fibre and wool	900	1	46 180	17
Fibrocement	11 860	2	25 ,600	6
Fluorescent tubes	–	–	730	2
Graphite	–	–	5,260	1
Sodium hydroxide	–	–	380	1
Cooling gas mixtures	–	–	200	1
Used tyres	–	–	1 040	1
Paper and cardboard	2 340	1	38 760	25
Small batteries	–	–	683	1
Plastics	–	–	620	1
Special wastes in small quantities	–	–	3 947	5
Ion exchange resins	–	–	46 160	2
Saline solutions	–	–	15 740	2
Plant fabrics	–	–	80 820	26
Asphalt cloth	–	–	46 360	5
Transformers containing PCB's	–	–	83 480	5
Overall total	109 300	16	7 068 760	792
TOTAL PERIOD	278 324	50	7 068 760	792

Materials Dismantled in Controlled Zones: October 2002

ORIGIN	DESTINATION								TOTAL	
	Declassification		Secondary Wastes		Primary Wastes		Decontamination			
Building	Month	Accum.	Month	Accum.	Month	Accum.	Month	Accum.	Month	Accum.
Auxiliary	0	293 135	0	10 338	0	32 996	0	14 056	0	350 525
Pools	30 712	1 083 760	0	6 637	0	217 081	0	657	30 712	1 308 135
Reactor	0	4 018 349	0	30 862	0	57 348	0	8 793	0	4 115 352
Sulphation	0	96 821	0	1 524	0	74 599	0	1 621	0	174 565
Laudry	0	6 660	0	0	0	2 378	0	0	0	9 038
Operations	0	11 845	0	1 268	0	4 322	0	0	0	17 435
BCI	44 552	1 141 379	0	3 102	688	162 525	0	4 717	45 240	1 311 723
Silos	6 687	83 2031	182	9 106	9 777	244 262	0	0	16 646	1 085 399
Type BP.	2 945	106 196	0	0	216	2 352	0	0	3 161	108 548
Cutting Shop	0	20 825	0	0	0	0	0	0	0	20 825
Total	84 896	7 611 001	182	62 837	10 681	797 863	0	29 844	95 759	8 501 545
Total Period	652 279	7 611 001	758	62 837	135 514	797 863	0	29 844	788 551	8 501 545

Removal of Declassified Materials as of 31st October 2002 – Acumulado

Type of Material	Accumulated		Month		Total		Level of declassification
	Weight (kg)	Volume (m ³)	Weight (kg)	Volume (m ³)	Weight (kg)	Volume (m ³)	
Thermal Insulation	95 944	489	0	0	95 944	489	N1
Cables	133 120	270	0	0	133 120	270	N1
Non-ferrous Scrap	63 180	92	1 800	4	64 980	96	N1
Miscellaneous	2 036	21	0	0	2 036	21	N1
Ferrous Scrap	3 871 440	6 524	1 576 960	2 997	5 448 400	9 521	N1/N2
Total	4 165 720	7 396	1 578 760	3 001	5 744 480	10 397	
Removal during Period			1 458 640	2 728	5 744 480	10 397	

Secondary Radioactive Waste

Wastes Generated and Conditioned

During the period considered 38 490 kg of wastes were generated, these coming from various intervention units.

During the period 92 compactable waste packages were conditioned, along with 33 non-compactable packages, 12 packages containing dry sludges and 1 encapsulated source.

Waste Package Removal Operations from the Site

The original report included a table of 17 transport operations carried out to the El Cabril disposal facility during the period.

Incidents

Reportable and Special Events

Reference	RER	IRER	SR	Start Date	Duration	E.T. Affected	Brief Summary
No 02/02	X			24/10/02	6 h		Partial loss of perimeter surveillance alarms systems

Note: RER: Reportable event report
IRER: Immediately reportable abnormal event report
SR: Special report
Reference: that was used by the plant

Effluents

During this period 167 cubic metres of liquid effluents were removed from the site, this implying 0.17% of the annual authorised dose limit for liquids, which represents 0.13% of the total for effluents.

There were no releases of gaseous radioactive effluents during this period.

Safety

A total number of 250 835 hours were worked during this period.

In total there were 6 accidents implying absence from work, 5 slight and 1 serious.

The original report included, in annex, a record of more than 30 service providers or enterprises that worked on the site. The local or non-local origin of the workers was recorded.

Environmental Radiological Surveillance (ERSP)

Scheduled Sampling

Performed by CNV-1:

Dust particles: 2 systematic weekly samples.
Water vapour: 11 samples.
Direct radiation: replacement of 66 environmental dosimeters.
Rainwater: 27 samples.
Seawater: 53 samples.
Crops: 4 samples.
Fish: 4 samples.
Shellfish: 4 samples.
Indicating organism: 27 samples.
Bottom sediments: 27 samples.
Carbon anhydride: 27 samples.
Soils: 27 samples.
Shore sediments: 27 samples.

In common with CNV-II:

Dust particles: 4 systematic weekly samples.
Direct radiation: change of 32 environmental dosimeters.
Crops: 2 samples

Sampling Performed

The samples have practically matched what was expected.

The original report included a table of daily values of particles in suspension in three measurement areas.

Environmental Surveillance (ESP)

Performance of sonometry sampling.

Sampling of dust at all the points foreseen: Meteorological Station, L'Almadrava, Cala Justell, L'Hospitalet de L'Infant and the interior of the facility.

The levels of sound emission included in the Impact Statement are 65 dB(A) from 07:00 to 23:00 hours and 55 dB(A) from 23:00 to 07:00 hours.

According to a Municipal Order issued by the Town Council of Vandellòs, the maximum levels permitted in industrial areas are 65 dB(A) during the daytime and 60 dB(A) at night. All the values were taken during the day at times of inactivity (background) and of activity. In the original report a table represented measurement values as six-monthly averages. Limit values were not reached at any measurement station.

Materials Dispatch Controls

Radiological Controls

During this period, 4 795 radiological controls were performed on vehicles leaving the site with conventional materials arising from disassembly, plant remains from clearing of the site and other miscellaneous materials.

Non-radiological Controls

All the waste that has left the site has been submitted to the controls required by the Waste Council of the Regional Government of Catalonia.

**PAST EXAMPLES OF CASES AND ACTORS AND
THE EMERGENCE OF STAKEHOLDER INVOLVEMENT
FOR DECISION MAKING IN SPAIN**

Case 3. AMAC – The Association of Spanish Municipalities

A RELEVANT SPANISH ACTOR: THE ROLE VIEWS AND SINGULARITY OF AMAC

Ana García

Professor, Universitat Autònoma de Barcelona

The Association of Municipalities in Areas of Nuclear Power Plants (AMAC) is a non-profit association, formed by the mayors of Spanish municipalities that are host to, or whose boundaries lie within a distance of ten kilometres from, a nuclear power plant or related facility. One of the main and initial aims of AMAC is to provide a collective voice representing the interests of its members on the national level, in order to strengthen their influence in decision-making processes related to all the operations of the facilities that are situated in their vicinity.

During its existence, AMAC has worked to guarantee the safety of local communities situated near a nuclear plant and to fully develop all the related emergency plans. In the same way, AMAC works hard to provide solutions for the development of nuclear communities in the absence of compensatory measures. After fifteen years, AMAC has developed numerous relationships with different actors and local agents linked to the world of nuclear energy. The operations carried out by AMAC along these years have been useful and have led to the development of a good quality network among the different agents involved in it (Ministry, Nuclear Forum, ENRESA, CSN and UNESA). All of these actors consider AMAC as their link with the local actors, as it does gather the immense majority of the municipalities in nuclear areas, and can represent the localities as a compact stakeholder with a single voice.

This way, the initial mistrust has given way to an explicit recognition by institutions of AMAC's character as unitary speaker. AMAC is seen to be consistent in putting forward the interests of its members, and in bringing pressure to bear on the authorities to make more favourable decisions. The periodic and extraordinary meetings with the different agents, either separately or jointly, usually reinforce the effective role of AMAC as representative of the municipalities – but it must be said that the procedure is neither institutionalised nor sanctioned by a normative body. That implies a certain grade of informality in those meetings, and it is a favourable climate for errors and asymmetries in a system of vertical and horizontal information that flows among the different agents. In reality, AMAC's position is effectively taken into account on a large number of occasions. This stems from two important elements: on one hand, the moral (and democratic) stature of an association joining the interests of the majority of municipalities in the different Spanish nuclear areas; and just as importantly, the relational task constantly carried out by AMAC in its transactions with the rest of involved agents. Another factor is the direct lobbying methods used, mobilising local governments.

That actual recognition does not necessarily imply satisfactory empowerment. It does not even imply that the process in question is democratically advanced. In fact, there still seems to be unwillingness to confer upon AMAC a quota of decision power, maybe because of the obvious power loss among institutional agents that would be implied by that scenario, and because of the fragmentation it would bring to the power which is today concentrated in a few hands. These factors make the decision-making capacity more difficult to understand, because a broad consensus is required.

However, from a strictly analytic point of view, the democratic evolution of the current decision-making process toward a participation paradigm seems to be an unavoidable historical necessity. It is just that the level of administration that is the closest to the nuclear scene in Spain be properly represented in decisions affecting the local level. As well, the progression of democratic institutional culture in the country is underway. Fruit of the local community's need for representation in the forums where their future is discussed and decided, the demand for greater participation of AMAC in influential processes has spread widely among mayors. Nowadays, the mayors who are members of AMAC demand a qualitative jump in the role that is institutionally conferred to an association. Economic compensations, which they already have, are not a viable substitute for representation and participation. The mayors call for actual representation, and effective participation in the decision-making process, for reasons apart from the logical efficiency these will confer to the execution of their functions and meeting new challenges.

Nevertheless, the conception and implementation of a decision-making process with true participation of the actors in relation to the nuclear question is still pending. And, that actually might be what the mayors of the AMAC call for as a by-product of democratic evolution. Recent piecemeal gains are not enough, since the main problem remains unsolved.

Therefore, the future of AMAC, in part, depends on a clear definition of actors and roles on the nuclear scene, and the recognition of AMAC's status as true participant and decision maker. AMAC is a fundamental actor on the current Spanish nuclear map. The lack of consideration towards AMAC is a clear manifestation of the democratic deficit in the Spanish society. It is also the symptom of declining transparency in communication and reliability of information in the nuclear realm. Finally, it is the sign of the absence of political will to promote the right to participate, or even to create the mechanisms that can permit real involvement of the groups affected by the presence of nuclear facilities.

The improvement of AMAC's global position as a participant actor in the future Spanish and European nuclear scene should be an objective. Some possible actions could be:

- Put pressure on the responsible institutions to accelerate the resolution of safety and infrastructure problems which are still pending in various municipalities in the nuclear areas.
- Improve relations with the different national agents involved in the nuclear scene, in particular with those who are currently more reluctant to maintain a constant, free-flowing relation.
- Obtain recognition and social legitimation for AMAC as a representative spokesperson for local power in nuclear matter and in relation to decision-making processes.
- Reinforce, with the participation of AMAC, the channels of information and education that affect public opinion in nuclear areas.
- Contribute to the informative transparency in nuclear issues with the promotion and popularisation of thematic studies on this subject.
- Make populations and media aware of the necessity for democratisation and transparency in the decision-making process related to the nuclear question.
- Encourage and develop the Local Commissions of Information, by putting pressure on the authorities and by counteracting the opposition coming from agents with hidden interests contrary to the processes of participation and to transparency.
- Continue working on the development of training programs for mayors and for the population in general on the nuclear questions that affect them.

- Promote the design and implementation of a decision-making process for the nuclear question with full participation, securing a role for AMAC as a participant actor and decision maker responsible for the representation of the local administration and institutionally recognised.
- Take a position as a participant actor in the decision-making process in relation to the nuclear radioactive waste storage issue in Spain.

MAIN WORKSHOP

**Involving the Local Authorities
The Interplay Between the National and Local Levels
Long-term Sustainability of Decisions
Thematic Reports**

PRESENTATION OF THE CASE STUDY OF THE WG1 (DEMOCRACY AND LOCAL PARTICIPATORY SYSTEMS) OF COWAM-SPAIN: BUILDING A COMBINED CYCLE NATURAL GAS POWER PLANT: COMPARISON BETWEEN THE CASE FAILED IN MORA LA NOVA AND THE LICENSING SUCCESS IN VANDELLÒS-HOSPITALET DE L'INFANT

M. Mercedes Chiapella
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Professor, University Rovira i Virgili (Tarragona, Spain)

The questions that were formulated in the request for this report are:

1. What does “local level” mean?
2. Who are the local stakeholders?
3. Which prerequisites are needed to involve the local level?
4. Who begins the consultation?
5. Who assures the participation and security of the local level?

Some of these questions will be approached through the comparative study of two cases (carried out in the context of COWAM-Spain in the work group on Local Democracy and Systems of Social Participation) regarding the siting of a combined cycle natural gas power plant. In one case it was not possible to consolidate the project, whereas siting and licensing were achieved in the other. The two cases are: the Enron project in Mora la Nova (municipality of the district of the Riverside d'Ebre, county of Tarragona) and the project of Natural Gas in the municipality of Vandellòs Hospitalet (in the district of the Baix Camp, bordering on the other district, and also in Tarragona).

Purpose and Objectives

Each case was studied in detail from a broad sociological perspective, as well as from a psycho-sociological perspective, to analyse the different aspects, strategy and process observed, in order to identify the factors that contributed to success or failure.

This purpose is summed up in the following study objectives:

1. Analysis of the elaboration phase and maturation of the project.
2. Analysis of the phase of consolidation of the project.

Methodology

Given the nature of the study focus, several methodologies were called upon. First a desk study summarised secondary data, press releases, reports and technical documents. Primary data were then gathered in a qualitative approach, through in-depth interviews with key players in the political, managerial, media, and associative sectors. It was vital to obtain a rich description of the demographic, territorial, economic, industrial and political situation.

Finally, content analysis was employed to produce a description of decision-making processes in each case, and then to interpret what led in each case to its specific outcome. It was intended to provide a theory-based design for a decision-making process in comparable siting cases.

Analysis of the Process

A basic chronology of the events is provided.

In the case of Mora la Nova

Contacts between the operator and administrations begin in January 2000. In March 2000, the operator announces to the press the project, and the following month, April, it presents the project to the general public.

In December 2000, 8 months later, a loosely-knit “platform” or informal coalition of like-minded groups is constituted. Within two months the platform organizes a mass demonstration to express opposition to 3 projects: the Mora la Nova combined cycle plant, the national hydrological plan (redistributing water resources), and windmill siting.

In January 2001 Parliament approves the proposition of looking for a new location outside of Mora and in the same month the operator shelves its proposal temporarily. One year and 3 months after its first inception, the Mora la Nova project has completely disappeared.

In the case of Vandellòs-Hospitalet

In 1997 the corresponding operator purchases the land, but it is not until January of 2001 that the first official discussions are opened between operator and administrations. In February of 2001 the operator announces to the press the project and the same month, some days later a coalition of opponents is constituted. In April of 2001 the operator presents the project to the general public.

Starting from here and until September of 2004, when the ministry of Industry authorizes the installation of the Thermal Power station, there is a stand-by because of possible incompatibilities with a new project, ITER.

A rigorous analysis of the decision-making process in each case led to the identification of five phases:

- Phase 0: Socio-political viability studies are conducted by the operator, analysing the socio-political variables of the pre-selected location to determine their suitability.
- Phase 1: Contacts take place between the operator and administrations with an a priori favourable outcome.
- Phase 2: Formal negotiations are engaged between the operator and administrations.
- Phase 3: The project appears on the public scene.
- Phase 4: Overlapping responses develop, including: Social assimilation, generation of reactions, social, economic, political positioning, etc.

Two classes of factors appear to have influenced the course of events in these cases:

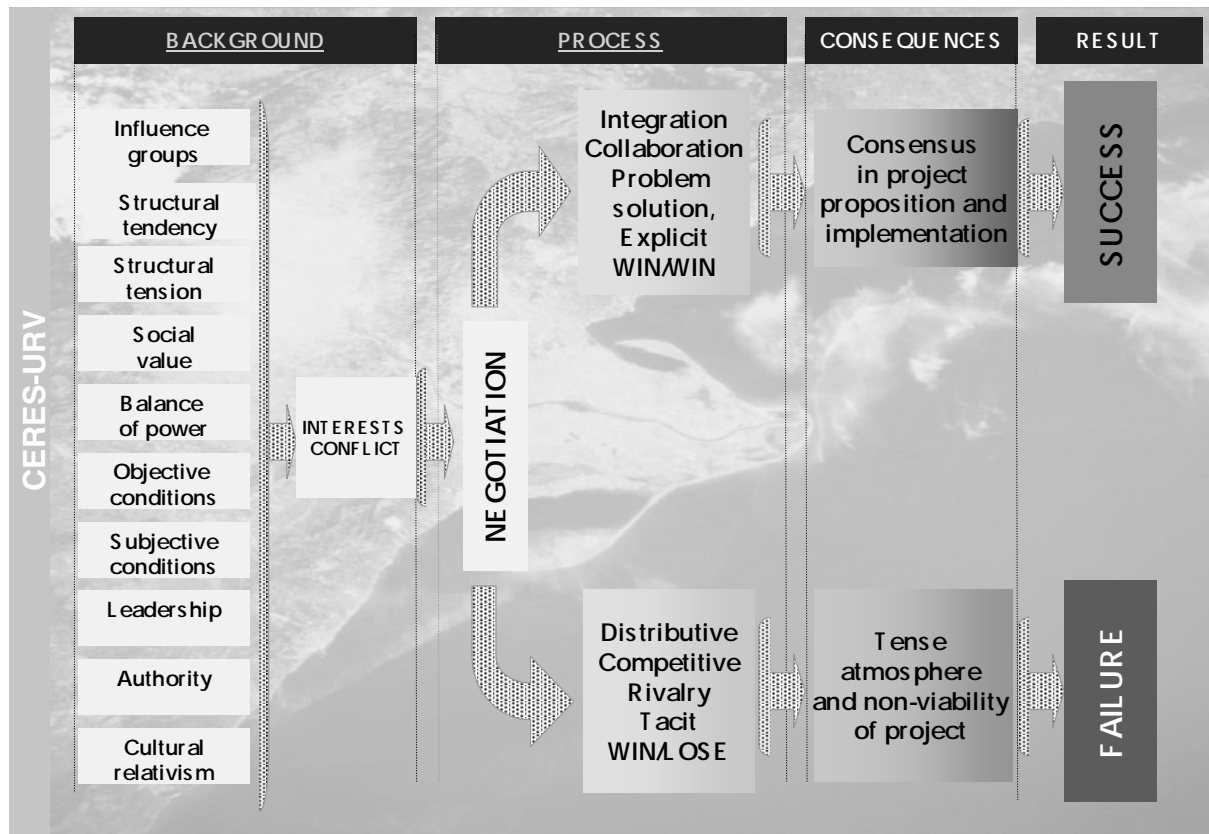
- Endogenous variables: these are inherent to the nature of the project, or related to the two major actors of the early phases, that is, the operator and the city council.

- Exogenous variables: these are external to the project and yet may influence the unfolding of events and decisions: neighbouring city councils, regional, autonomous (Regional Gov), state administration, media, managerial sector, associations and coalitions, society.

Our role was to detect and to analyse these antecedent variables that influenced, determined and precipitated the events, on the basis of the comparative case study.

To summarise, we note that in the case of Mora la Nova the project was publicly announced before negotiations had sufficiently progressed with the full spectrum of involved actors. In contrast, in Vandellòs the public announcement took place only after broad agreement had been reached.

On the basis of such analysis we attempted to develop a general model of the background features, variables, process and events so as to identify when failure or success might result in any siting case (figure below). Application of this model would help siting proponents and stakeholders choose a path towards a win-win situation of success.



Reviewing the case studies through the lens of the model, it is possible to formulate some recommendations for the siting of noxious facilities:

1. A thorough baseline study must be made of starting conditions on each of the variables sited, and a set of detailed alternative scenarios should be worked out, well before any announcement of the project
2. Contacts and negotiations with different stakeholders must be established, including in particular the most nearly affected town hall(s), regional, autonomous and state administrations, the economic and social sectors, coalitions, pressure groups and so forth.

We observe that in Mora la Nova a certain number of forces might have been neutralised, with hindsight; however, other forces and events probably would have been impossible to avoid even with prior knowledge.

In the case of Vandellòs, the recent experience in Mora la Nova served to improve learning and response to situations and similar events. This fact reinforces our belief in the importance of planning a process; the proposed model can be an example of the prerequisites for involvement at the local level.

THE COWAM-SPAIN INITIATIVE: SUMMARY OF FSC ROUNDTABLE DISCUSSION

Kathryn Shaver
NWMO, Canada, and FSC member

Following the presentations about the COWAM-Spain initiative, participants discussed four questions. The following points were reported to the plenary from the round tables, each of which grouped FSC members and Spanish stakeholders.

Q1: What is the appropriate role for scientific experts (who would address issues such as need for the facility and safety) in a dialogue with the local population?

Notes from Group 1, reported by Kathryn Shaver

- Discussion ensued on the contribution of specialists, with reference to recent polls and experience across jurisdictions that indicated a significant level of public confidence in scientific expertise.
- Having specialists available to respond to questions and provide clarifications during public dialogues is important. In some cases, it was found helpful to distil and distribute in advance plain language summaries of scientific and technical issues, as background context for the meetings.
- Was discussion of the challenges of addressing the broad range of disciplines of expertise deemed to be relevant to radioactive waste management? Independence of specialists was discussed, and the importance of specialists declaring their interests and exposing their values transparently.
- Communicating clearly areas of expertise to the public is found to be a further challenge, as not all experts are found to be effective communicators in the public arena.
- The more transparent the process and the more broadly available the topical research commissioned by implementing or regulatory agencies, the greater will be the ability to respond to divergent expectations of actors and community members with respect to their respective interests in terms of focus and scope of research.
- Is important for local communities affected by implementation to have access to their own specialists, for independent advice and expertise on matters which they wish to pursue.
- Resources provided to local communities for purposes of capacity-building are key to addressing the information balance between implementers and affected communities. Ensuring that affected communities have resources and access to independent specialist knowledge of their choice, will be essential to supporting active local participation and to supporting informed decisions and direction at the local level.

Notes from Group 2, reported by Janet Kotra

- It is important to understand that dialogue means two-way communication; for a real exchange, there must be an openness to change.
- It is essential to be honest about what science can and cannot do. Address scientific uncertainty with candor: this is key to building trust.
- Experts must listen well, in order to understand local concerns, and ensure that questions are answered.
- The importance of communication training for technical experts was stressed, so that they may speak in “plain language”.
- Importance of establishing long-term relationships between institutional actors and local stakeholders.
- It’s important to strive to be responsive to what local stakeholders want to know, not just what experts wish to tell – it’s important to match available expertise to local expectations.
- Local communities require access to consultants and experts of their own.
- Importance of ability to trust regulatory authorities as consultants for local stakeholders.

Notes from Group 3, reported by Steve Chandler

- Consideration must be given to the words “expert” and “independence”, and who makes these judgments.
- Important to have availability of expertise beyond that provided in the regulatory arena: it is also needed by local groups.
- The importance of peer reviews by independent experts was underscored.
- Leadership is also required from social science experts, including those from the local university community.
- Regulators need to be visible, and are considered to be “expert”, but caution was noted that regulators aren’t always viewed as “independent”.

Notes from Group 4, reported by Josefine Jonsson

- The group questioned the word “expert”.
- It was felt that the word “specialist” was more appropriate.
- There will be cross-cutting issues (technical and other); these multi-disciplinary areas will need to be addressed through appropriate specialists or working groups.
- It is important to ensure that experts do not get too immersed in their own preferred areas of specialisation and investigation: their mandate and constraints must be made clear.
- It is important that they communicate in an easily understood manner.
- Experts too, must be evaluated in their own right.

Notes from Group 5, reported by Markus Fritschi

- Expertise is a requirement, and experts must be perceived to be independent.
- At the local level, stakeholders require access to their own experts.

- Consideration should be given to who their experts are.
- Actors that best serve as “expert” (such as the regulator) in one country may not be well received in that role in another country.
- Implementing agencies are also often to be considered “experts” provided that they have earned credibility in the eyes of the public.
- In other instances, NGOs may be regarded as experts.

Q2: What can the leading governmental agencies do to demonstrate and follow through with commitment to a genuine stakeholder involvement process?

Notes from Group 1, reported by Kathryn Shaver

- Governments have an important role in setting the foundation and communicating the case for required decisions on radioactive waste management. Processes can be enhanced through policy or legislative frameworks which establish the rationale and requirements for decisions to be taken.
- Clarity provided by governments through statute at the national level concerning the focus and scope of decisions, including requirements for public involvement and consideration of socio-economic factors, can offer enhanced definition of the framework for the ensuing public involvement processes.
- Active local government involvement and partnerships at the community level are key to co-ordination and oversight of the process.
- The opportunity exists in implementation to establish oversight committees that bring together government representatives from national, regional and local levels (including mayors of affected communities) with other actors for the duration of the project planning and implementation.
- Clarification from government at the outset of a process, concerning respective roles and responsibilities in the decision-making and implementation processes, is helpful to the process in communicating accountabilities to the stakeholders. Having a clear understanding of governance structures – regulatory, government and industry – can be important for building public confidence in the processes underway.
- Issues of waste management tend to become intertwined with broader public discussions of nuclear issues and energy plans. To the extent that governments can clarify at the outset how the waste management plans fit into the overall energy plans, this clarification may be helpful in establishing the focus and foundation for stakeholder involvement.

Notes from Group 2, reported by Janet Kotra

- Governments can commit time and resources to establishing and maintaining long-term relationships with local stakeholders.
- They can empower local communities by legitimising community information commissions and granting them autonomy.
- It’s important to ensure proper training of all government representatives who interact with local stakeholders so that they are prepared to speak candidly, in plain language, to listen to local concerns, and be prepared, when appropriate, to make changes based on input from local expertise.

- There are opportunities to recruit and apply social science expertise to better tailor government communication to the knowledge of how people receive and process information.

Notes from Group 3, reported by Steve Chandler

- Government agencies have a funding role, and they should set legal frameworks to guide processes.
- It is helpful to have continuity of government and regulatory staff involved in the long term as much as possible, to provide for familiarity and ongoing stakeholder relationships.
- It can also be very helpful to have a local presence of some government staff, so that they can become known in the community hosting the project. It was noted, for example, that this was the case with the CSN in Spain, which had a resident inspector at the Vandellòs site during the critical decommissioning phase.

Notes from Group 4, reported by Josefine Jonsson

- Governments may choose to set up overarching commissions, such as that proposed for consideration in Spain.
- Such a commission could be responsible for ensuring an exchange of views between governments and actors throughout the various stages of the implementation process.

Notes from Group 5, reported by Markus Fritschi

- Government should seek to ensure that enough time is allowed in the process to allow for the information and education to allow for meaningful participation.
- Governments can provide the framework and ensure transparency that respects the interests of stakeholders.
- It is important to invite the full spectrum of views of stakeholders.

Q3: Would you agree that safety is everyone's concern and it will come naturally from a healthy democratic discussion?

Notes from Group 1, reported on Kathryn Shaver

- It is agreed that safety is everyone's concern, and is critical to the acceptability of management approach. People hold different perspectives and definitions of safety, but there is great convergence around the need to provide safety for people and the environment.
- It is important to build confidence that management of radioactive waste will be carefully regulated and will meet or exceed rigorous safety and security requirements. But the decision as to whether safety has been assured to a sufficient degree to warrant implementation will also be a societal one. Citizens will be influenced by social notions of what constitutes acceptable risk and the safety threshold to be met.
- A commitment to a democratic discussion and socially-directed decision-making process will ensure that space is provided to understand societal perspectives and expectations with regard to safety. It was suggested that while science can address the probability of an event occurring, it is citizens who best speak to the tolerance for or acceptability of risks and the societal implications. For this reason, providing the opportunities to invite discussion with the public at large, as well as specialists, is key to support decision making.

- Some jurisdictions have found that safety emerges from healthy, full democratic discussion. When presented with opportunities to engage in discussion, issues of safety and security will emerge in dialogue through the decision-making and implementation processes. When the public is provided with an open discussion on key values and expectations for radioactive waste management, safety has emerged as a core value to inform all decision making, and a key objective for implementation. One country reported that its iterative and multi-party engagement with specialists, interested citizens and the public at large, had enabled exploration of what constitutes “safety” with regards to requirements for radioactive waste management. Participatory processes sought to elicit from citizens the social factors related to safety, which should be considered in decision making. Dialogues focused on exploration of possible future scenarios sought to identify uncertainties and issues of risk that may be relevant for future generations.
- In this case, “safety” was defined in collaboration with citizens as well as specialists, so that the scope to be considered included that which is relevant to citizens, and not just the definition understood by specialists. Through an open process of engagement, implementers have an opportunity to identify and adopt interpretations of safety that are more inclusive of what is important to citizens.
- A meaningful process of engagement provides a democratic process through which citizens and specialists contribute to decision making against this expanded perspective of safety. In this way, citizens and specialists can influence the definition of safety and also exercise judgment on the extent to which decisions are best able to demonstrate and ensure safety.
- At each point in the implementation process, safety will need to be demonstrated. It was suggested that social notions of safety will evolve over time, as will the state of technical knowledge that greatly influences perceptions of safety and risk. It is therefore important to continue to provide democratic processes through which implementers can understand and align processes with evolving understandings of safety.

Notes from Group 2, reported by Janet Kotra

- It is agreed that safety is everyone’s concern.
- Regarding whether or not this will emerge naturally in democratic discussion, no, it is not that simple. It won’t naturally emerge.
- Everyone appears to agree that “safety is non-negotiable” but...
- There widely variable definitions of what constitutes “safety” across stakeholders.
- Dialogue about what people perceive “safety” to be is essential before agreement can emerge.
- It cannot be assumed that all stakeholders mean the same thing when it comes to the concept.
- Each participant has different contributing influences that will influence their perceptions of safety.

Notes from Group 3, reported by Steve Chandler

- It is agreed that safety is everyone’s concern.
- It won’t likely naturally evolve from a democratic discussion. There will need to be a structure to draw it out.
- There are many views on what safety means.
- Regulators need to take a wide view of safety, including for example, transportation.

- Perception is important in safety; safety arrangements should give a “warm feeling” of security.
- It is important to demonstrate that people’s concerns are listened to, understood and addressed.

Notes from Group 4, reported by Josefine Jonsson

- It is agreed that safety is everyone’s concern.
- Perception of risk is key. There was discussion of the risk concepts, and how to communicate risk to different stakeholders.
- There is a need to identify people’s perception of risk and be able to discuss safety standards.
- There was discussion around who defines “safety”.
- It is important to listen to everybody involved in the decision-making process and to understand their different perceptions of safety, and seek to address expressed concerns.
- Many of the comments previously reported above also arose in this group discussion.

Notes from Group 5, reported by Markus Fritschi

- It is agreed that safety is everyone’s concern.
- The group felt that this would not just emerge from discussion.
- Safety may not be the only requirement for decisions, but it is one of the key issues. It is a non-negotiable prerequisite from the very beginning.
- It is important not to restrict the range of issues to be discussed as people address issues of safety from their own perspectives.

Q4: How to create multiple opportunities for people to be engaged in the process in ways that suit their needs and constraints?

Notes from Group 1, reported by Kathryn Shaver

- Decision-making processes must be structured to allow for multiple engagement opportunities through iterative processes of dialogue and sharing of information.
- It is important that such processes facilitate real dialogue and active participation, not just one-way consultation.
- To be effective, processes should encourage dialogue of the public with specialists.
- Engagement opportunities can be provided early on in a project phase, designed to understand societal expectations, pre-eminent citizen values, and key objectives for the project. Engagement at further phases can be facilitated to invite input on the scope of research questions and the decision-making process. Active involvement at the local level can continue through the implementation period which may continue for decades, through siting, construction, transportation, operation and monitoring phases, and ultimately decommissioning.
- Engagement should seek to invite the general public into the dialogue, as well as media and other representative groups.
- A diversity of engagement tools and media may be appropriate in order to reach the broad range of communities of interest. Face-to-face meetings are highly valued for real dialogue. Such meetings may be supplemented through electronic dialogues, workshops and working groups.

- A structure to ensure active local engagement was discussed: based on establishment of a core oversight committee that would meet at regular intervals to discuss project findings and maintain a forum of local stakeholder engagement concerning implementation. This type of committee could be supported by a number of topical working groups tasked with addressing a range of community-specific issues.
- In convening dialogues, organisers must be prepared to ensure transparency and integrity of process. They must also demonstrate a willingness to retain openness and flexibility to adjust course as may be appropriate to reflect and respond to direction proposed through the public dialogues.

Notes from Group 2, reported by Janet Kotra

- Again, the importance of autonomous local advisory commissions should be emphasized.
- Local commissions or committees require resources and formal status conferred by governmental authorities.
- Commissions could be tailored to the needs of the community to most effectively contribute to local discussions of the questions to be asked, information needs and the range of expertise required by the community.
- Need to elaborate role of stakeholder input in both the EIA and the RWM plan.
- The importance of public participation is now more widely acknowledged but the mechanisms to allow it to succeed are still developing.
- Caution: avoid tendency to entrench in regulation/statute overly prescriptive or limiting definitions of process: it is important to retain flexibility so that consultation approaches can be shaped appropriately for the local circumstances.
- Ongoing consultation is key to continuing the long term relationships.
- Social scientists can make important contributions in providing guidance on effective ways for engaging local communities and communicating effectively.

Notes from Group 3, reported by Steve Chandler

- Citizens at the local level should have a voice in the decision-making concerning site selection.
- Multiple opportunities should be provided through which citizens can influence decisions taken locally.
- There are more formal opportunities for community consultation extended through a variety of mechanisms: through regulatory and legal processes and appeals, environmental impact assessments, referenda. Democratic influence is also exerted through elections.
- An opportunity is needed for non-governmental organisations and the public to influence decisions at the strategic level.
- There must be continuing mechanisms for influence in the implementation phase over the long term, even after initial decisions are taken.

Notes from Group 4, reported by Josefine Jonsson

- The step-wise decision-making process can play an important role in providing such multiple opportunities for engagement.

- The step-wise process can provide for clear definition in steps, and identify the many opportunities for the public to engage.
- It is important that opportunities be provided for people to meet in different arenas, on their conditions, to relate to and be sensitive to their specific circumstances.
- Discussion addressed differences between: qualitative engagement processes (through dialogue and asking questions) vs quantitative processes (such as opinion polls and referenda).
- It was suggested that both types of processes are required. This spectrum of engagement is important in informing decision-making processes.

Notes from Group 5, reported by Markus Fritschi

- There was discussion around the need for defined processes that will address local socio-economic issues, include those related to local benefits and economic development.
- It is important to analyse the needs of local society, so that implementation measures may be appropriately aligned to address these needs.
- From the outset, effort should be taken to avoid setting unrealistic expectations for the local community.
- A process of integrity which is fair is required to distribute the benefits.
- In establishing the processes, it is important to build in sufficient time for the local community to gain an understanding of the issues and express their views.
- There is competence in this regard which resides with the local community. An effective oversight process with credibility should be established to oversee implementation.
- Seek to ensure that all interests are on the table and made transparent, to avoid hidden agendas.
- Sources of financial resources supporting the process should be made transparent.
- It is important to seek the whole spectrum of views across stakeholders through a variety of communication and interaction channels. It's important to avoid the dominance of one perspective in the dialogue.

THE INTERPLAY BETWEEN THE NATIONAL AND LOCAL LEVEL

Miquel Ferrús i Serra
GMF

Ladies and gentlemen, good afternoon,

Firstly, I want to thank to the organisation of the FSC for the invitation to explain to you part of the COWAM-Spain results.

As Mr. Vila d'Abadal said before, COWAM-Spain conclusions offer a site-search methodology for facilities of difficult social acceptance. Its aim is to avoid any *fait accompli* to be placed before the citizens of the municipalities.

The Working Group 2 (WG2) of COWAM-Spain, called "Institutional framework, quality of decision-making processes and strategy" studied the interplay between the local and the national level in the process of taking decisions.

The WG2 objectives were:

1. To put the problem on the table (also the general objective of COWAM-Spain).
2. To define the diverse actors who intervene in the process.
3. To identify the applicable legislation at the diverse levels.
4. To analyse and to validate the role that the local actor currently plays in his relations with the national level (in interaction too with the WG1 focused on Local Democracy).
5. To analyse the implications of the decision-making processes by local and national politicians.
6. To define the variables which drive, affect or intervene in the processes of decision making.
7. To carry out case studies.
8. To identify the aspects that guarantees the quality of the process.
9. To identify who or what institution supervises the process and validates the correct one to proceed.
10. To exchange results with the other groups of COWAM-Spain.
11. To connect with COWAM EUROPE 2 (also the general objective of COWAM-Spain).

I would like to tell of three case studies carried out for WG2 and discussed by all its members.

One of these cases studied by WP2 responds to the first objective of "putting the problem on the table". In fact the presentation by Dr. Rovira yesterday described this COWAM-Spain study. As pointed out by the professor, the agents involved already presented their reports to the Senate in a process that lasted more than two years (between 1996 and 1998). They showed at that time the necessity of finding a siting solution within a framework based on pillars of transparency and local democracy. This history proves that these institutional stakeholders were debating the same issues and proposing similar solutions; their concern validates the feeling of nuclear host community representatives that there is a problem to be solved.

First case study: The Spanish institutional framework for siting decisions in radioactive waste management.

The Working Group 2 took charge of analysing the Spanish institutional frame. This study was carried out by the department of Constitutional Law of the University Autónoma de Madrid under the direction of Dr. Antonio Rovira. It has helped all the participants to know the competences of the different executive institutions and, in this way, to draw the executive/formal “map”.

A long list of Spanish laws was found to regulate the construction and the operation of the Spanish nuclear facilities. All these laws involve the following list of outstanding actors.

According to the law 15/1980, regarding the constitution of the CSN, the Ministry of industry is responsible for siting authorisation. Within the ministry, the Energy Policy directorate general is in charge of the procedure of this authorisation.

The CSN as regulatory body is responsible for elaborating a technical report previous to the authorisation, as it appears in the articles 2a and 2b of the same law. This report has binding character.

ENRESA, the national company for radioactive waste management, is in charge of looking for the location as well as of the technical and technological issues.

As appears in the law, the license application has to be under the responsibility of the ministry. The project is published in the Official Bulletin at which time opposing claims made be put forward.

Then, there is time for the presentation of other mandatory reports by the government’s delegate, regional government (CCAA), the municipality, the National Commission of Energy, and non mandatory reports like the one from the CIEMAT.

After that, the local authorisation period arrives.

Different phases exist when the project arrives at the municipality level, as per art. 29 and following of RANMIP (Regulation of Noxious, Annoying, Unhealthy and/or Dangerous Activities).

The municipality can reject the implementation of the plant for reasons of town planning. The project can be rejected as well for being incompatible with environmental norms or objectives of the municipality.

In case of acceptance, the municipality should grant a license of classified activity as well as a town planning license.

The local decision-maker has to begin with an open period of information or consultation to last a minimum of 10 days. It is obligatory to create a Committee of Information formed by a representation of the involved formal actors.

It is understood that knowing the institutional map is not enough for this kind of process; the process has to be adapted to the demands of the stakeholders. The participants of the WG2 listed the different advisory actors who ideally should be informed and consulted:

- Municipalities where waste is produced, if not the same as the potential site host (local).
- Companies and Commerce Associations of the region (local-regional level).
- Associations of farmers (local, regional and national level).
- Ecologists – Environmental Associations (local, regional and national).

- Economic and social councils (regional).
- Universities (regional and national level).
- Medias/Journalists (local, regional, national and international level).
- Political parties (all levels).
- Bishopric (regional level).
- Trade union (sindicatos) and business confederation (regional and national).
- Province Administration (diputaciones).
- R+D centres (regional and national level).
- Professional associations (regional and national level).
- Association of municipalities (regional and national level).
- FEMP.
- Hydrographical confederation (national level).
- EC, EP and IAEA (supranational level).

Each one may have some stake in the whole process: host municipalities or those otherwise affected, media, associations of neighbours, of merchants, consumers, the most important trade sectors in the area, the federation of municipalities at the autonomous level or the state level, environmentalist groups,...

According to all the participants of the WG2, there are points to keep in mind during the process:

1. We are facing a state problem with a final local solution.
2. As we have seen in the formal or executive map, ENRESA designs and the municipality decides whether to accept or to reject. An entity must be found that guarantees fair play in this decision-making process.
3. The hosting municipality cannot stand alone facing the problem. Therefore, besides the government's support, it is indispensable to form an agreement among the municipalities of the area, which should also participate in the process and in the negotiations.
4. The process should be built on a base of credibility and trust, with transparency being the tool to allow it.

Second case study: Baena

WG2 of COWAM-Spain also carried out a case study regarding a failed project to implement an industrial waste storage facility. This project was situated in the Cordovan municipality of Baena, which has about 20 000 inhabitants. Its economy is strongly based in the agricultural sector: olives and olive oil. Bad communication practices around the project resulted in social rejection of the project from throughout the area. The study consists of the analysis of the news which appeared in the press during the 3 months which lasted the project, and furnish a model of how not to handle siting.

The company Tecmed proposed to the mayor to build there a plant to store industrial waste. In the press, it appears as a “garbage dump”.

Tecmed is the environmental division of ACS-Dragados, one of the biggest companies of Europe in the sector of construction, which is presided by Mr. Florentino Pérez, also known as president of the Real Madrid football club.

As shown in the press, Tecmed would have paid to the municipality about €736 000 annually, variable according to the type and quantity of waste deposited in the plant. It is a good company according to both professional and economic criteria.

Tecmed announced textually that they “will build the plant”. At the beginning, the Socialist Party of the county supported this process; the mayor of Baena was member of the PSOE. It also appeared in the press that the PP, the PSOE and the PA expressed no objections. Environmentalist groups and the IU party, however, did express rejection for the idea of constructing a storage facility.

Examining the press, one deduces there was a total lack of definition of the project, the issues it might raise and the decision-making process to be followed. As long as the project was not defined, the regional government (CA) could not take a position. And, as the main economic and commercial sectors of the area received no formal information, the speculations began and, with them, the rejection.

In addition to that, the media used frightening vocabulary, sparking social fear.

The PP changed position and expressed disfavour. They ordered a poll and the results showed 92% of those interviewed were against the construction of the plant.

One of the main PP representatives in the region said: “El Cabril – storage for low and mid level radioactive waste – is already enough.”

The mayor of Baena was accused of not being transparent. He was also accused of not having invited other municipalities of the area, mainly the adjacent ones, to participate in the negotiations. They were speaking about negotiations, compensations and participation when the project was still to be defined!

In that moment, nobody believed that the plant could contribute something good to the area.

During the last month before withdrawal of the project, the mayor said in an interview that “there would not be dangerous waste in the plant”. Mass demonstrations against the plant were held in different cities of the area. Even then, technicians of the plant acted with a certain arrogance: they said “the plant will be built in spite of the social rejection”.

Tecmed, finally, began to share information about the project. However, it was too late to become transparent. Finally, after a brief space of time, Tecmed abandoned the town of Baena.

Key stumbling blocks in the process, and corresponding recommendations, were identified in WG2 discussions. The unilateral proceeding of the city council of Baena caused rejection. The representatives of the farmers, merchants...as well as the neighbouring city councils should participate in the process.

There was a lack of transparency and a dearth of information. The lack of definition of the project caused speculations, which obstructed any view of the actual project.

The arrogance of the company did not appeal to citizens.

The political parties, far from having the necessary responsible attitude, played their tricks against their opponents only in order to obtain a bigger index of popularity.

No agreement was found among the members of regional parliament, or among the different executive levels.

The project should have been clearly defined and communicated from the earliest stages. Universities or other experts (neutral ones) should be available to explain to the stakeholders the project. If a plant is truly safe and correctly designed, if it is good for the development of the area, the opinion and explanations of neutral experts gives robustness and credibility to a project in the public mind.

A communication plan, to avoid speculations, is needed.

Only then can we avoid the “Nimby” effect and the Bull’s eye or Doughnut effect (“I want it but it is rejected because my neighbours do not want it and do not want me to have it”).

WG2 Case study conclusions

As you will see, some of the following case study conclusions were also part of the presentation by Mariano Vila d’Abadal, being general conclusions of COWAM-Spain.

- Who is responsible for beginning the process?

The law, as recognised by all participants of COWAM-Spain, says that the government should be the starting point of the process. Thus national government must exhibit its intention of solving the problem of the radioactive waste with a total guarantee of safety and transparency.

- And, who is to participate?

Another conclusion is that the municipality is an essential partner in the process. As ratified in the Aarhus convention, the citizen has the right of participation, of information and of free access to justice. The Regional government (CA), in addition to their competences in the matter, should also participate as representative of the society of their community.

- And, who checks the process?

A National commission should be created to guarantee fair play by the partners during the process. Its members should be determined by State Parliament: it should be representative of experts and of the stakeholders. This commission should define the conditions (social, economic, environmental, logistic, geographic, technical...) that should be found in any territory considered in order to be able to host the waste installation.

Likewise, this commission should invite the municipalities which fit with the conditions previously described, to participate in the process.

Finally, the Commission should introduce to the government some candidates as well as a methodology of information and participation to be developed in the candidate territories.

- How should information and the citizens’ voice be managed?

The CLI (Local Committee of Information) is seen as a good tool to receive and to give information, as well as to perform consultations and gather opinions of stakeholders. We believe that the government should promote the institutionalisation of CLIs. It is the way to give a legitimate form to public civic participation. Even more, the CLI is also a good instrument to have in consideration for the long term governance of waste.

Once safety is guaranteed, then transparency, participation, compensation and provisions for long term governance are requisites of the stakeholders.

Thank you for your attention.

INTERPLAY BETWEEN DECISION LEVELS: SUMMARY OF FSC ROUNDTABLE DISCUSSION

Janet Kotra
NRC, United States, and FSC member

Are there clear definitions of roles for the national and local level in Spain (with regard to waste management decision making)?

- Not yet. There still is opportunity to shape the roles in the context of defining a process.
- The lead rests with federal government, but a need remains for wider national consensus.
- ENRESA must draft a Radioactive Waste Management Plan; what is not clear is how stakeholder input will be taken into account in accord with the Aarhus Convention.

How to balance national imperatives with local views? Who should lead, local or national?

- Lead for structuring any site-specific stakeholder involvement process should be at the local level, with the federal government retaining the final decision-making authority.
- Many participants spoke of the value of retaining a municipal veto as is the case in Sweden and Finland.
- In many countries, the “regional level” is also important; lack of assent/support there can derail agreements reached between municipalities and federal governments.

Is there any national framework for supporting the local level (host communities and/or neighbouring communities) from economical viewpoints and others?

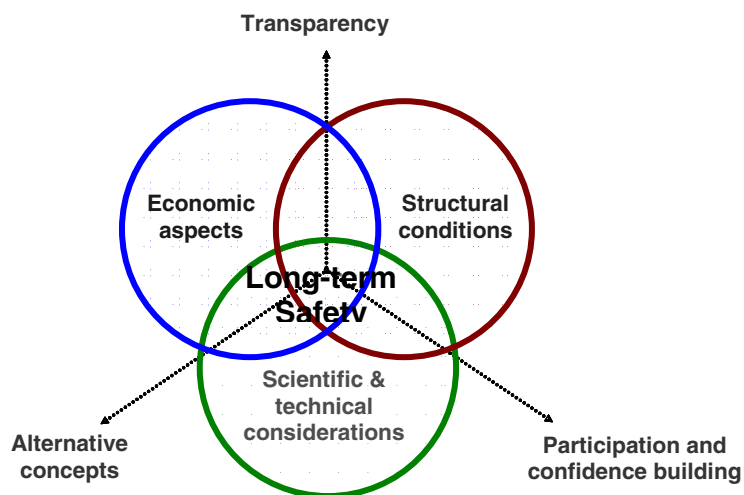
- Participants agreed on the importance of providing generous resources, setting up legal tools, allowing for some measure of local oversight (in addition to, or to complement that of regulatory authorities), and building a long-term role for host community.
- Many participants noted the value of empowering a local commission to provide and receive information to and from the local community;
- Local communities should have the ability to decide what role they want to play and under what conditions.

LONG-TERM GOVERNANCE FOR SUSTAINABILITY

Meritzell Martell
Enviros Spain

In the context of long-term radioactive waste management, the decision-making process (both the process and the outcome) needs to be framed within the context of governance for sustainability. The concept of governance recognises that the process of governing is not static but dynamic and involves a set of patterns of interaction between public, private and civil actors in formal and informal arrangements. Governance is associated with learning, adapting and innovating. Sustainability is a process of progressive transformation and requires all these arrangements in order to move forward the transition to sustainability. Sustainability is understood here as “a moral idea, a universally acknowledged goal to strive for” (O’Riordan, 2004).

The framework of sustainability is based on seeking a balance between economic aspects, different social and cultural realities and environmental conditions as a key for the survival of the planet (O’Riordan, 2004). Sustainability is a useful concept which provides the basis for evolving towards long-term governance for radioactive waste. It is argued here that one can take the three-dimensional figure of sustainability and apply it to the long term governance of radioactive waste. For this to happen, a balance should be sought between scientific and technical considerations, economic aspects and structural conditions. These considerations can evolve and adapt to embrace participation and confidence building, transparency and alternative concepts whilst primarily ensuring long term safety.



Structural conditions have implications for governance and sustainability. The legal, institutional, policy and regulatory framework produce a meaningful set of structural constraints on the nature of participation. For instance, Spanish political culture is characterised by its moderation and passivity. Political scientists argue that there is a general perception of politics as distant and boring as well as a feeling of critical scepticism towards politicians, and even political cynicism (Subirats, 1996; Montero & Torcal, 1999).

Another structural aspect facilitating or hindering long term radioactive waste governance (and facility siting) is the culture of the regulatory authority. Participants in Working Group 3 of COWAM-Spain (WG3) emphasised the need of well defined regular interactions between local stakeholders and the regulatory authority to ensure the commitment to safety and its communication. Regulators have an important role in building up confidence in the long term and for this to take place, their independence needs to be constantly demonstrated.

From a sustainability perspective, it is no longer acceptable to have one tier of government making decisions. Instead, multi-level governance provides a useful perspective for coping with the challenges of facility siting. In this regard, WG3 felt that the current local information committees need to evolve towards more institutionalised and legitimised mechanisms for long-term involvement. These mechanisms should be more participatory and transparent. Furthermore, they should be provided with the necessary resources to ensure that sound technical bases are broadly understood and communicated to all stakeholders.

The time scales for long term storage or geological disposal considered are extremely long and move beyond the knowledge we have today, present values and behaviour. WG3 of COWAM-Spain examined issues raised by the existence of a facility, and related to institutional, ethical and social considerations. Four interrelated issues were addressed during several working group meetings and annual round tables:

- Information and transparency.
- Control and monitoring in the long term.
- Responsibility and ownership.
- Economic resources and local development in the long term.

Economic aspects are undoubtedly an issue of concern for local stakeholders. Waste management facility hosting may be regarded as an opportunity to: first, enable local and regional development; second, assume responsibility for waste generated in the benefit of society overall and third, create and maintain local knowledge and competence to monitor management over the coming decades and generations. In the framework of WG3 of COWAM-Spain, a specific case study comparing economic instruments and financial schemes in the nuclear sector and the mining sector served as a basis for discussion around economic resources and local development in the long term.

The objectives of this study were two-fold:

- (i) To assess the nature and role of economic instruments assigned to territories where energy facilities are located.
- (ii) To evaluate the efficiency of these instruments to advance sustainable development.

A comparative case study was undertaken comparing the funds from the Ministry of Energy to municipalities in nuclear zones versus the grants for promoting development in mining municipalities. The main conclusions from this study may be summarised as follows:

- The funds that ENRESA transfers to municipalities in nuclear areas are more an end in themselves than a means to promote socio-economic development of nuclear zones. These funds have indeed allowed these municipalities to invest in social development projects, such as education and cultural facilities and basic services. Nevertheless, these funds have become primarily a means to facilitate local acceptance of nuclear power plants in Spain.
- Economic instruments are necessary but are not sufficient to guarantee sustainable development. Socio-economic development depends on a number of variables, such as leadership, vision, entrepreneurship in the area, geographical situation of the locality, etc.

- Institutional co-ordination and financial support are needed for local economic development in the long term. At present, mayors are regarded as the sole person responsible for finding alternatives to the socio-economic development situation in their municipalities. Up to now, neither public nor private organisations have been willing to invest in these areas.

Taking into account the discussion above, the challenges faced by the present initiative under consideration for a “national interim storage facility for spent fuel and high level waste” in Spain are:

- The need to take decisions thinking about the long term.
- Designing the future of nuclear zones in a participatory fashion and at an early stage, working with local and regional governments and citizens to devise mechanisms for social learning, economic development and environmental protection.
- Regarding a national interim storage facility in Spain as a tool for research, training and social learning in hosting municipalities.
- Finding alternative means of discussion and information alongside the media, still the “vital window of illumination” for all of this transition.

There is no simple way to deal with complex issues. However, it is recognised that the typical approaches to decision making in radioactive waste management have failed. In contrast, strategic approaches which promote proactive changes, collaboration and multi-level governance may become a tool for designing a common vision of nuclear areas shared by social and economic stakeholders.

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**SUSTAINABILITY ISSUES:
SUMMARY OF FSC ROUND TABLE DISCUSSION**

**Reported by
Gérald Ouzounian
ANDRA, France and FSC member**

**Markus Fritschi
Moderator
NAGRA, Switzerland and FSC member**

Following Ms. Martell's presentation about the long term governance findings of the COWAM-Spain initiative, participants discussed two questions. The following points were reported to the plenary from the round tables, each of which grouped FSC members and Spanish stakeholders.

Q1: The transportation activities are likely to be an ongoing issue over several years. There is a potential for public individuals to hinder the transport of this cargo by various means. How do you lower the probability of such an event, and should it occur, how do you manage the situation taking into account public confidence in general?

- Genuine safety concerns exist within the public regarding the transport of radioactive waste. This, notwithstanding an amazingly good record that reflects a solid technical and institutional grip on the issue. The perception of risk is thus an indication, of sorts, of common failure of all communication programmes.
- We must recognize that there is politically motivated opposition. Agitating the safety spectre regarding transport is recognised as a legitimate ploy by certain green groups. Transportation is seen as a symbol for opponents. Institutional responsibility is that of transporting safely; various means are used for that purpose, from secret to fully open announcement of the transportation programme.
- Examples from Germany are telling. Thus, transferring of spent fuel to France is not a cause of protest; protest occurs when the spent fuel is returned for storage in Germany. The industry has been requested to have storage on their sites in order to reduce the risk with transportation of nuclear material. Only vitrified waste is transported to a centralized storage. The probability of hindering rail transport is reduced by a strong control by the police, especially along the last few kilometres.
- In Sweden, there is no protest about transportation, which is performed by sea.
- In Argentina, the response has mainly been legal, with an agreement of the Parliament, after having been shown the movie from the United Kingdom showing the crash test of a train on a cask. The clear framework which has been drawn in Argentina led to reduce opposition and hindering.
- In Japan, information about transportation is kept secret in order to avoid or limit hindering. In Germany, there is also some game in performing transportation at another date than the one announced.
- In the Canada, there is no transportation at this time.

- Transportation is regulated by a permit delivered by the regulator in most of the countries.
- In Germany and in Canada, clear information is delivered to the municipalities; this information is considered as a factor for safety. Local municipalities play also a role of social institution, in a very democratic way as in the United Kingdom.
- Safety does require a political space for discussion. The real issue is security, though, which causes information not to be able to be shared as freely as some would be willing to do. For instance, APAT had placed on the web a map of waste sites in Italy; the map has been withdrawn due to security concerns.
- How can we deal with these difficulties? Information campaigns are needed, and this implies working hand in hand with the mass media. The visibility of the regulator, as a guarantor of safety and security, is paramount. An external, social institution could be set up to manage the conflicting requirements arising from security and safety desiderata. Its role and activities could assure protection of the principle of transparency and participation. This institution could be formed of people representing industry and regulatory expertise along with social leaders.
 - The wise men committee envisaged by “COWAN-Spain” could include a subcommittee that would deal with the issue of the security/safety of transportation

Q2: The host community for the central storage can be seen as providing a “service to the nation”. Beyond the responsibilities of the operator (Polluter- Pays Principle), should the national government provide compensation for this service (User-Pays Principle)? How will such an idea be received by the different stakeholders in Spain? Is there a precedent for such compensation? How is it negotiated?

- Some round tables agreed that service to the nation can appropriately be discussed as a target for compensation. It was suggested that in this case, the recipient or “host community” must be looked at as being a larger community than the host municipality. In fact larger territories may be placed – or see themselves placed – in the category of “host community”. Once a community has been legitimately chosen, storage must then be seen as providing a service to the nation. This service should be one of the elements for which compensation ought to be foreseen. The principles and rationale for compensation should be established ahead of the siting process in order to avoid situations of last-minute bargaining, even if some flexibility may be allowed to meet special arising needs. These principles and rationale for compensation should be established with the help of regional governments and associations of mayors. They must apply to the entire the operational life of the storage facility and its later decommissioning.
- However, it can be viewed that in Spain the government provides compensation for service to the nation through the mission given to ENRESA. The precedent created implies that it will become difficult to go back. As soon as a spent fuel is discharged from the reactor, it is considered to be waste and becomes property of the government. The government has a clear responsibility for managing long-term storage and for compensating communities. Money is coming from the plants, in the form of a polluter-pays tax, and is managed by ENRESA.
- In other countries, the question of compensation is raised taking account of the opening of the energy market, and its consequences on competition. Compensation is not used in Sweden and in other countries as a direct explicit feature. Funds exist in all countries for reinforcing roads, developing public service, supporting further studies, but the word “compensation” is avoided.

- However, compensation does exist in other fields of activity, such as for the oil industry in the Shetland Islands (which negotiated well). Other forms of compensation may exist as for example local taxes or lower price for electricity delivery.
- Direct compensation cannot be the only way to encourage local communities to accept an installation.
- The “end use of funds” should be defined. Recipients should not have carte blanche to spend funds on municipal projects without a vision of how they can contribute to sustainability. Elements to be considered in the end use of funds are:
 - Development of human capital.
 - Recognition of disturbance.
 - Improved infrastructure.
 - Property protection.

The aim should be to create a sustainable relationship with the facility at all points in its life cycle. The mining example given by Ms. Martell was a good one; there is no intrinsic difference between mining sites and the installations of other environment-affecting facilities, nor in the basic issues raised by their decommissioning.

**STRENGTHENING THE DECISION MAKING IN SPAIN,
THE NATIONAL CENTRALISED WASTE STORAGE PROJECT AND
THE COWAM-SPAIN INITIATIVE**

Yves Le Bars

Former chairman of Andra, expert in development decision making

Having to give my expert point of view on these three days of workshop, I want first to read the Spanish radioactive waste management history with the FSC glasses; then to develop three scenarios for the future RWM, each with different driving forces; and finally come back to the local scene, with the three pillars of confidence.

The FSC Decision-Making Process (DMP) model is well known and documented in different OECD/NEA brochures: it highlights the necessity of a well-defined step-by-step process, with an adapted structure of actors (industry, implementers, regulators, government, parliament, local authorities...), and open behaviour by people involved.

We more recently added that the process needs an “engine” (a driving force, an energy moving the system), and a “driver” (the organization in charge of overseeing and driving the process, including taking care of the associated debates that will unfold).

Reading the Spanish radioactive waste management history

We want to read the Spanish situation referring to the FSC criteria. Before analysing the Spanish situation, I think it useful to summarise the three stages of decision making many European countries followed since the Second World War: our structure for public action is for the most part issued from this age, but societal expectations are no longer the same.

The first DM stage is characterised by a lack of technicians, and a lack of goods to satisfy the basic needs regarding the American consumption model. The political response is adapted to the situation: decision-making power is given to the rare experts. These are in charge of drawing plans and strategies; they personally, or their organisation, give coherence to public action: it is not necessary to display a common strategy. In France it is the golden age for the Commissariat à l'Énergie Atomique (CEA), in charge of “giving France the mastery of atomic power”. Opposition is often strong: debate is not part of this DMP. Strikes, street confrontation are the way to express opposition (see in France the decolonialisation process...).

The second stage began when the politicians in charge of decisions felt that experts could propose a greater variety of solutions: “counter-expertise”, alternative or “independent” expertise, becomes important. For example for the design and siting of highways, civil society asks for the consideration of alternative routes. There are still no formal provisions for debate, but interested groups organise legal actions. At this stage we can say that the decision maker hears out both experts and “counter experts”.

In the third stage the decision maker and the experts have involved “the others” in the decision-making system. The AIDS issue could be seen as having triggered this new stage: the AIDS patients not only are (or experience) the problem, they also claim a position as actors in finding the solution.

It's a three-way game: the experts, decision makers, and relevant stakeholders are interacting. Three major factors back this stage:

- Many actors were before under government control, but now industry (with globalization), local municipalities (with regionalisation), and NGOs tend to be autonomous, and independent of the State;
- It is no longer a question of “keeping up with America”; all nations tend to find their own development model: the DMP has to invent new locally-adapted solutions;
- Society has to face new types of risks, including “bio-societal” risks : low doses, long term and insidious effects often associated with the products of powerful industrial groups (e.g. The nuclear industry, pharmaceutical and chemical companies, the food industry...)

At this stage it is compulsory to elaborate a “public policy”, as a common strategy, adapted to, and adopted by, different interested groups. The coherence of the different decisions made by different actors is imparted by this common “public policy”.

With opinion polls (Eurobarometer, or the IRSN French Barometer of risk perception), we can state the low confidence given by the general public to the major actors in nuclear and radioactive waste management. Only 12% of French people believe they are told the truth on risk involved with radioactive waste. When comparing “competence” recognized in different actors with their tendency to “tell the truth”, we see lack of confidence given to utilities or politicians, as consumer associations and physicians are thought most likely to be telling the truth (even if there are not perceived to be the most competent experts).

This lack of confidence could be analysed as a gap between a DM process still at the first or second stage, and population needs, which correspond to a third stage DMP.

Before coming to the Spanish scene, I want recall some of the key FSC findings. To succeed in a DM process for radioactive waste management, FSC believes there is a need for:

- A process.
 - In discrete steps, with an identified beginning and end.
 - With alternative outcomes possible.
 - Capable of mobilising research, and with an independent evaluation.
 - With discussion forums.
- Actors ready for collective learning.
 - Necessary recognition of the cumulative knowledge outside the laboratories.
 - Aware that the interest of each is not well understood ahead of time.

FSC adds that attention must be paid to the phase “before” the process. How to design such a process? Which engine, which driving forces? And to guide the process, a driver is needed.

And a question: “which organisation carries the debate?” There is no simple answer, but it must be a body in which a major part of the opinion has confidence: municipality, university, an agency, a specific new body?

What about Spain, regarding these FSC criteria?

As part of a process we have to underline positive factors: theirs is a national RWM plan, periodically revised, with financial evaluation. But is it, at this stage, a national process, step by step, with clear deadlines, and involving the input of all major Stakeholders?

ENRESA (the implementing agency), AMAC (as a group of interested municipalities), CSN (regulator) are major national actors. Their role is clear, and they are working together. But the industry seems rather shy, and waiting for others' initiatives.

As civil society seems not to be mobilized on the RW management issue, the actors have difficulties to go from the idea that "more communication is needed" to "we are entering into collective learning".

ENRESA carries a heavy burden; is it not too much to be in charge of finding sites, in charge of dismantling, and also operating repositories?

Spain is close to the French tendencies of the nineties: the expert (engineer, civil servant...) and decision maker is convinced that deep geological disposal is the solution, with a low willingness to share information. A failure in siting leads to a moratorium. It is the first stage of the DMP, as mentioned above.

But at the local level, in decommissioning and dismantling, Spain is experiencing a new legal process, and introducing independent experts (with the DD survey committee in L'Hospitalet): the DM process is here shifting to the second phase, and with the involvement of AMAC, to the third phase.

Searching for the driving forces: three scenarios

The Spanish situation could help FSC to understand more about the driving forces (the engine) of a DM process. We see at the Spanish national level forces emerging to boost the DMP and siting: AMAC and ENRESA are actively putting the RW management issue on the political agenda.

I want to present here three possible extreme scenarios, and how a step by step process will develop, depending the initial driving force. These scenarios have been written for the current French debate on the RWM policy.

Scenario 1: "no decision" (the German way)

In this scenario, neither the government nor the industry want to go to a decision and no clear process leading to a possible site for geological disposal or long term storage is decided.

It could be understood as a compromise between ecologists and electricity companies (the lowest cost for RWM), waiting for social maturity of final solutions.

In the future, long term storage capacity will be necessary, and could be built, at a low financial and political cost, on NPP sites.

This scenario is viable since the nuclear industry still exists: surveillance, competencies and money are there (but for how long?).

Scenario 2: "ethics and business" (the Nordic way)

In this scenario, industry and the government share:

- The willingness not to transfer burdens to future generations, charging current wealthy operators, for ethical reasons.
- But are under social and economic pressure to close the fuel cycle, and to clarify long term costs for dismantling and waste management.

These driving forces lead to decisions:

- A DM process is decided, with the objective of defining a strategy to reach a sited geological repository (see Canada).
- Negotiation of a contract between the State and possible hosting local communit(ies) (see Swedish involvement of municipalities, and Port Hope contract in Canada); this contract will become the reference for the veto right of the local community.

Is this unlikely in the current Spanish context?

This scenario allows earlier phase-out from nuclear energy than does the first.

Scenario 3: “Ambiguities” (the way of the majority of Europe?)

In this scenario there is a driving force, a strong willingness to close the fuel cycle. But the major actors of the nuclear industry still remain in the first stage of DMP.

With a minimum of public decisions, ambiguities and misunderstanding are perpetuated, limiting open debates as much as possible. Industry leaves the responsibility to the municipalities to solve the problem, and to organise local development. Extensions of storage capacities are useful, while awaiting good news: a possible site to be found by other pressure groups.

This intermediary scenario could be unstable, and revert to the first one (no decision), or to the second if the radioactive waste management issue becomes mature enough in society.

The three pillars of confidence at the local level

In the second scenario we introduced the local dimension, with the negotiation of an agreement between the national level and the affected municipalities. But here too, the early stages are of paramount importance, and will determine the following phases. We have to develop this point.

At the beginning there is this sentence: “Mister Mayor, your geology is of best quality, you are selected...” If the mayor has not already in mind that the problem exists, and that the government has approved a safe concept, and a fair process, the most likely answer will be: “Get out, quickly”!

To get the desired answer “Mister DG of ENRESA, I’ve understood... And I want to work for RWM in my community...” a strong national involvement is compulsory. The local level needs the support of the national level.

The definition of the three pillars of confidence has been clearly put on the table by AMAC. I want here to recall them:

- Pillar 1: safety conditions (well understood, and assessed) (see the KSB 3 concept adopted before siting process), and uncertainties noticed (transport issues, failures...).
- Pillar 2: dialogue, requiring a methodology for dialogue at the early stages of a well-established DM Process.
- Pillar 3: development: through a national/local contract guaranteeing some initiatives (Posiva office shifting to Olkiluoto and preserving a fine old building...).

We have seen that it’s possible to implement these three pillars in the Vandellòs dismantling case.

I wish to add additional remarks on some conditions for a fruitful debate on the expert side. Experts, technical people or researchers (from the industry, the operator, and from the regulator) must be aware of their own “irrationalities”: we see how some technicians “fall in love” with their product. It’s not only in the nuclear industry that we can observe this tendency. The debate on the result of the technician’s work is a good opportunity to clarify the impingement of emotion upon his own job production: willingness to be tested is stressful but helpful! Technical actors could learn to combine “deep involvement” and “distance”: it is a difficult balance, but society needs both from experts.

Conclusion

1. At this workshop, we discovered the status of the Spanish process, at both national and local levels. And we’ve seen a well defined structure: major actors are here, but aren’t the early stages of a clear decision-making process still to be organised? Could the proposed National Commission have enough energy to boost the process?
2. We had the opportunity to bridge waste management issues and decommissioning and dismantling: there are a lot of similarities, but...
3. The municipalities association (AMAC) is a key actor, but industry seems to be too far off...
4. The FSC remains a forum to share national and local experiences, under the idea that democracy is the best way to succeed, in an ethical and responsible way. But have we the same definition of democracy? The OECD could help us look into this...

REFLECTIONS ON THE PROCESS FOR STAKEHOLDER ENGAGEMENT IN RADIOACTIVE WASTE MANAGEMENT PLANNING IN SPAIN

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Introductory Comments

First, I would like to thank ENRESA and the Municipality for the work in organising this workshop. The visit to the Vandellòs power station and the economic development zone, combined with the speeches, lectures, and discussions we have had here at L'Hospitalet have offered a well-rounded perspective on the inclusion of stakeholders in decision making. Even more important was that the atmosphere of the meetings was conducive to an honest and open exchange of ideas. The structure of the workshop offered ample opportunities for people to talk and listen to each other. On the whole, I believe the workshop established a learning atmosphere. In response to my charge as a rapporteur, I have endeavoured to be inquisitive and to explore explanations and interpretations that may be different – although not necessarily contradictory – to those offered outright.

I have been asked to participate and observe during the course of this workshop and also to comment from the perspective of a scholar who does research in the area of stakeholder involvement. I have arranged my comments as follows. First, I present some recent findings from the literature on public participation in environmental policy and decision-making. I have elected to focus on “criteria for success”. Second, I examine the strengths of the AMA-led COWAM-2 process emerging in Spain now in the context of these criteria for success. Finally, I reflect on some of the possible shortcomings that may loom on the horizon in order to alert process planners to anticipate the unexpected.

Gravity or Importance of this Issue

The people associated with the FSC have been acquainted with issues of nuclear energy for a long time. Working in one field of specialisation for years upon years, it is normal for one to grow more familiar with the topic and during this time one's perspectives shift. As a person who works largely outside the policy arena of nuclear energy or nuclear waste, I experience this topic with more novelty than most people in the FSC. I am not in the position to make any conclusions or judgments about how FSC participants interpret the risks associated with nuclear waste disposal. However, I do feel that, because of my lack of familiarity with this topic, my view may be a bit closer to a lay person's view. There are two very important aspects of this lay viewpoint we should always keep in mind. First is the astounding sense of danger associated with nuclear energy and nuclear waste. Second is the astounding sense of technological complexity associated with nuclear activities. These reflections lead me to ground these comments foremost in an observation that this is an incredibly important social issue with immense consequences for unimaginable lengths of time into the future.

Insights from Research: Criteria for Success and Failure

A prevalent contemporary issue in research into public participation is: What makes a process successful? It is not surprising that everyone wants public participation to be a success, but what does “success” mean? Conversely, what is failure?

A review of public participation efforts in environmental decision making by the United States Environmental Protection Agency (U.S. EPA) summarised the following factors as things that hinder successful participation (2001):

- Stakeholders do not have clear information about what will happen or its significance to the problem.
- Stakeholders do not have clear information as to what has happened to date.
- There is only one way to participate.
- Participation requires an incredible commitment on the part of stakeholders.
- Technical knowledge is not made readily comprehensible.
- Stakeholders feel that their input is trivial (or that they are mere figureheads).
- People feel that participating could be used against them (they give up some liberties, such as the right to challenge in court or speak out against the process).

This list starts from the perspective of the participants. It is also possible to examine the question from other perspectives. Indeed different people or actors expect different things of a process, hence they have different criteria by which they measure success (Tuler *et al.* 2005). This was confirmed in last year’s FSC workshop. In the NEA perspective on the German FSC workshop it was noted that not all stakeholders have the same kinds of interests (NEA, 2005). Stakeholders do not all participate for the same kinds of reasons. Therefore, a robust process is needed that can achieve agreement on all relevant dimensions, such as safety, economics, equity, legacy, etc.

To promote thinking about how to meet these multiple objectives, it may be helpful to differentiate between criteria having to do with outcomes of the process and those having to do with process itself. The following is a list of criteria associated with success in the literature on public participation (Beierle and Cayford 2002, Carnes *et al.* 1998, Duram and Brown 1998, Schuett *et al.* 2001, Webler *et al.* 2001).

Outcome Related

- Recommendations are made and implemented.
- Problems are competently solved.
- Public trust in government increases.
- Controversy and conflict is reduced.
- Social capital is enhanced.

Process Related

- The problem is seen as a shared problem, a social problem.
- Stakeholders are participating in a spirit of collaboration.
- Government demonstrates commitment to seeing the process through to its end.
- All relevant parties are participating.
- Participating does not require too much time or extraordinary effort.
- Stakeholders do not need to give up other legal opportunities in order to participate.
- There are means in place to ensure that technical knowledge is made available to all.
- People feel they were heard and their input was valued.

- The process is seen by all as fair.
- The most vulnerable parties are represented.
- There are many different ways to participate.

These criteria relate to many different aspects of the process. Most people would agree that all of these are important. A second insight from the literature is that, while people may agree on many of these criteria (everyone wants the process to solve problems, build trust, be fair, etc.), their priorities differ. Thus, some participants may emphasize getting problems solved more than ensuring the process is fair. It has been postulated that differences in priorities may have origins in personal experience or in personal perspectives on the problem as well as the local social-political setting of the problem. (However, research is still in its infancy on this topic and no results are yet available.)

The Nuclear Waste Disposal Issue in the Spanish Political Landscape³

The process to investigate finding an acceptable site for interim disposal of nuclear waste in Spain is being initiated under the umbrella of COWAM-2 and is being led by AMAC, Association of Municipal Areas Hosting Nuclear Power Plants. This is an approach that is driven by the leaders of local communities. The siting approach is basically a mapping and elimination process overseen by a national commission. To summarize:

- National Parliament and Government have agreed to pursue only an above-ground interim storage site for high level radioactive waste
- All parties accept that the site search must be driven by local communities.

ENRESA (the Spanish Nuclear Waste Management Company) is charged by law with producing a radioactive waste management plan (RWMP) annually. The Ministry of Economy (MINECO) is charged with licensing plants and depositories. The Ministry of Environment issues an environmental impact declaration.

Strengths and Advantages of the Present Approach

The present approach underway has a number of strengths that suggest the process will be successful.

- 1) The problem of HLRW disposal is seen as a public problem. ENRESA has taken the position that waste disposal is not its problem alone. Instead, it sees itself as an important collaborator in what must be considered a social and political problem.
- 2) There appears to be shared agreement on the problem and how to solve it. We have heard that there is widespread support for finding a single interim above ground facility by many of the major political institutions including the National Parliament, the Ministry of Industry, Tourism, and Commerce (MITYC), the Association of Municipal Areas Housing Nuclear Power Plants (AMAC) and the Council for Nuclear Safety (CSN).
- 3) Stakeholders appear to be participating in a spirit of collaboration. While we do not have the data to prove this for every stakeholder, it appears to be true for several key players such as ENRESA and AMAC. AMAC is clearly fostering a collaborative approach to problem solving. Because ENRESA has adopted the perspective that this is a social problem and not ENRESA problem, it is also taking a collaborative approach to solving it. Collaboration is

3. Because Anna Vári (Executive Summary, this volume) summarised the contemporary history and present status of nuclear waste policy decisions, only a brief overview will be given here.

known to produce solutions that are politically more acceptable to a wider range of stakeholders than solutions that are forced onto stakeholders by powerful institutions. ENRESA appears to be exhibiting signs of constructive collaborative behaviour including:

- Taking the task seriously.
 - Demonstrating a willingness to listen to all stakeholders and positions.
 - Demonstrating a willingness to construct a coalition of partners.
- 4) ENRESA and AMAC are engaged in international dialogue and learning venues such as COWAM-2. These settings introduce approaches and perspectives on the problem of HLRW disposal that may be educational and new to the Spanish political scene. They also provide insights from other communities and countries where siting processes are further along. Finally, they provide opportunities to engage with “friendly advocates” in a manner that cannot be done in the context of a political dialogue.
 - 5) AMAC has a robust identity. It includes not only host communities, but neighbouring communities as well. The differential exposure to risk among members leads the organization to adopt a more holistic concept of risk that will lead to solutions that are more widely accepted. AMAC also has the benefit of strengthening local democratic institutions in Spain.
 - 6) While the National Parliament is supporting the AMAC-led approach, it is also not imposing a timetable upon the process. For as long as this condition exists (which may not be forever; at some point in time this may well become a politicized issue), the process is truly in the hands in a collaboration of local communities, governmental agencies, the nuclear industry, and ENRESA.
 - 7) Because the solution has been limited to above-ground interim storage, the set of technical uncertainties to resolve is reduced. The technology of this solution is fairly well understood and has been demonstrated in many countries. Thus the process can proceed without waiting to resolve difficult technical uncertainties.

Possible Vulnerabilities and Points for Attention

Given the criteria for success summarized above, and given this preliminary assessment of some of the key strengths of the present program, it’s now possible to entertain some of the points of vulnerability in the present approach. There are several points to emphasize regarding the process being undertaken in Spain.

- 1) The process must be clearly specified. Successful processes are clearly defined. It is best when all participants know what will happen when, and where the decision points are. This point has been clearly made by Carmen Ruiz Lopez (NEA, 2003, p 14.). At present this is one of the most important vulnerabilities of the COWAM-2 approach in Spain. Because this is a locally-led process, it seems to be evolving as it moves along. This makes it highly responsive to local influence, which is very helpful to securing legitimacy. At the same time, it also makes the process unpredictable. There may be a danger that the process is not clearly specified to some parties.

In addition to the COWAM-2 process, there is a formal permitting process and an environmental impact review process. The main vehicle for participation is a 30-day public comment period (Prieto, 2005). Both of these are highly formalised and offer citizens and stakeholders limited opportunities to participate. In the permitting process there is a role for interest groups to voice their concerns, but there is no opportunity for involvement of individual citizens. There is, however, an allowance made for the mayor of the municipality

to visit the site in order to oversee its technical competence. Of course in matters of complex nuclear technology, this may be more of a symbolic visit, but it can be important for popular credibility and legitimacy (Prieto, 2005).

One point of vagueness has to do with the important issue of how communities volunteer to host a facility. There are many ways this could happen. Different countries have approached volunteerism in various ways. In Canada, for example, communities must hold a special referendum to approve the decision to volunteer. Such a measure does ensure broad democratic legitimacy, but it does not necessarily protect minority interests, interests of those who cannot vote (such as children and future generations), and it does not protect the interests of those outside the municipality (such as neighbouring communities). It is not clear if the Spanish process will require referendums. In fact there are many questions regarding this issue. Questions to entertain are:

- What roles should local elected political leaders have in volunteering a municipality?
- Is simple majority rule enough to guarantee democratic legitimacy in this case?
- What roles should the regional parliaments have in allowing a municipality to volunteer?
- What roles should neighbouring municipalities have?
- Must there be a consistent policy nation-wide?

- 2) Who will oversee the process? One way to ensure that the process is clearly specified is to assign the responsibility for carrying out the process to a certain organisational body. In making such a determination several factors need to be considered.

Foremost is the issue of democratic legitimacy. Since this process has implications for the public interest, it needs to be overseen by an organisation with democratic accountability. AMAC cannot be this institution because it is not responsible to the public interest at large. Instead, it is more reasonable to expect the process to be overseen by an agency of the Federal Government or a committee appointed by the Parliament. The latter was discussed in the workshop as a probability.

A second issue is political insulation. Can the organisation charged with seeing this process through withstand forces of political influence when they are applied? What measures can be taken to protect the budget of the process? What measures can be taken to protect the reputation and career of individuals who take leadership roles in this process?

A third issue is administrative capacity and technical competence at carrying out a participatory process. What resources does the organization have and need? How capable is the organization to deal with contingencies that arise during the process? Staff involved with carrying out the participation process need to be trained in the following:

- How to not get angry when attacked by critics.
- How to listen to critics.
- How to demonstrate listening/hearing to all input.
- How to respond in a manner that builds trust and respect.
- How to build collaboration/consensus/compromise.

- 3) Government must have lasting commitment to the process. One of the most robust conclusions from research into public participation is that commitment is one of the keys to success. One of the most reproduced findings from literature examining the success of public participation efforts is that processes are more successful when the government agencies involved show lasting commitment to the process.

Commitment means defending the integrity of the process, as it is understood. It also means agreeing to continue to participate in a constructive and collaborative manner over the lifetime of the process.

Toward this goal are two important steps. First, is to specify the key stakeholders and governmental institutions whose commitment should be sought. Second, is to specify the means by which commitment will be issued and carried out. This latter point suggests a need to have the process clearly defined.

A central component of the AMAC-led process is the proposal for an oversight committee. The committee would most likely be appointed by Parliament for specific terms of duty. This mechanism could serve as the vehicle for securing commitment on the part of major stakeholders.

At present, the Nuclear Industry and its regulators do not appear to be prominently involved in the process. The regulatory body that reports to Parliament, Spanish Nuclear Safety Council (CSN), is not playing a highly visible role in the development of this process. We did not hear about the involvement of the Spanish Nuclear Energy Forum, which as a civil nonprofit public institution might play a very important role in the process. Another group active in public education – the Spanish Nuclear Energy Society also did not appear to be active in the COWAM-2 process. In general, I perceived a limited involvement by the nuclear waste generators. Is their lack of involvement at this stage problematic? It may be that they are of the opinion that the best way to secure a legitimate process is by leaving it in the hands of the communities. This is a reasonable strategy, but it does have its dangers. For instance, if the voluntary siting process does not succeed, the waste generators may be left holding the waste. Admittedly, this is also a problem for AMAC. However, a more robust process may result from organizations such as the Spanish Nuclear Energy Forum or the Spanish Nuclear Energy Society demonstrating commitment to this process, and from their being very active and visible in the process.

- 4) The process must lead to effective political deliberation at all levels. As it presently stands, the COWAM-2 type process being developed in Spain right now leans quite heavily on deliberation at the local level. A principal aspect of this process is that the impetus for volunteering must originate at the local level. Municipalities also need to participate in the technical review of the project. In summary, quite complex discussions, both about politics and technology need to be carried out. It is not evident that municipalities in Spain have experience in doing this at all, let alone doing it well. In one case presented at the workshop, the case about the TECMED chemical waste facility siting in Cordoba, the political process appears to have failed (Ferrus, 2005). Despite blatant, widespread (92%) popular opposition, the municipal leadership continued to support the siting plan. When the public appealed to the regional parliament, they too refused to act according to expressed public interest. This case suggests that local elected political leaders may be quite independent of local opinion. If this is indeed a prevalent condition in Spain, participation by citizens in RWM decision making may be difficult to achieve.

Two of the purposes of COWAM-2, however, relate precisely to this issue. They are: (1) to develop deliberative decision-making processes that are perceived by all to be fair and (2) to develop guidance on innovative democratic governance. If COWAM-2 is successful, it will start to build the kinds of local institutions and democratic deliberative skills that are needed in order to have a competent and fair political debate. Some of the skills for regulators have been outlined by Carmen Ruiz Lopez in an earlier document (NEA, 2003).

- 5) There must be many different ways that people can be involved in the process. Devising a process with multiple and diverse opportunities for stakeholder involvement helps make the

process more likely to succeed. Because different stakeholders have different needs and expectations, they also need different ways to participate. For some, a 20-day written comment period will suffice. Others may need to be involved only if their community or region is considered for hosting a facility. Still other groups will want to be involved in every step of the process from beginning to finish.

A commonly-used metric in the public participation field is that there is an inverse relationship between the number of stakeholder participants and the amount of time they are willing to commit to participating. At the fundamental level are a great many stakeholders who wish to be informed about what is going on. They will attend a handful of meetings to learn about the process, will read a brochure or website, and may wish to be alerted when major decisions are about to be taken. A moderate number of stakeholders will have a desire to be more involved. They will attend more meetings, maybe participate in a workshop or working group for a few months or more. They may wish to voice concerns or ask questions. They may wish to comment on important decisions. Finally, there is a smaller number of stakeholders who wish to be deeply involved. They will attend regular meetings for months or years and engage in a committed dialogue over an extended period of time. The participatory process needs to make allowances for all kinds of stakeholders.

Stakeholders want to make different time commitments, but they also have different qualities of contributions to make and the process needs to be sure to accommodate these differences. For example, some stakeholders will have a narrow technical expertise to contribute. Some stakeholders may have a very narrow interest area. Others may be broadly concerned about many different issues. These differing qualities of interest require the process adapt to many different needs.

Conclusion: The need to deliberate

In general it is evident that there are a great many advantages to the COWAM-2 process being developed in Spain. The sketch of the process to date is good. The strengths include a public consensus on the problem and way to move forward and a commitment among AMAC and ENRESA to work collaboratively.

There is also clear awareness that the success of this endeavour hinges on there being a competent and effective political discussion at the level of the municipality. Despite this acknowledgement, it is not clear how a vibrant local deliberative process will be achieved. There do not appear to be in place the structures for local discursive participatory democracy. Is it possible that the country can learn by doing? That is always a possibility, but this is an extremely significant issue.

Local political discussion will have to deal with the multiple facets of this issue including: safety (how safe is safe enough?), information (what do we need to know and what level of uncertainty are we willing to tolerate?), and social/economic development (what kind of community do we want to be?). These are incredibly challenging topics for any community to wrestle with.

On a more instrumental level, during the design of this process it will be necessary to come to terms on several important attributes including the process rules. Specifically:

- How can a community volunteer?
- How can a community withdraw?
- How will negotiation be arranged?

It seems clear that people involved in the COWAM-2 process in Spain agree that the days of imposing decisions from above are gone. It is certain that the answer to the RWM problem in Spain

will not be dictated by Madrid. The movement toward devolution in Spain means that autonomous communities and regional Parliaments will play significant, if not decisive, roles in solving this problem. In so doing, the regions and communities will experiment with and develop their own local flavour of democracy. Questions remain as to what can be done to make that process result in competent structures for democratic decision making. Having a strong central commission, tied by appointment to formal institutions of legitimate democratic power in the Parliament is an adept way to achieve accountability and responsible guidance. How equity is to be achieved across all municipalities in Spain, remains a critical challenge. But if the organisations centrally responsible continue to be devoted to learning, experimenting, and committed to a constructive collaborative relationship, they stand a very good chance of innovating a successful solution.

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Appendix 1

DETAILED PROGRAMME

21 November 2005

Day 1

BACKGROUND INFORMATION ON SPAIN

Opening – Welcoming

By: T. Tanaka, NEA Deputy Director for Safety and Regulation
FSC Chair or Vice-Chair
J. Castellnou, Mayor of Vandellòs

THE SPANISH NUCLEAR AND INSTITUTIONAL SCENE: ROLES AND RESPONSABILITIES

Chair: T. Tanaka, NEA Deputy Director

- **Nuclear Spain: description of facilities in Spain to generate electricity and store waste**
C. Villota, Director of Nuclear Energy (UNESA)
- **Legislation and institutional framework** – Nuclear and environmental regulations to approve sites, construct and operate all kind of facilities (through decommissioning and final waste disposal) and the role of actors. Note decision making in Spain is determined also by regional Parliaments
N. Prieto, Legal Advisor (ENRESA)
- **The Spanish general radioactive waste management plan.**
With emphasis on centralised HLW and SF storage facilities.
JM. Redondo, Assistant to the Deputy Director for Nuclear Energy (Ministry of Industry, Trade and Tourism)
- **The role of the nuclear safety regulator**
I. Mellado, Technical Director of Nuclear Safety (CSN)
- **The role of the Parliament**
R. Velasco, Parliamentarian, Member of the Industry, Trade and Tourist Commission

PAST EXAMPLES OF CASES AND ACTORS, AND THE EMERGENCE OF STAKEHOLDER INVOLVEMENT FOR DECISION MAKING IN SPAIN

Chair: C Ruíz López, Head of the HLW Department (CSN), and FSC member

Case 1. The Senate Working Party on HLW management in Spain

- **Historical perspective**
J. Lang-Lenton, Corporate Director (ENRESA), and FSC member
- **The views expressed by stakeholders**
A. Rovira, Professor of the Universidad Autónoma de Madrid

Case 2. The dismantling of the Vandellòs-I nuclear power plant

- **General presentation**
J. Lang-Lenton, Corporate Director (ENRESA)
- **Stakeholder voices on the dismantling of Vandellòs-I**
 - Representative of municipality
J. Castellnou, Mayor of Vandellòs
 - Representative of the nuclear safety council
J.L Revilla, Dismantling Project Head (CSN)
 - Representative of Local Committee
C.Barceló, President of the Industrial Union of Hospitalet
 - Representative of media
F. Domènech, Chair of the Tarragona Media Association
 - University, F.Castells
Professor of the Universidad Rovira Virgili (Tarragona)

Plenary discussion of the two cases

Chair: E. Gray, Scottish Executive and FSC member

CASE 3: A SPANISH RELEVANT ACTOR: THE ROLE, VIEWS AND ORIGINALITY OF AMAC, THE ASSOCIATION OF SPANISH NUCLEAR MUNICIPALITIES

A. García, Universidad Autónoma de Barcelona

MUNICIPAL VISIT

A visit to the “Vivero de empresas” (“Nursery of entrepreneurs”) that is a municipal project for helping new entrepreneurs. After an explanation by the local authorities on how does it work we will visit a new brand enterprise of the electronic sector and after that a new tourist initiative. A visit the site of Vandellòs with some explanations from ENRESA on the decommissioning of the nuclear plant will complete the evening. The whole of the visit will take 2 hours to 2 hours and a half.

22 November 2005

Day 2

MAIN WORKSHOP

The “COWAM-Spain” initiative and the current project under consideration for a national interim storage facility for spent fuel and high level waste.

SESSION 1: OPENING

Chair: G. Arens, (BfS, Germany, and FSC member)

- **Introduction to the Workshop**
C. Pescatore (NEA)
- **Report from the previous day**
A. Vári (Hungarian Academy of Sciences)
- **The “Cowam-Spain” project: its three components**
M. Vila de Abadal (AMAC)

SESSION 2: INVOLVING THE LOCAL LEVEL

Chair: E. Hoof (ONDRAF, Belgium, and FSC member)

- **General presentation of Cowam-Spain project and results**
Speaker: Mercé Chiapella (Universidad Rovira y Virgili, Tarragona)
 - What is the local level?
 - Who are the local stakeholders?
 - Which are prerequisites (political, technical, etc) for involving the local level?
 - How is local consultation and involvement to be started?
 - How is the local level assured of safety and participation? (Competence blg, etc.)
 - COWAM-Spain proposals and challenges
- **Roundtable discussion based on the following set of questions**
Moderator: K. Shaver (NWMO, Canada, and FSC member)
 - What is the appropriate role for scientific experts (who would address issues such as need for the facility and safety) in a dialogue with the local population?
 - What can the leading governmental agencies do to demonstrate and follow through with commitment to a genuine stakeholder involvement process?
 - Would you agree that safety is everyone's concern and it will come naturally from a healthy democratic discussion?
 - How to create multiple opportunities for people to be engaged in the process in ways that suit their needs and constraints?

SESSION 3: THE INTERPLAY BETWEEN THE NATIONAL AND LOCAL LEVELS

Chair: P. Ormai (Puram, Hungary, and FSC member)

- **General presentation of Cowam Spain project and results**
Speaker: M. Ferrús (Cowam Spain)
 - Prerequisites (e.g., local actors?)
 - Mechanisms for identifying potential sites
 - Institutional guarantees and follow-on (who drives the process? Who guarantees its fair application? Who appoints the relevant actors? Who is represented?)
 - Decision making steps?
 - Cowam-Spain proposals and challenges
- **Round table discussion around the following issue and sub-questions**
Moderator: J. Kotra (US Nuclear Regulatory Commission, and FSC member)

Does the present kind of problem (shutting down facilities, constructing new facilities for RW) pose particular or unusual challenges to coordination across governmental regimes in Spain? If so, what resources are available for managing those challenges and achieving successful coordination across regimes? What resources are still needed? Related sub-questions are as follows:

 - Are there clear definitions of roles for the national and local level? Namely: What is the recent trend in terms of local vs. national policy making authority and direction? What are the juridical responsibilities of local communities and state or federal agencies?
 - How to balance national imperatives with local views? Who should lead, local or national?

- Is there any national framework for supporting the local level (host communities and/or neighbouring communities), from economical viewpoints and others?

23 November

Day 3

SESSION 4: LONG-TERM SUSTAINABILITY OF DECISIONS

Chair: T. Seppälä (Posiva, Finland, and FSC member)

- **General presentation of COWAM-Spain project and results**

Speaker: M. Martell (Enviros, Spain)

- How is the local level assured of continued participation in decision making?
- Preserving interest: Economic? Local development?
- Giving additional value: educational; multifunctional centre
- Preserving national know-how?
- Legal mechanisms to ensure funds are available as and when needed
- Legal mechanisms for technical follow-up
- Cowam-Spain proposals and challenges

- **Roundtable discussion based on the following questions**

Moderator: M. Fritschi (NAGRA, Switzerland, and FSC member)

- The transportation activities are likely to be an ongoing issue over several years. There is a potential for public individuals to hinder the transport of this cargo by various means. How do you lower the probability of such an event, and should it occur, how do you manage the situation taking into public confidence in general? What sort of social institution needs to be set up to manage discontent and ensure safety?
- The host community for the central storage can be seen as providing a “service to the nation”. Beyond the responsibilities of the operator (Polluter Pays Principle), should the national government provide compensation for this service (User Pays Principle)? How will such an idea be received by the different stakeholders in Spain? Is there a precedent for such compensation? How is it negotiated?

SESSION 5: THEMATIC REPORTS

Chair: W. Hilden (DG-TREN, European Commission and FSC member)

- Y. Le Bars from his point of view as former chair of the FSC and expert in policy making on topics involving research and the public
- T. Webler from his perspective as a researcher in the area of stakeholder involvement in environmental and risk decision making
- Discussion

SESSIONS 6: CLOSURE

FSC Chair or Vice-chair

NEA Secretariat, C. Pescatore (Principal Administrator)

Spanish Hosts

Adjourn.

Appendix 2

LIST OF PARTICIPANTS

Belgium

HOOFT, Evelyne	ONDRAF/NIRAS
VAN HOVE, Erik	Professor (retired), University of Antwerp
VAN STEENBERGE, Annelies	Professor, University of Antwerp

Canada

LÉTOURNEAU, Carmel	Natural Resources Canada
SHAVER, Kathryn	NWMO

Czech Republic

STEINEROVÁ, Lucie	RAWRA
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Finland

SEPPÄLÄ, Timo	Posiva Oy
---------------	-----------

France

OUZOUNIAN, Gérald	ANDRA
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Germany

ARENS, Georg	Bundesamt für Strahlenschutz
BIURRUN, Enrique	DBE Technology GmbH

Hungary

ORMAI, Péter	PURAM
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Italy

TACCARELLO, Daniel	ENEA
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Japan

EMORI, Minoru	Institute of Applied Energy
INATSUGU, Shigefumi	NUMO
TAKEUCHI, Mitsuo	NUMO

Spain

BARCELÓ, Carlos	President, Industrial Union of Hospitalet
CASTELLNOU BARCELÓ, Josep	Mayor, Hospitalet de L'Infant
CASTELLS, Francesc	Universitat Rovira I Virgili
CERA, Esther	Enviro
CHIAPELLA, Mercès	Universitat Rovira I Virgili
DOMÈNECH, Francesc	Chair of Tarragona Media
FERRÚS I SERRA, Miquel	GMF
GARCÍA, Anna	Professor, Universitat Autònoma de Barcelona
GARCÍA FRESNEDA, Enrique	CSN
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PLA, Enric	Vandelòs-2, Hospitalet de L'Infant
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REDONDO GARCÍA, José Manuel	Ministry of Economy
REVILLA GONZALEZ, Jose Luis	CSN
RODRÍGUEZ, Alejandro	ENRESA
RODRÍGUEZ, Manuel	ENRESA
ROVIRA, Antonio	Professor, Universitat Autònoma de Madrid
RUÍZ LÓPEZ, Carmen	CSN
VELASCO, Rosário García	Industry, Trade and Tourist Commission
VILA D'ABADAL, Mariano	AMAC
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Sweden

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PENSJÖ, Asa	SSI

Switzerland

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FRITSCHI, Markus	NAGRA

United Kingdom

CHANDLER, Steve	UK Environment Agency
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GRAY, Elizabeth	Scottish Executive

United States

KOTRA, Janet P.	NRC
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MASET, Elvira

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International Organisations

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Radioactive Waste Management in Spain: Co-ordination and Projects

The sixth workshop of the OECD/NEA Forum on Stakeholder Confidence (FSC) was hosted by ENRESA, the Spanish agency responsible for the management of radioactive waste and the dismantling of nuclear power plants, and the Council of Nuclear Safety (CSN), with the support of the Association of Spanish Municipalities in Areas Surrounding Nuclear Power Plants (AMAC). The workshop took place at L'Hospitalet de l'Infant, Catalonia, Spain, on 21-23 November 2005.

At this workshop, Spanish stakeholders and delegates from 14 countries discussed current co-ordination of radioactive waste management decision making in Spain. Findings were shared from Cowam-Spain, a co-operative research project on the involvement of local stakeholders, the relationship between national and local levels of decision making, and the long-term sustainability of decisions regarding the siting of a centralised interim storage facility for high-level waste. These proceedings include the workshop presentations and discussions, as well as the rapporteurs' reflections on what was learned about policy making and participative decision making.

