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NUCLEAR ENERGY AGENCY
RADIOACTIVE WASTE MANAGEMENT COMMITTEE

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Forum on Stakeholder Confidence (FSC)

2nd FSC WORKSHOP - EXECUTIVE SUMMARY AND INTERNATIONAL PERSPECTIVE

Stakeholder Involvement and Confidence in the Process of Decision-making for the Disposal of Spent Nuclear Fuel in Finland

15-16 November 2001
Turku, Finland

The 2nd FSC workshop was held in Turku, 15-16 November 2001, and examined "Stakeholder Involvement and Confidence in the Process of Decision-making for the Disposal of Spent Nuclear Fuel in Finland". By gathering Finnish Stakeholders, those who expressed favour and opposition, as well as observer-participants from the other NEA/FSC countries, a joint reflection on a complex reality was achieved from which general conclusions can also be drawn concerning stakeholder involvement in the long-term management of radioactive waste.

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EXECUTIVE SUMMARY

BACKGROUND

On 18 May 2001, the Finnish Parliament ratified the Decision in Principle on the final disposal facility for spent nuclear fuel at Olkiluoto, within the municipality of Eurajoki. The Municipal Council and the Government had made positive decisions earlier, at the end of 2000, and in compliance with the Nuclear Energy Act, the Parliament's ratification was then required. The decision is valid for the spent fuel generated by the existing Finnish nuclear power plants and means that the construction of the final disposal facility is considered to be in line with the overall good of society. Earlier steps included, amongst others, the approval of the technical project by the Safety Authority. Future steps include construction of an underground rock characterisation facility, ONKALO (2003-2004), and application for separate construction and operating licences for the final disposal facility (from about 2010).

How did this political and societal decision come about? The FSC Workshop provided the opportunity to present the history leading up to the Decision in Principle (DiP), and to examine future perspectives with an emphasis on Stakeholder involvement. Finnish stakeholders included representatives of the nuclear electric utility (TVO), the company responsible for siting, constructing, and operating the facility (Posiva Oy), national, regional, and local authorities - the Radiation and Nuclear Safety Authority, the Ministry of Trade and Industry, the Ministry of Environment, the Regional Environment Centre, municipal government (Eurajoki) -, researchers from the universities and the national technology research centre (VTT), the Parliament, and local opposition movements (Lovisa movement, Kivetty movement). Foreign participants included the members of the NEA group "Forum on Stakeholder Confidence" (FSC) or their representatives and nominees. The FSC is composed of nominees from NEA Member countries with responsibility, overview, and/or experience in the field of stakeholder interaction and confidence. The FSC members may or may not belong to a governmental institution. In the main, however, they represent the viewpoint and experience of national safety authorities, implementing agencies, R&D organisations, and policy-making institutions.

The Workshop helped provide a review of the Finnish programme, by and for the FSC, and by and for the Finnish Stakeholders, and will help the FSC learn from the experiences. By gathering Finnish Stakeholders, those who expressed favour and opposition, as well as observer-participants from the other FSC countries, and by implementing a highly interactive format, a joint reflection on a complex reality was achieved from which wider conclusions can also be drawn concerning stakeholder involvement in the long-term management of radioactive waste.

Posiva Oy, VTT Energy, the Finnish Radiation and Nuclear safety Authority (STUK), and the Ministry of Trade and Industry (Energy Department), who responded to an invitation by the NEA, were the local organisers and workshop co-hosts.

The day before the workshop the FSC participants had the possibility to meet with the Eurajoki City Council, whose openness and hospitality was greatly appreciated. A presentation was given by members of the City Council on the community itself - its political structure, economy, social composition, relation to nearby communities - and the history of its involvement in the decision-making regarding the hosting of the deep repository. Question and answers were exchanged with the FSC members. The latter could also visit, in the same municipality, 1. the Olkiluoto nuclear power plant, where they learned about the TVO company history and plans ; 2. the VLL repository for short-lived low and intermediate waste; and 3. the investigation area for the ONKALO facility and potential site of the deep repository.

This Executive Summary gives an overview of the presentations and discussions that took place at the workshop. It presents, for the most part, a factual account of the individual presentations and of the discussions that took place. It relies importantly on the notes that were taken at the meeting. Most materials are elaborated upon in a fuller way in the texts that the various speakers and session moderators contributed for these proceedings. 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 a NEA Secretariat's perspective aiming to place the results of all discussions, feedback and site visit into an international perspective.

INTRODUCTION TO THE WORKSHOP

Carol Kessler, Deputy Director General of the OECD Nuclear Energy Agency (NEA), welcomed the participants of the second FSC workshop. Ms. Kessler emphasized the importance of collaboration between the technical community and civil society in implementing technologies, which have apparent negative aspects, such as nuclear energy. She pointed out that the OECD has recently been engaged in supporting such collaboration. Important steps in this development included the 1999 and the 2000 Ministerial Council meetings, when the Ministers recognised the responsibility to ensure transparency and clarity in policy making and asked the OECD to assist governments in collaborating with civil society organisations (CSOs). In 2000, the OECD established its Forum 2000 to seek CSO input to the Ministerial Agenda and held one again in 2001. The Public Management Service (PUMA) of OECD has been established to assist governments in collaborating with civil society.

Ms. Kessler reviewed NEA activities in this field, including a recent workshop held by the Committee on Radiation Protection and Public Health on "Better Integration of Radiation Protection in Modern Society", and a workshop organised by the Committee on Nuclear Regulatory Activities entitled "Investing in Trust – Nuclear Regulators and the Public". She noted that OECD guidance in this field should remain limited, since so much of the government/civil society dialogue is nation specific. On the other hand, Ms. Kessler acknowledged the importance of exchanging ideas in this field and of the role of NEA in assisting governments to learn from each other. The Turku workshop is an excellent opportunity for discussing what aspects of the Finnish process may be unique for Finland and what may be more generally applicable.

Yves Le Bars, Chairman of the FSC, summarised the objectives and the organisation of the workshop. By gathering key Finnish stakeholders and observers/participants from the FSC community, the workshop provides a review of the Finnish process by and for both groups.

The workshop was planned to focus on three issues including *the stepwise decision-making process, stakeholder involvement, and confidence building*. Mr. Le Bars introduced the highly interactive format, which was chosen for the meeting. Presentations by *plenary speakers* were to be followed by (1) roundtable discussions facilitated by *facilitators*, (2) plenary sessions reviewing the results of these discussions, directed by *session moderators*, and (3) cross-cutting overview reports by *thematic rapporteurs* compiled on the basis of their observations at the workshop.

SESSION I

BACKGROUND TO THE DECISION IN PRINCIPLE

Ilkka Ruostetsaari from the University of Tampere spoke of the possible reasons for the apparent contradiction between the Parliament consensus on the construction of the repository and the ongoing debate on the future of nuclear power in Finland. He identified two kinds of explanation, the first one residing in the characteristics of Finnish political culture, and the second in some contextual factors.

Characteristics of Finnish political culture, which he found significant, include the Nordic concept of autonomy, the Lutheran religion, capitalism, nationalism, and the power of the ruler and the bureaucracy. There is “consensual” rather than “adversarial” policy-making, so much so that parties that win elections do not necessarily get to govern. Main contextual factors which facilitated agreement include the legal framework, the political situation, the actors’ adaptability, the competition between two municipalities for hosting the facility, the weakness of opposition movements, the non-partisan role of the media, and the fact that the debate on the waste disposal issue was de-linked from the political debate on nuclear power. Finally, Finns display great trust in technology and education, and the respect for institutions and the government is very high.

Jussi Manninen from the Ministry of Trade and Industry briefly presented the history of nuclear energy production and waste management in Finland. He listed a series of changes in the legislative framework, which led to the current Parliament ratification of the facility DiP. Of special importance was the 1983 government decision strategic DiP, which excluded storage as a long-term method for waste management and required that a site for final repository be selected by the year 2000. Another important step was the 1987 Nuclear Energy Act, which defined the responsibilities of various actors in nuclear waste management, and the 1994 amendment of this Act prohibiting both the export and the import of nuclear waste.

In addition, Mr. Manninen indicated several problems concerning the legal background. For example, some provisions of the 1994 Act on Environmental Impact Assessment interfere with the Nuclear Energy Act.

Jukka Laaksonen from STUK indicated that the regulator has played an important role in Finland since the very beginning of the nuclear era. He acknowledged the multidimensional challenges faced in order to reach the DiP: safety issues, societal issues, and the timing and scheduling of the decision-making process. He pointed out that in the facility DiP stage, no definite conclusion on the safety of the proposed disposal concept was required. Only a preliminary safety appraisal was needed, stating that nothing had been found which would raise doubts about the potential to achieve the required safety level.

The facility DiP means that the disposal site has been chosen, and there is a firm commitment by a municipality to host the facility. It also means that safety studies can be continued at the site. According to Mr. Laaksonen, at least ten more years will be needed to receive sufficient assurance on safety, so that a construction permit for the repository can be issued.

SESSION II

PROCESS OF STEPWISE DECISION-MAKING IN FINLAND

Veijo Ryhanen from Posiva Oy reviewed the obligations of the operator in having to take both technical and social steps and gave a summary of the past and future milestones, and the key activities of the siting process. The obligation to take social steps come from the fact that the DiP decision is stipulated on “the overall good of society” and that the local community has veto power. The Environmental Impact Assessment (EIA) process was especially useful for reaching out to the public and learning from it. The discussion of non-implementation of a solution (the zero alternative) versus implementing a solution was essential for a shared understanding of the necessity to move forward. He suggested that one item that contributed to the confidence underlying the DiP is the fact that both at Olkiluoto and Lovisa disposal facilities for LLW and ILW and interim storage facilities for spent fuel are operational with an excellent record. He emphasized the importance of having a stepwise process relying on a clear legal background and a long-term commitment from the part of the government.

Tero Varjoranta from STUK outlined the risk communication programme conducted by STUK in potential host communities. The regulator’s public information programme addressing the concerns, expectations, and information needs of local residents proved to be successful. This also raised the profile of STUK. People wanted STUK to have a referee role and to be on the side of the municipality in what regards health concerns. Indeed, STUK has implemented an internal mandate of providing “the best information available” to the public and will go the municipality when asked. STUK also tries to assist local media, which may lack adequate resources for researching articles. Mr. Varjoranta commented that it is not obvious that the methods that are effective in Finland could be readily transferable to other countries.

Kimmo Tuikka, representative of the Kivetty movement, spoke of the protest movement that emerged in the town of Äänekoski when a candidate site was identified in its Kivetty area. In particular, Äänekoski area had long suffered of an image problem in Finland and the disposal facility would have re-opened an issue that is now solved. Safety of the transport of the waste to Äänekoski was questioned, the lack of infrastructure was an issue as well and, overall, the movement came to the conclusion that that there would be no net benefit to the community from hosting a disposal facility of spent fuel. The Kivetty movement entered in the political arena and was able to have a new city council elected that was more sceptical than the previous one about hosting the disposal facility. Mr. Tuikka recognised the wealth of information that was provided during the EIA process, but expressed doubts about the independence of the EIA study from the influence of Posiva Oy. He also commented on the fact that the regulator was not so visible as it now is, which is a positive development. He questioned the separation of the nuclear waste management issue from that of the future of nuclear power and whether Finland may end up receiving waste from other EU countries.

Altti Lucander, member of Eurajoki Municipality Council, analysed the facility siting process from a local perspective. He indicated that key roles in the acceptance of the facility by the residents of Eurajoki were: the expected economic and social benefits, moral responsibility for the management of waste, confidence in TVO which runs the Olkiluoto NPP in the Eurajoki municipality,

and a high level of trust in the safety authorities. He observed that the process envisaged by the State to come to a decision was easy to work with, and that the responsibility for acceptance of a facility lies foremost with the community who must rely on the regulator as their specialist advisor.

The roundtable discussions (session moderator: **Michael Aebersold**) resulted in the following main conclusions:

1. What were the most important steps in the decision-making process for the different stakeholders?

- The 1983 Government decision specifying the milestones for final disposal
- The 1994 Government decision banning the export and import of nuclear waste
- The Environmental Impact Assessment (EIA) process
- Safety review by the regulatory body (STUK) and Government Decision in Principle (DiP) of 2000
- Approval of the DiP by the Parliament in 2001

2. What influenced the process and the outcome?

- The institutional framework (DiP, EIA and STUK), the step-by-step decision process, the simple organisational structure, the political decision to prohibit the export of fuel and the early introduction of the concept of geological disposal
- Broad political consensus, on a national and regional level, regarding the site of the disposal facility. High level of public confidence in the host community, and competition among potential host communities
- Participation of stakeholders and transparency of the process

3. What are the lessons learnt?

- It is important to recognise that a problem exists, which needs to be solved and can be solved
- Confidence and trust in the regulatory body and the implementers is crucial
- The municipality is a major stakeholder, and its veto right is a very important element
- Differences between risk perception by experts and lay people have to be understood and public concerns need to be taken into account
- The following elements were key factors of success:
 - * DiP as part of a stepwise procedure and as principal decision for implementation
 - * EIA as a structure and guide for public involvement and participation
 - * STUK as a regulatory body which creates confidence

SESSION III

STAKEHOLDER INVOLVEMENT, PARTICULARLY IN THE ENVIRONMENTAL IMPACT ASSESSMENT

Anne Väättäinen from the Ministry of Trade and Industry addressed the role of the Ministry in the public participation process. Two public hearings were organized by the Ministry in connection with the EIA process (prescribed by the EIA Act) and the Government DiP (specified by the Nuclear Energy Act), respectively. Although she evaluated the hearings as successful events of public participation, she also indicated some deficiencies, which she attributed to the lack of harmonisation between the EIA Act and the Nuclear Energy Act. The EIA process highlighted the need to discuss alternatives and their impacts and, in particular, the “zero option”.

Pekka Hokkanen from the Tampere University acknowledged the relevance of the EIA as a most important instrument for supporting a political decision in this case and noted that the EIA legislation underscores public involvement. He described participation as negligible, however, and decreasing throughout the process. He attributed the low level of participation to the lack of such participatory traditions, the lack of familiarity with this instrument, the lack of confidence in the effectiveness of participation, the tiredness and exhaustion of some stakeholders, and the uneven distribution of the resources amongst stakeholders.

Jorma Jantunen from Uusimaa Regional Environmental Centre addressed the role of Finnish environmental authorities in the EIA process. The regional authority focusing on local environmental impacts was largely satisfied with the EIA, in particular with the information it provided. The Ministry for Environment, which overviews that the legal requirements are met, was satisfied with the level of participation but was more critical about a number of items (e.g., Posiva’s advertising campaign). The Finnish Environment Institute raised concerns about the “goal-directedness” of the process: it observed that while the scope of the EIA was local, it had national dimensions and wider participation than just local was appropriate. They would also have wished to see more information on alternatives. The EIA process took into account also international conventions. Namely, the neighbouring countries were informed, were able to provide comments, and a positive statement was obtained from their part.

Juhani Vira of Posiva Oy indicated that the EIA was an important initiative for stakeholder involvement and of information for the DiP. He reviewed the many stakeholder voices that took part in the EIA process, recalled that the final report was issued in 3 languages, and that all views were recorded including the dissenting ones. The number of participants may have been limited, vis-à-vis expectations, but the quality of the debate was high. On specific points, the following was learnt: people questioned whether experts can claim knowledge in long-term safety. The evocation of the image of the community may be also a “cover” for something that people are uneasy with; the discussion of alternatives is very important for the political decision that will follow; retrievability arose as an issue and firmed up as a positive feature if provisions for retrievability are implemented. Indeed, one important result of the process was the government decision that requires that the spent fuel must be retrievable even after closing the disposal facility. An area of concern was that of social

impacts within the community, which was addressed through a comprehensive social impact assessment study.

Thomas Rosenberg, representative of the Lovisa movement, strongly criticized the EIA process, which he evaluated as a “long, frustrating, co-optative, and scientifically camouflaged” and serving only for legitimising the decisions. The movement did get radio coverage, and succeeded in changing the agenda of the discussions (e.g., put the alternative method of Dry Rock Deposition on the agenda), raising local awareness about nuclear issues, and preventing the siting in Lovisa. The movement was against disposal, preferring long-term surface storage at Lovisa rather than an underground repository at Eurajoki. The division in the community was exacerbated by current issues in cultural demarcation amongst Finnish and Swedish speakers.

Antti Leskinen from Discursi Oy emphasised the importance of the scoping phase of the EIA in structuring the investigations according to the needs of the local public. Whilst the EIA processes in Finland do not have necessarily a scoping phase, this one did. He considered this EIA a process of “good quality” vis-à-vis other EIAs in Finland. He acknowledged that the effectiveness of this EIA as a framework for public participation was questioned by several stakeholders in that participation was relatively low. On the other hand, even opponents found that sufficient information was made available, and when people do not come to public meetings it is not necessarily justified to think that they are against.

As a result of *roundtable discussions* (session moderator: **Hideki Sakuma**), the following main conclusions were drawn:

1. Was the stakeholder involvement process sufficient?

- A majority of workshop participants shared the view that the EIA process provided sufficient opportunities for stakeholder participation. The leader of a local protest movement, however, claimed that chances provided for various stakeholders to participate and influence decisions were far from equal.
- The participation of STUK was especially acknowledged by a majority of participants.

2. Did you receive all the information you needed for your involvement?

- A majority of the Finnish participants found that sufficient information was available. Some claimed that there was too much information.
- Some claimed that information provided about alternative waste management methods was insufficient.
- It was mentioned that due to the lack of resources, opponents could not hire independent experts.

3. What are the lessons learnt?

- It is important that the role of EIA in the siting process, as well as the role of stakeholder involvement in the EIA process be clear from the beginning.
- Stakeholders should be allowed to participate from the very early stages of the siting process.
- Public interest in participation can be maintained only if stakeholders believe that they can have an influence on key decisions.

- Continued dialogue between the implementers and local people is crucial.

4. *How could your involvement be improved in the future?*

- The complexity of EIA should be simplified, public participation should be made easier.
- More attention should be paid to informing people.
- More attention should be paid to listening to people and responding to their concerns.
- Resources should be provided for less powerful stakeholders to assure that they have fair chances for effective participation.

SESSION IV

WHAT GIVES CONFIDENCE TO THE VARIOUS CATEGORIES OF STAKEHOLDERS?

Janina Andersson from the Green Parliamentary Group acknowledged the open seminars where everybody had the possibility to talk. Indeed NGO's had the chance to express themselves also in Parliament and, overall, the openness of Posiva is commendable. The "commercial" attitude of Posiva in their campaign was less appreciated though. A large component of the positive decision by Parliament was that the problem cannot be passed on to others, and it has to be dealt with within the national borders while the know-how is available. In particular, the Green party voted in favour of the DiP also on the consideration that it felt it had an obligation to find a national solution to a problem that was accentuated when it voted, in 1994, for not exporting out of the country any wastes produced in Finland, including spent fuel. The DiP preserves the good of the community right now, it may be up to the community to re-decide 100 years from now. She observed that the process is not over yet, and it is important not to speed it up needlessly. Some questions mentioned are: the optimal depth of the repository, salinity and temperature effects at depth, and the properties of the bentonitic materials on which performance seems to rely importantly. The parliament will want to consider all the facts before making a final decision on constructing a repository.

Altti Lucander, member of Eurajoki Municipality Council, pointed out that the high level of confidence existing at Eurajoki can be attributed to: (1) the excellent safety record of the nuclear power plant of Olkiluoto; (2) the openness of both the implementer and the regulator responsible for spent fuel management, in particular the information given is of good quality, transparent, and is provided quickly to the community; (3) many meetings on topical issues, including those facilitated by the EIA as a platform for dialogue; (4) the fact that a number of inhabitants of Eurajoki work at the NPP; (5) the existence of local liaison groups facilitating the dialogue between the municipality and TVO. In the past the Community had voted for the principle of not accepting disposal of nuclear waste in its territory. The community turned around after both the export and import of spent fuel were prohibited by law in 1994. Other milestones important for the community positive decision were a study on the economical competitiveness of the municipality (1997), and a 1998 analysis known as the "Olkiluoto vision". Eurajoki has also been careful to maintain dialogue with neighbouring communities.

Tapio Litmanen from the University of Jyväskylä analysed the role of social science for the national waste management programme. Social science was integrated in the decision-making process in the mid-90's. Two forces acted in that direction: the veto power given to the community by the Nuclear Energy Act and the preparation of the EIA process. A number of studies were performed with public funding that helped identify questions for the EIA to address, how to implement and how to evaluate the EIA, etc. At present, a project is ongoing at the University of Tampere to evaluate what lessons are to be learnt on, and from, the EIA process. He argued that applied social science research, as well as theoretical research could be very helpful to improve understanding the nature and roots of controversies, and finding ways to increase mutual trust.

The paper by **Seppo Vuori** and **Kari Rasilainen** from VTT Energy gave an introduction on the Public Sector's Nuclear Waste Management Research Program aimed at investigating both technical and social science issues related to the spent fuel management. The research program, which was independent of Posiva's own research, has been underway since 1989 and has supported the activities of the authorities. The technical programme has increased confidence in numerous technical areas, including illustrations of radiological impacts and of alternative management routes in Finland. From their R&D perspective, the authors identified 5 points that were instrumental for the positive outcome of the DiP: 1. Clear legislative requirements; 2. Veto power of the community; 3. Public involvement through the EIA; 4. Independent review by the regulator; 5. The decisive role of Parliament.

Main conclusions emerging from the *roundtable discussions* (session moderator: **Simon Webster**) are as follows:

1. What was important for developing confidence? How would you rank the various measures?

- In general, the fairness and transparency of the decision-making process were emphasized as key factors of trust and acceptance.
- For the municipality, the right of veto, the clear government strategy, and public participation as defined by EIA were most significant.
- Some participants considered institutional measures as most important, followed by the social and technical measures.
- Some emphasised the importance of maintaining the dialogue between various stakeholders throughout the whole duration of the project.

2. What were positive and negative experiences for gaining confidence and trust?

- For positive experiences, see above
- Some parties (e.g., Ministry of Trade and Industry, research organisations) were criticised for not being neutral or sufficiently competent.
- Some tools (e.g., Posiva's information campaign, public surveys) were criticised as unfair or inappropriate.
- Concerns were expressed over the past changes of policy regarding the export of waste, the lack of control by the Parliament after approving following the DiP, and Finland's being the first country to establish a repository.

3. What are the lessons learnt? What should be done to improve confidence and trust?

- Openness, honesty, early and continuous participation of a variety of stakeholders are key factors.
- Adopting a step-wise approach with public outreach increases the chances of success.
- The process is not over yet, the dialogue needs to be continued.
- The lessons learnt from the Finnish process are only partially transferable to other countries.

SESSION V

CONCLUSIONS, ASSESSMENT, AND FEEDBACK

In this session, *reports from four thematic rapporteurs* observing the workshop were presented.

Frédéric Boudier from OECD/PUMA analysed the public governance aspects of the Finnish case. He found the adaptability of the siting process, especially the progressive normalisation of stakeholder involvement, of high significance. Another key feature he identified, was the combination of municipality vote with a final decision by the National Parliament.

Mr. Boudier suggested that stakeholder involvement be carefully planned and the following questions be given serious consideration: Who is involved at what stage? Who monitors the agenda? What tools are used to inform/consult/participate? How are messages translated? What feedback is given? How open and transparent is the process? Finally, based on the findings of the workshop and previous research studies, Mr. Boudier suggested that stakeholder involvement in the nuclear field meet a set of - cross-culturally relevant - criteria (see Outlook Remarks).

The report by **Claire Mays** from Symlog took a social-psychology perspective. The central concept she chose for her analysis was the contrast between “in-groups” and “out-groups”, i.e., those who have a dominant position in defining a situation and those who are in a position of exclusion. By analysing the jokes offered, the inadvertent mistakes made, and the vocabulary used by workshop participants, she illustrated the difficulty to reach and include in social dialogues individuals from out-groups (e.g., members of opposition movements, “ordinary people”), and the tendency for patronising them.

By reacting to certain deficiencies of public participation in the Finnish case, Ms. Mays suggested that other modes of expression, besides written contributions be applied, in which stakeholders could have confidence that they would affect decision-making. She emphasised that in order to increase participation, the expression of unsystematic knowledge, beliefs, values, preferences, and feelings should also be encouraged.

Finally, Ms. Mays pointed out that although at the workshop the uniqueness of Finnish culture was frequently mentioned as a key factor of successful siting, the relative influence of culture and other features of individual, organisational, political, social, historical contexts could not be determined on the basis of available data.

Anna Vári from the Hungarian Academy of Sciences presented her observations about community development and siting issues. According to her analysis, for the majority of Eurajoki residents, the balance of anticipated positive and negative impacts of the planned facility was positive, and this was a crucial factor contributing to local acceptance.

The way of sharing the benefits and burdens of nuclear power production raises general questions about fairness¹. Ms. Vari pointed out that there is no single morally correct way for allocating benefits and burdens between stakeholders, and the history of nuclear waste management policy in Finland reveals the plurality and the changeable character of the socially accepted principles of fairness.

Finally, Ms. Vari analysed the Finnish case in terms of a set of success criteria, derived from previous research studies on radioactive waste management. By finding that the Finnish process met the majority of these criteria, she concluded that there are a number of important siting elements which are of cross-cultural character.

Tom Isaacs from LLNL investigated the Finnish case from the perspective of strategic decision-making. He emphasised that in addition to a well-organised program of public participation, the following elements seem to have contributed to building public confidence: (perceived) competence of the implementers and regulators, (perceived) good intentions on the part of key decision-makers, and their willingness to change programme components to meet public demands.

Mr. Isaacs demonstrated the stepwise nature of the disposal facility development and showed that this development was not fully linear (e.g., an earlier municipal decision had rejected the concept of disposal). He also pointed out that although there has not been any provision for compensation for the host community, implementers worked out a win/win arrangement with the latter. Finally, he concluded that there appear to be certain elements that might be common to successful siting processes.

FEEDBACK FROM WORKSHOP PARTICIPANTS

The FSC workshop has proven useful to all participants.

It was good for the Finnish participants in that it offered the first ever experience where all stakeholders were discussing with one another under the same roof and it allowed an overall, joint look at the DiP process that could help identify, at least for some, what could be corrected and/or improved for the future.

The FSC participants found that the planned series of workshops in specific decision-making context is indeed a fruitful idea. The present arrangements whereby all participants are made to interact with one another and express themselves are constructive and need to be retained in the future. The definition, ahead of time, of issues to be discussed is also very helpful. The Eurajoki visit was found to be very necessary in order to understand the community position, as well as to grasp its natural environment. Appreciation was voiced for the presence of Parliamentarians and of the opponents, which gave a further insight of the difficulties that the system had to face. A voice was heard, however, that there did not seem to be enough outsiders and that, perhaps, the FSC still got a too rosy picture.

1 This concept of fairness is associated with the outcome of decision ("outcome fairness") and should be distinguished from the fairness of the decision-making process ("process fairness").

It was reiterated that this workshop was not meant to evaluate the Finnish programme, but rather to help others to take advantage of the experience matured so far. An outline of the Nordic model of waste management was sketched, characterised by:

- the absence of military waste
- strong involvement of the industry
- strong local communities having veto power
- a relatively stable and homogeneous geology for repository siting
- a regulator on the side of the local community
- accepted responsibility for the country's own waste
- de-coupling disposal considerations of the accumulating waste due to earlier decisions from considerations of the future development of nuclear power in own country.

Overall the Finnish colleagues and hosts were praised for their openness and hospitality.

AN INTERNATIONAL PERSPECTIVE ON THE WORKSHOP'S RESULTS

(Note by C. Pescatore, NEA Secretariat)

The majority of workshop participants considered the Finnish facility DiP both supportable (on the level of the host community), and legitimate (on the national level). Interestingly, several Finnish stakeholders emphasised that support for, and legitimacy of, the decisions can to a large extent be attributed to some unique features of Finnish political culture. Other participants, however, primarily the four thematic rapporteurs, expressed the view that although the Finnish decision making culture may have played an important role, a number of siting elements of broader cross-cultural significance emerged from the discussions. Overall, by combining the indications from the roundtable discussions with those of the thematic rapporteurs and of the Finnish stakeholders, as well as the results of the first workshop² of the FSC, in Paris in August 2000, three major sets of success criteria can be identified:

- Criteria related to nuclear energy technologies
- Criteria related to waste management
- Criteria related to stakeholder involvement

Criteria related to nuclear energy technologies

For the general public, nuclear power and the associated radioactive wastes are amongst the hazards that are perceived as the riskiest and that generate the greatest level of concern, a finding that is replicated cross-culturally in many settings. As a result, efforts to develop nuclear energy-related programs are replete with conflicts, delays, and inefficiencies. Within the framework of the OECD NEA several key elements which could increase social acceptance have been investigated^{3,4}.

- One of the key elements is the *incremental, step-wise approach* leading to the implementation of final disposal facilities. According to a recent NEA publication⁵, this approach provides opportunities for social and political review after each step and for reversing former decisions or modifying plans. Since there are a number of sequential decisions to be made (e.g., identifying the goals of the programme, defining institutional arrangements, defining a waste management concept, selecting a site and a method), decision-makers and implementers have the opportunity to demonstrate their competence and responsible attitude over time.

The Finnish case confirmed the effectiveness of the step-wise approach as a factor of success. However, it also illustrated that decomposing the siting process to subsequent stages is not

2 NEA, 2000. Proceedings of the NEA/RWMC Forum on Stakeholder Confidence. Inauguration, First Workshop and Meeting. Radioactive Waste Management Committee, Nuclear Energy Agency of the OECD, Paris.

3 NEA, 1995. The Environmental and Ethical Basis of Geological Disposal: A Collective Opinion of the NEA Radioactive Waste Management Committee, Nuclear Energy Agency of the OECD, Paris; and NEA, 2001.

4 NEA, 2001. Reversibility and Retrievability in Geological Disposal of Radioactive Waste. Reflections at the International Level. Radioactive Waste Management Committee, Nuclear Energy Agency of the OECD, Paris.

5 *ibid.* NEA, 2001

sufficient by itself; in order to raise public confidence, each step has to be participatory and adaptable as well. Constraining public involvement to certain steps of the process (for example, excluding the public from the early stages), or not being open to modifying former decisions (for example, excluding alternative methods from further investigations during the EIA process) can be counterproductive.

- Another key element of success pointed out in a recent NEA document⁶ is the *separation of the radioactive waste management issue from the future of nuclear power*. However, in the Finnish case the role of this element is rather unclear. Although one of the rapporteurs emphasises that “the decision on the future of nuclear power is not linked directly to the current waste decisions, helping to keep them from being overly politicised”⁷, according to another rapporteur⁸: “the workshop clearly underlined the limits of any “experts” attempts to totally separate the debate on general nuclear issues and the specific discussion on the identification of a specific site for the disposal of spent nuclear fuel.” It is a fact, however, that the facility DiP applies only to wastes that are generated from the currently operating nuclear power plants. The high level of support for the disposal facility in the Parliament (159 vote for; 3 against) is also likely to be attributed to a changing attitude to nuclear energy production within the Finnish public. This seemed to be confirmed by the presentation of Ms. Anneli Nikula (TVO) on recent public opinion data⁹, as well as the remarks of a session moderator¹⁰: “regardless of their position on nuclear issues, they (Finnish people) are aware of what their quality of life would be if their energy supply declined, if not ceased, for any reason. ... The moderator considers that, if Finland were located in southern Europe, they might not have reached the stage that the rest of the nuclear world currently admires.” Thus, contrary to former assumptions, it seems that in some cases, chances of acceptance for the radioactive waste disposal facility might be improved by connecting it with energy production.

Criteria related to waste management

1. The need for the waste management programme is clearly established. A consensus is established that the status quo is unacceptable; there is an important problem to be resolved; and the planned facility is the preferred solution to the given problem.
2. The goals of the waste management program are clear. The source, type, and amount of waste to be disposed of at the facility are well defined.
3. Site selection and selection of an implementation approach do not occur simultaneously. The waste management concept is identified and made widely known before site selection.
4. The goal of the site-selection process is to identify a licensable site with host community support. Site-selection is a voluntary process in which communities are allowed to withdraw from consideration at any time.

6 ibid., NEA, 2000.

7 Report by Tom Isaacs (these proceedings).

8 Report by Frédéric Boudier (these proceedings).

9 Presentation by Ms. Anneli Nikula (TVO) at the FSC site visit at the Olkiluoto Nuclear Power Plant, 14 November, 2001.

10 Summary of Session III Roundtable Discussions by Hideki Sakuma (these proceedings).

5. The goal of the implementation approach is to identify a licensable method with host community support. Introducing measures that facilitate the retrievability of the waste improves the chances for host community confidence and support.
6. A win/win arrangement is negotiated with the host community. Benefits ensue from long-term commitment to support the community, e.g., jobs, taxes, financial compensation, in-kind support, as well as from other measures intended to offset perceived negative impacts.
7. The host community is involved in decision-making regarding site selection, method selection, and benefits. Local governments act as decision-making bodies, and local liaison groups facilitate public information, education and consultation.

Criteria related to stakeholder involvement

1. The legal and regulatory frameworks are well defined and clear. They are adapted to changing social and political conditions on a regular basis.
2. The roles and responsibilities of the parties (e.g., regulator, implementer) are well understood. The neutrality and independence of the regulatory authority is assured. The distribution of responsibilities and authority is checked from time to time and adapted if necessary.
3. A clear, open, and transparent process is used in decision-making. As a result, the accountability of the decisions is ensured.
4. Responsible organisations are willing to engage in a dialogue which is perceived as a fair process, whatever the outcome of the consultation should be. They are also willing to adapt programme decisions to deal directly with stakeholder concerns and considerations.
5. The political leaders in both the legislative and executive branches of the government display long-term commitment to the program. There is also a need to have commitment of the different non-governmental actors.

Ongoing debates concerning the criteria of successful siting processes indicate that there is much more to be learned in this and other fields. The second FSC workshop designed to draw lessons from the Finnish case was an important step in this direction.