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## Final disposal of spent nuclear fuel

– regulatory system and roles of different actors during the decision process

Report from a seminar on November 15, 2006





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Swedish National Council for  
Nuclear Waste (KASAM) M 1992:A

# Final disposal of spent nuclear fuel

– regulatory system and roles of different  
actors during the decision process

**Report from a seminar on November 15, 2006**

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# Why a seminar on the decision process?

In November 2006, Svensk Kärnbränslehantering AB (Swedish Nuclear Fuel and Waste Management Co), SKB, submitted an application under the Nuclear Activities Act<sup>1</sup> for a permit to build an encapsulation plant for spent nuclear fuel in Oskarshamn. In 2009, the company plans to apply for a permit to build a final repository as well.

Many questions are asked regarding how decisions are made on permits to build these facilities. What laws are to be applied, do they contain suitable provisions, and do the provisions of different laws conflict with each other? Where do we stand today when it comes to this decision process?

When the Environmental Code<sup>2</sup> entered into force in 1999 it became clearer how the processing of applications for nuclear facilities should proceed. But some points may still remain unclear. There may thus be different opinions as to how the rules in the Environmental Code should be interpreted to properly reflect the provisions in EU directives and international conventions.

The purpose of KASAM's seminar on 15 November 2006 was therefore to describe the regulatory system and the roles of different actors during the decision process. Another goal of the seminar was to identify any unclear points during this decision process. Another question of interest was how the background material for a future decision is gathered.

The subject of the seminar was the decision process, which covers the time and the sequence of events from when an application has been submitted until the Government makes a decision to approve or reject the application.

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<sup>1</sup> Act (1984:3) on Nuclear Activities.

<sup>2</sup> Environmental Code (1998:808).

The emphasis was on the legal aspects. The questions were elucidated by Margaretha Bengtsson, environmental advisor at the environmental court in Stockholm, Jonas Ebbesson, Professor of Environmental Law at Stockholm University, Peggy Lerman, Lagtolken AB, and Staffan Westerlund, Professor of Environmental Law at Uppsala University. In addition, Urban Strandberg, Associate Professor of Political Science at the Centre for Public Sector Research (CEFOS) at Göteborg University, spoke about lessons that can be learned from how other major infrastructure and civil engineering projects have been executed.

This booklet is a summary of the main points that were discussed at the seminar. It is also based on some supplementary information obtained from memorandums submitted by the speakers to KASAM<sup>3</sup>. A selection of questions and answers during the seminar are also presented.

It should be emphasized that the text reflects issues and opinions that were discussed and presented at the seminar, but does not provide complete information on all the topics that were discussed. KASAM hopes that the text will provide easily accessible information on the decision process that is now beginning for the nuclear waste management issue in Sweden.

First a brief background is provided describing events leading up to an application from SKB for a permit to build an encapsulation plant. Important legal rules that will be applied are presented under the heading *Premises and conditions for permits and licences*. The section *How applications are examined* contains general information on the work of the regulatory authorities whose job it is to decide on applications according to different rules. The criticism that was expressed at the seminar by Jonas Ebbesson and Peggy Lerman of the fact that SKB has chosen to apply for a permit for the encapsulation plant before the final repository is presented under the heading *Critical viewpoints on SKB's application process*. At the seminar, Peggy Lerman initiated a discussion of the importance of differentiating between *purposes* and *project goals*, while Staffan Westerlund initiated a discussion of the implications of the rules regarding *environmental impact assessments*. In addition, Urban Strandberg spoke about lessons that can be learned from how *other major infrastructure and civil engineering projects* have been executed, and Krister Hallberg

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<sup>3</sup> These documents are available at KASAM's website ([www.karnavfallsradet.se](http://www.karnavfallsradet.se)).

offered some reflections from a municipal perspective. The essential content of these four presentations can be found in separate sections.

The content of the discussions held at the seminar is described in the section entitled *Questions, answers and discussion*. The section is structured around the following themes:

- Municipal issues.
- Coordination, the roles of the regulatory authorities and the decision process.
- Best available technology, best site, the Environmental Code and the Nuclear Activities Act.
- Examination remit and purpose.
- The EC's EIA directive and Swedish legislation.
- The consultation procedure in connection with an environmental impact assessment.
- SKB's permit application for an encapsulation plant.

Finally, KASAM presents the conclusion that a number of questions associated with the decision process that has now been initiated need to be further elucidated. These are questions within the following areas:

- Coordinated Government examination.
- Varying uses of certain terms.
- The purpose.
- Examination by the environmental court.



## Some background facts

As mentioned previously, in November 2006, Svensk Kärnbränslehantering AB (Swedish Nuclear Fuel and Waste Management Co), SKB, applied for a permit under the Nuclear Activities Act to build an encapsulation plant. According to the application, the encapsulation plant will be situated adjacent to the interim storage facility for spent nuclear fuel, Clab, which is located at the nuclear power plant in Oskarshamn. The application also includes the permits that are needed to integrate the operation of the encapsulation plant with that of Clab. An environmental impact statement (EIS) is appended to the application. The application was submitted to SKI, but it is the Government that ultimately decides whether the application will be approved or not.

The encapsulation plant is a part of the system for final disposal of spent nuclear fuel planned by SKB. The system also includes a final repository. The method for final disposal planned to be used by SKB is called KBS-3. Permits under two acts, the Nuclear Activities Act and the Environmental Code, are required to build an encapsulation plant and a final repository for spent nuclear fuel. The company plans to submit the additional applications that are required under these laws at the end of 2009. This includes a) an application under the Nuclear Activities Act for a permit to build a final repository for spent nuclear fuel in either Oskarshamn or Östhammar<sup>1</sup>, and b) applications under the Environmental Code for the encapsulation plant and the repository. Applications under the Nuclear Activities Act are submitted to SKI and applications under the Environmental Code to the environmental court.

All applications must include an EIS. SKB has given notice that the EIS that was attached to the application in November 2006 for the encapsulation plant will be “supplemented” when other

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<sup>1</sup> The final repository is planned to be sited either near the Oskarshamn nuclear power plant (the Laxemar area) or near the Forsmark nuclear power plant in Östhammar Municipality.

applications are submitted in 2009. A complete EIS for the final repository system as a whole is thus not planned to be ready before this time.

The applications should be considered in the light of the parallel site investigations that SKB has been conducting since 2002 in an area near the Forsmark nuclear power plant in Östhammar Municipality and in an area near the Oskarshamn nuclear power plant.

The municipal councils in both municipalities have taken a positive stand on the site investigations. The choice of these two sites is the result of feasibility studies that SKB conducted in eight municipalities during the 1990s (Storuman, Malå, Tierp, Östhammar, Nyköping, Hultsfred and Oskarshamn)<sup>2</sup>.

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<sup>2</sup> For an overview of these feasibility studies, see KASAM's "Nuclear Waste – state-of-the-art reports 2004," pp. 83-145 and sources referred to there.

# Premises and conditions for permits and licences

It is up to the Government to make the ultimate decisions regarding the facilities. But first the matters are prepared by the environmental court and the Swedish Nuclear Power Inspectorate, SKI. These bodies will make a recommendation to the Government on how it should decide based on the provisions in the Environmental Code and the Nuclear Activities Act. A Government decision under the Environmental Code concerns the permissibility of the activity based on the Code's overall goals and general rules of consideration. A decision under the Nuclear Activities Act, on the other hand, entails issuing a permit for the activity mainly on the basis of safety aspects. In both decisions the Government may stipulate general conditions for the activity. The environmental court and SKI stipulate the detailed conditions.

The Government's examination of permissibility thus concerns whether it is suitable to conduct operations that "constitute important societal interests at the same time as they risk harming human health, entail major environmental impact or large incursions in the environment and lay claim to valuable natural resources." (Gov. Bill 1997/98:45 Part I p. 436.)

The environmental court's and SKI's processing of the matters are formally quite independent of each other. It is however evident from the travaux préparatoires to the two bodies of legislation that the Government Offices should coordinate the matters and that the Government should make decisions on both matters at the same time. It is thus a question of two different decision processes that are designed differently, run in parallel and require coordination for the Government to be able to make a decision on

the overall question of whether the applications are to be approved or not.

The next section describes the principal contents of the provisions in the Environmental Code, the Nuclear Activities Act and the Radiation Protection Act<sup>1</sup> that are to be applied in this context. There are also provisions in other laws, such as the Planning and Building Act,<sup>2</sup> but they are not dealt with in this booklet. The question of SKB's RD&D-programme is also taken up: what are the legal implications of the decisions made by the Government in conjunction with the publication of the RD&D programmes?

## Environmental Code

EC 1:1. "The purpose of the provisions of this Code is to promote sustainable development that will ensure a healthy and sound environment for present and future generations. Such development is based on the realization that nature is worthy of protection and that man's right to modify and exploit nature carries with it a responsibility to manage natural resources wisely. "

The overall goals of the Environmental Code are important for the issue of a final repository. They are relevant in the application of the general rules of consideration in Chapter 2 of the Code, and in the evaluation of the supporting material and the environmental impact statements (EISs).

The general rules of consideration are formulated to cover a large number of activities, everything from small home businesses and filling stations to large industrial facilities, such as the final repository for nuclear waste. Here it is required that the person or organisation that conducts the activity explain how the rules of consideration are complied with. In other words, SKB must show how the requirements will be met and how uncertainties and risks will be handled. The activity operator must also implement protective measures, comply with restrictions and take any other precautions that are necessary in order to prevent, hinder or combat damage or detriment to human health or the environment. To accomplish this, the best available technology must be used

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<sup>1</sup> Radiation Protection Act (1988:220).

<sup>2</sup> Planning and Building Act (1987:10).

(EC Chap. 2 Sec. 3. jonas Ebbesson, Professor of Environmental Law at Stockholm University, clarified this at the seminar:

“Based on the requirements of the Environmental Code, this means that the technology must be industrially feasible. It is not, however, necessary for the operator to use technology that is in the experimental stage or to originate and develop new technology. But it is possible to decide on a probationary period so that the applicant can explore the possibility of employing a given technology during a period. The basic principle for the final repository is in any case that if a better technology than the KBS-3 method exists in the world, a permit should not be issued for KBS-3.” He adds that a reasonable balance must be struck between the benefit of using a better technology and the extra costs this may entail, but that in the case of the final repository, lowering the requirement level based on such considerations would not be an option.

The location of a facility is also of importance. According to the Environmental Code’s general rules of consideration: “Sites for activities and measures shall always be chosen in such a way as to make it possible to achieve their purpose with a minimum of damage or detriment to human health and the environment.” (EC Chap. 2 Sec. 6).

“There is thus no valid reason to issue a permit for an environmentally hazardous activity on a site as long as there is another site that is better from an environmental and health viewpoint,” says Ebbesson. “Just like when it comes to the choice of technology, a departure can be made from the principle of selecting the best available site if the site would entail an extra cost that is not considered reasonable in relation to the marginal benefit compared with another site. The geographic limitation on what sites should be considered is less for small activities than for larger activities. The Code’s goal of sustainable development and consideration for the interests of future generations is also of importance for both the alternatives considered in the EIS and the selection of a site.”

He says that in judging what constitutes a suitable site for the final repository, the Government should consider the whole of Sweden’s territory. There is no legal support for limiting the choice of site to those areas where the municipal inhabitants accept a final repository. Nor is any municipality entitled to the final repository.

“If there is a site that is ‘better’ from geological, environmental, technical and health viewpoints than Forsmark and Oskarshamn, this site should be selected, and it is the responsibility of the activity operator, in other words SKB, to explain in the EIS why they have rejected other sites. If the account is not exhaustive enough, the supporting material is not acceptable. This may mean that supplementary material must be provided or that SKB is denied a permit.”

The Environmental Code also contains a “stop rule” whereby the activity operator does not necessarily get a permit despite having selected the best available technology and the best site. The stop rule is applied if the best available technology is still not considered sufficiently safe. The risks that human health or the environment will be harmed may be too great. In exceptional cases the permit may nevertheless be granted, but then for “special reasons” or because the activity is “of particular importance for reasons of public interest” (EC Chap. 2 Sec. 10).

“If, despite the fact that it is considered to be the best available technology, the proposed final repository with the KBS-3 method entails very great environmental and health risks, the application for a permit under the Environmental Code may be denied.

## **Nuclear Activities Act**

The Nuclear Activities Act contains basic provisions regarding nuclear safety. The Act requires the operator to discharge Sweden’s obligations when it comes to, for example, preventing the proliferation of nuclear weapons. It also requires that technical safety in nuclear activities be upheld.

The Nuclear Activities Act enables SKI and the Government to stipulate stricter requirements on the use of “best available technology” than is possible under the Environmental Code. As made evident above, the Environmental Code requires the best available technology to be used, while SKI may, for safety reasons, require that the applicant (in this case SKB) originate and develop a given technology that is not available today.

## Radiation Protection Act

The Radiation Protection Act regulates the management of certain radiation risks, for example the management of radioactive waste. When a permit is issued under the Nuclear Activities Act, a permit under the Radiation Protection Act is not required, but SSI determines what conditions are needed for radiation protection.

### Importance of RD&D programmes

According to the Nuclear Activities Act, the nuclear power industry shall draft a programme for allround research and development activities. SKB shall demonstrate different methods for managing and disposing of the nuclear waste. This has been done in so-called "RD&D programmes" published since 1986 in the form of reports to the Government, which has commissioned SKI and KASAM to review and evaluate them. Based on the reports the Government has then approved SKB's programmes. In connection with its decisions, the Government has made numerous statements regarding the direction of SKB's work.

Of particular interest is the statement made in a decision in 2001:

Without anticipating decisions regarding future permit and licence applications, the Government believes that Svensk Kärnbränslehantering AB should use the KBS-3 method as a planning premise for the site investigations referred to here. Within the framework of the RD&D programmes, SKB should also continue to keep track of future technology development with regard to various alternatives for disposal of nuclear waste.

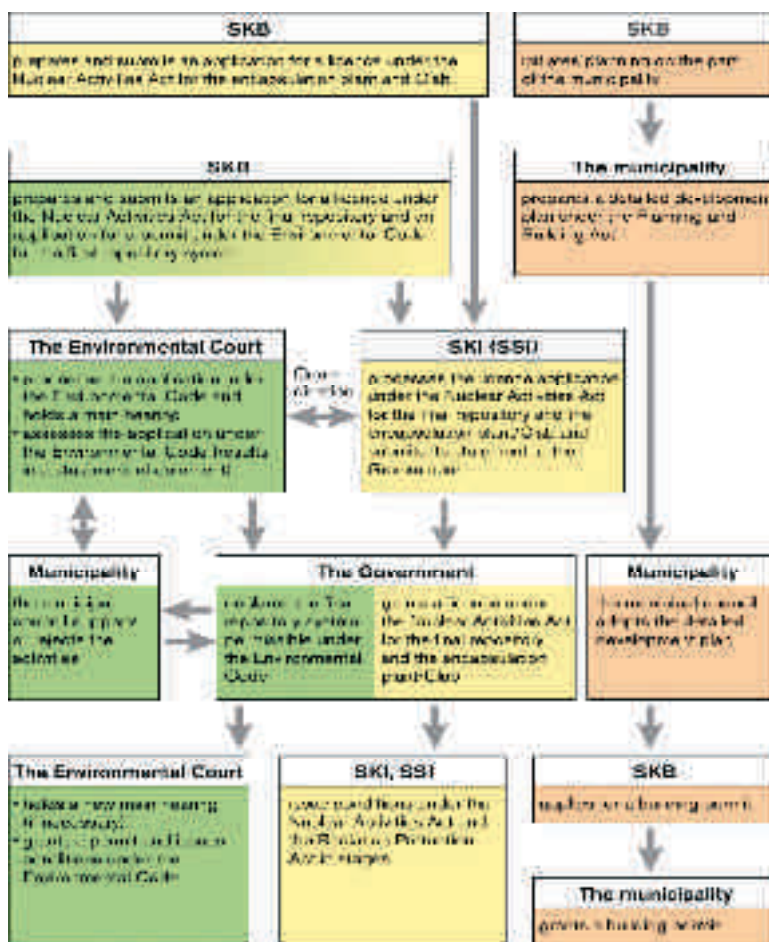
It should be emphasized that the Government's decisions regarding the RD&D programmes are not legally binding on its decision regarding the permit and licence applications. However, the programmes and the Government's decisions have naturally been of significant importance for the work underlying the applications.



# How applications are examined

## Illustration of the licensing process

The following figure illustrates the main features of the decision process.



Source: SKB Rapport R-06-50, p. 20 (in Swedish only).

## Environmental court (Margaretha Bengtsson)

When SKB has submitted its application for a permit (under the Environmental Code) to the environmental court, the Court first reviews the matter and then sends it out to the concerned reviewing bodies, such as the Swedish Environmental Protection Agency, the County Administrative Board and the municipality's environmental committee. The regulatory authorities have an opportunity to request supplementary information.

“After the application has been supplemented by SKB, the Court announces the application by printing an advertisement in the local newspaper. Then anyone can present their views in writing to the environmental court,” says Margaretha Bengtsson from the environmental court in Stockholm.

The announcement and the application are also sent to other authorities that are compulsory reviewing bodies, such as the Legal, Financial and Administrative Services Agency, the Swedish Rescue Services Agency and the National Board of Fisheries. Furthermore, the environmental court can determine whether others should have an opportunity to state their opinion.

“It's better that we get as many statements as possible at this point, since the Government may have opinions on who should have been asked when the matter comes to them for judgement. In such a complex matter as a final repository for nuclear waste, many bodies may have opinions from different perspectives,” says Bengtsson.

When the review statements have been received, SKB is given an opportunity to respond to the viewpoints. The environmental court then holds an oral, public hearing and anyone who wants may attend and voice opinions on the application. As a rule, every case before the court is assessed by a judge, an environmental advisor and two expert members with experience from the purview of the Swedish EPA and from industrial or municipal activities. The court judges the content of the EIS and how it has been prepared, for example with the aid of consultations.

The court then normally arrives at a judgement, but in the case of the final repository a *permissibility assessment* under Chapter 17 of the Environmental Code is required. Permissibility is ruled on by the Government. Instead of a judgement, the environmental court therefore writes a statement to the Government where it supports or rejects the application and may also recommend

conditions that should be attached to a permit. If the Government has judged that the activity is permissible, the matter is referred to the environmental court, which issues a decision on a permit.

## **Swedish Nuclear Power Inspectorate, SKI**

The same requirement regarding transparency of the licensing proceedings does not exist under the Nuclear Activities Act as under the Environmental Code. However, a regulatory authority such as SKI has a responsibility to provide information, guidance and advice to the public and to answer questions.

The matter is normally dealt with in writing, but SKI can choose to make certain parts oral and open to the public. The principle of public access also means that anyone is free to peruse public documents received in the matter.

SKI's judgement is based on both the Nuclear Activities Act and the Environmental Code. SKI also rules on whether the consultations and the EIA process have been carried out in an acceptable manner, supports or rejects the application and proposes conditions for the permit. The matter is then referred to the Government for a decision. If the Government decides to issue a permit, it will probably instruct SKI to issue any conditions that may be necessary to ensure safety at the facilities. With the support of the Radiation Protection Act, the Swedish Radiation Protection Authority can also issue conditions for the activity.

## **Handling by the Government**

SKI assumes that the Government will handle the matters from SKI and the environmental court in parallel. According to Jonas Ebbesson and Peggy Lerman, it is not at all inconceivable that the environmental court and SKI make different judgements regarding permissibility, conditions etc. and the EIS. This is partly because the environmental court and SKI base their judgements on different considerations, and partly because the rules of the Environmental Code are not formulated in such a way that they define precisely the nature of any conditions that may be issued.

But there are no clearly defined guidelines for how the Government will handle the matters. The Government has some

freedom to coordinate the decision processes under the Environmental Code and the Nuclear Activities Act and also around the different facilities, as well as to decide how the public should be given an opportunity to participate at this level. But neither the Environmental Code nor the Nuclear Activities Act say anything about the procedures. A minimum requirement is, however, expressed in the Instrument of Government: The Government shall “observe objectivity and impartiality” and obtain the necessary information and opinions from the public authorities. Moreover, “Organisations and private persons shall be afforded an opportunity to express an opinion.” The Government can also arrange hearings or meetings.

### **If the Government’s decision is re-examined**

The Government’s decision on permissibility and permits cannot be appealed in the usual sense. It can, however, be the subject of judicial review. Private persons who are affected by the decision or environmental organizations that satisfy the criteria in the Environmental Code (EC Chap. 16 Sec. 13) may request judicial review of the Government’s decision by the Supreme Administrative Court. If the Government decides not to permit the activity, SKB may similarly request judicial review on the ground that the decision conflicts with some legal rule.

The judicial review procedure differs from ordinary appeals. The Supreme Administrative Court, which is the highest court with jurisdiction over the official decisions of the Government, can only consider the question of whether the Government’s decision conflicts with a legal rule or not. It examines whether the Government in its judgement has kept within the legal bounds set up by the regulatory framework. Legal re-examination does not extend to that part of the Government’s decision that includes the political arena where different public interests, such as energy or employment policies, may have to be weighed against each other. However, these considerations must not take precedence over the legal bounds. The Government’s decision cannot be altered in its individual details; if the Supreme Administrative Court finds that the Government has transgressed the legal bounds, it overturns the Government’s decision in its entirety.

The actual conditions for permits defined by the environmental court after the Government has declared permissibility can be appealed by private persons and environmental organizations. Individuals affected by the activity also have an opportunity to appeal SKI's and SSI's conditions to the Government, but this is not possible for environmental organizations.



# Critical viewpoints on SKB's application process

As mentioned previously, in November 2006 SKB submitted an application to SKI for a permit to build an encapsulation plant for spent nuclear fuel in Oskarshamn. Three years later, at the end of 2009, SKB plans to apply for a permit for the actual final repository for nuclear waste. In this application, SKB will make a final choice of the method to be used and the site for the final repository.

It is the applicant, i.e. SKB, who bears legal responsibility for how the application is designed and when it is submitted to the examining authorities. In cases where several applications are involved, the applicant also determines in what order they will be submitted. However, it is the environmental court, SKI and the Government who determine whether the manner of application makes it possible to issue a permit for the activity.

Jonas Ebbesson and Peggy Lerman expressed criticism of SKB's choice to submit an application for the encapsulation plant before the final repository and offered a number of arguments in support of their standpoint.

SKB replied to the criticism during the following discussion, of which an account is given in the section "Questions, answers and discussion" (p. 37 ff.).

## **Jonas Ebbesson's and Peggy Lerman's criticism**

Jonas Ebbesson is critical of the fact that SKB is applying for a permit to build an encapsulation plant three years before the company applies for a permit to build a final repository. Since the primary activity is the final repository, the question of where the encapsulation plant will be located and how it will be designed is dependent on the method used for the final repository and its

siting. In Ebbesson's opinion, there is a risk that by applying for the encapsulation plant first, SKB is in practice becoming locked into the site chosen by SKB and the method chosen by SKB as the main track: KBS-3. The regulatory authorities will not get to see the environmental impact statement, EIS, for the final repository until three years later, and then the EIS for the encapsulation plant will already be relatively old. For the regulatory authorities this entails three years of reviewing work etc. before a final EIS is available for the main activity that shows that the final repository meets the requirements of the Environmental Code on siting and design.

"It would be more appropriate to either submit the applications for the final repository and the encapsulation plant at the same time, or to submit the application for the final repository first," he says.

Peggy Lerman is also critical of the fact that SKB is applying for a permit for the encapsulation plant first. She thinks there would be a greater openness to different alternatives if all parameters were placed on the table at the same time. Such openness is imperative if the best solution is to be found. She points out that SKB says itself that the company's goal is an overall assessment for the Government.

"Once an evaluation of the encapsulation plant begins it will be very difficult after 2009 to take a step backward and take a fresh look at the alternatives. The method will already have become rooted in the minds of those in charge of examining the matter," she says.

Ebbesson also has objections to this order due to the fact that concerned municipalities will presumably begin to plan for the facility, since the encapsulation plant must comply with the municipality's detailed development plan in order for an assessment to be made of the siting of facility. Furthermore, he says, the procedure makes it confusing for interested persons and interest organizations to know what matter is being reviewed, when decisions are made and why this part of the system is being licensed before other parts.

Lerman also believes that the stepwise procedure makes an overall assessment of the system difficult. She points out that it is more difficult for the regulatory authorities to impose requirements on the different parts, and that there is a risk that questions will be brought up too early or too late and thereby be

overlooked. It is also more difficult for private citizens to take part in the processes, she says, since they do not know in what bodies different questions will be dealt with.

The system whereby the facilities SKB wants to build are examined under several laws entails that there should, strictly speaking, be several separate preparatory processes. As mentioned previously, the laws have different purposes and focus but partially overlapping requirements. Peggy Lerman says that this means there is a risk that the assessments will clash and make it difficult for the public to participate. It is clear from the travaux préparatoires to the Environmental Code and the Nuclear Activities Act<sup>1</sup> that the Government is expected to handle all such matters in a single context, but that there is no formal preparation process for such an overall assessment.

Lerman also maintains that there is a great risk that it will take a long time before a complete body of material is available for an overall environmental impact assessment. SKB is supposed to supplement the environmental impact statement they submit with the application for the encapsulation plant in 2006 during the three years up until they apply for the final repository. However, Lerman assumes that the application for the final repository will also require supplements and that the whole process will therefore take even more time. Even though a number of the basic rules are the same for the two licensing processes and should be considered in a single context, it is not certain that the examination of the encapsulation plant can wait for the other parts that relate to the final repository. Lerman says that it is difficult at this time to know how the different licensing processes will relate to each other.

Peggy Lerman takes up another problem: the regulatory authorities employ different procedural forms, which complicates communication between the parties. The environmental court makes use of oral proceedings, while SKI's and the Government's proceedings are usually in writing. She thinks it is reasonable that the latter bodies should also have oral preparations and main hearings.

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<sup>1</sup> Gov. Bill 1997/98:45 part 1 p. 328 and Gov. Bill 1997/98:90 p. 271.

## Regulatory authorities' comments

In a memo written prior to the seminar, Jonas Ebbesson discussed the question of whether SSI can issue conditions for radiation protection if the environmental court has already set conditions for radiation protection in the Environmental Code. In this memo he states the following:

It is my assessment that if the environmental court has considered and judged the radiation risk in its examination, which it must do in the case of a nuclear activity, then *SSI cannot formulate such conditions*. The court may possibly stipulate a probationary period for the radiation conditions, but even then the radiation issues have been examined. In the unlikely event the court should refrain from examining these issues, SSI is free to issue such conditions.

“Here there is really no conflict between two regulatory systems. SSI is empowered to issue conditions according to the Radiation Protection Act when a permit has been issued under the Nuclear Activities Act, but only if the radiation has not been examined by the environmental court. An operator who has a permit under the Environmental Code where the radiation protection has been examined is thereby immune to further conditions from SSI.

The situation may possibly be different if SSI instead chooses to formulate legal requirements in the form of general regulations with the support of the authorization in the Radiation Protection Ordinance. The formulation in the Environmental Code, that the permit is valid ‘against all other parties’, can hardly entail that someone who has received a permit under the Environmental Code is immune to all requirements introduced via general standards, as legislation or regulations. It should, for example, be possible via legislation to prohibit the general use of a chemical in such a way that activities with permits are also affected by the prohibition. Similarly, general regulations with general effect can be valid even for someone who has been issued a permit by the environmental court where the radiation has been examined. The permit can thus not be said to be valid against SSI as a ‘legislator’ (or rather a ‘standard setter’). The question is nonetheless not simple to answer, nor has a decisive ruling concerning the relationship between the Environmental Code and SSI’s competence been issued by the Superior Environmental Court or the Supreme Court.

*Tomas Löfgren of the Swedish Radiation Protection Authority (SSI)* says that SSI does not have a mandate to issue radiation protection conditions under the Environmental Code. On the other hand, SSI enforces the Radiation Protection Act, which is a special law that is

applied in nuclear activity matters. This empowers SSI to issue conditions.

“Peggy Lerman also pointed out that we cannot apply the general rules of consideration. This is true, but SSI is supposed to apply the precautionary principle and requires that the best available technology be employed. There is no siting rule, but the best available technology principle can be used as a tool for siting as well,” he points out.

Löfgren also says that there is legal support for the environmental court to refrain from issuing radiation protection conditions. “The competent authority, in other words SSI, should stipulate the conditions,” he says.

*Anders Wiebert, SSI*, points out that Jonas Ebbesson comes to the conclusion that SSI's regulations do not impose additional requirements on top of the Environmental Code's rules regarding best available technology. However, Wiebert is of the opinion that SSI, in its General Recommendations, defines the expectations on SKB's choice of site and technology. The radiation protection requirements are formulated with a view to the future consequences for human health and the environment and to ensure that the repository will be safe for many generations. These requirements should also be fundamental for SKB, who should take advantage of the opportunities to make the final repository as good as possible.

“The special legislation clarifies the expectations on SKB's reporting. Radiation protection optimization and best available technology are tools for us when we stipulate how SKB is to evaluate whether the final repository is safe and located on the best site,” he says.

Regarding SKB's application for the encapsulation plant, SSI wants to devote the three years before the application for the final repository comes in to reviewing issues that should be ready to be addressed, such as radiation protection for the personnel at the encapsulation plant. In the case of issues related to method and siting, SSI wants to wait until SKB has submitted its application for the final repository.

*Ingvar Persson, SKI*, is not as worried about the decision process as Lerman and Ebbesson. This, he says, is due to the travaux préparatoires to the consequential legislation, where additions to the Nuclear Activities Act are handled and process questions are

taken up. The travaux préparatoires presume that the environmental impact assessments will be coordinated by SKI and the environmental court in the matters to be examined under both the Nuclear Activities Act and the Environmental Code.

"This has been tried previously, and the coordinated process has worked well," he says, referring to the examination procedures for the nuclear power reactors in Ringhals and a near-surface repository in Oskarshamn.

He thinks that the decision process will work this time too.

"SKI will examine the encapsulation plant in coordination with the application for the final repository, since the canister is a part of the method that will be used at the final repository. We will also make sure that the EIS has the focus and the scope we want it to have," says Persson.

On the other hand he is worried that SKI and the environmental court will issue duplicate conditions for safety and radiation protection after a decision by the Government. Here he believes that SKI can issue as strict requirements as necessary.

"We don't think the environmental court should decide on conditions for safety and radiation protection, but leave this to the special authorities that are better qualified for this."

He also points out that the municipalities will have access to the competent authorities' background material when they write their statements of opinion to the environmental court.

# Purposes or project goals?

*Peggy Lerman, Lagtolken AB*

According to the Environmental Code, an application shall also contain a description of the purpose of the facility to be built. The purpose in SKB's case is to achieve a safe final repository for spent nuclear fuel. Peggy Lerman says that we must differentiate between "purposes" and "project goals", since only the purposes are relevant for legally judging what an alternative is. Purposes answer the question "why", in other words what is the reason for a waste repository. Project goals mainly address "what, where and how", in other words how the purpose is to be achieved, or how it is to be implemented.

"Purposes can't be so detailed that they define a specific solution. The purposes don't stipulate the means, nor can they be formulated backwards from a given project and thereby specify the premises so that no other alternatives will do. Instead the purposes serve as a basis for developing alternatives," she says.

The project goals are limited in this case by the nuclear power industry's commission to SKB, as well as by ambitions and problems at the operational level. Project goals are concrete and virtually never give formally valid reasons for limiting the alternatives.

SKB has a responsibility to formulate and disclose the purposes behind its application. The formulation of the purpose will be evaluated by courts and regulatory authorities. Important parts can already be considered to have been finalized as a result of positions adopted by the Government, or legislation adopted by the Riksdag.

Peggy Lerman says that the law makes requirements on a safe final repository. Furthermore there is a policy, more or less clearly expressed by the Riksdag (the Swedish Parliament) and/or the Government as well as by SKB, stating that the waste will not be reprocessed, that it will be disposed of in Sweden, and that the

problem will be solved within a generation, plus that democratic acceptance must exist at a local level.

According to Lerman, the “purpose” of the repository should include that we will dispose of the waste within Sweden’s borders and not reprocess it. On the other hand she thinks that the time limitation of one generation should be regarded as a “project goal” and therefore not be allowed to set limits on what may be an alternative method.

“Solutions that lie farther in the future can, in my opinion, also be alternatives, and whether these alternatives are considered reasonable or not depends on what environmental benefit they offer and their cost. Acceptance of the repository by the municipal inhabitants is not a purpose either, since the long-term safety of the repository is the overriding purpose. Local acceptance is instead a project goal. Then comes the next question, that the public’s attitude can play a role in judging which alternatives are best,” she says.

The fact that the Government has approved the KBS-3 method as a planning premise in the work with site investigations does not, according to Lerman, mean that the method can be regarded as a part of the purpose.

“Method is a question of *how* and the purpose cannot be to use a given method. Nor can the question of which sites are reasonable alternatives to build the final repository on be answered until the purpose has been defined.”

Lerman also says that the complex and important question of what the purpose is needs to be answered clearly in good time before licensing, since it influences the supporting material and important choices during the planning process. Both the Government and the regulatory authorities need to show as soon as possible what they consider to be the underlying purpose of the final repository and what the goals of its operational implementation are, i.e. project goals.

# Environmental impact assessments

*Staffan Westerlund, Uppsala University*

Staffan Westerlund, Professor of Environmental Law at Uppsala University, gave an account of how the environmental impact statement, EIS, was developed in the USA in the late 1960s. Due to fragmented legislation at that time, decisions affecting the environment were taken without any comprehensive information on the environmental consequences. Requirements were introduced that Federal officials were not allowed to make decisions on large projects or programmes with an environmental impact without access to an EIS<sup>1</sup>.

The requirements on an environmental impact statement aroused interest outside the USA as well. These requirements were raised in the United Nations by the Brundtland Commission in 1987 and were incorporated in the 1991 Convention on Environmental Impact Assessment in a Transboundary Context (Espoo Convention). Principle 17 of the Rio Declaration, adopted at the UN Conference on Environment and Development in 1992, was dedicated to environmental impact assessment (EIA, which results in an EIS). An EEC directive from 1985 was amended in 1997, and the EC directive on strategic environmental assessments for plans and programmes came in 2000. Several countries introduced different versions of EIA/EIS.

According to Westerlund, the success of an EIS is based on six criteria, which together create the concept “The genuine EIS”:

- The EIS must be ready in advance of a decision and be taken into account by the decision-maker. It must provide information on the total environmental impact, including indirect and cumulative effects, lock-in effects, etc.

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<sup>1</sup> The USA’s National Environmental Policy Act of 1969 (NEPA).

- It must be clearly related to why a given project is being considered: What does the project wish to accomplish and why? What is the real purpose? (also called result criterion or purpose criterion).
- The EIS must cover the envisaged project, but also several alternatives to the one being considered. The alternatives must, in full or in part, lead to a comparable result and be able to realize the purpose of the project.
- It must be possible to weigh the alternatives against each other. Benefit and harm must also be able to be weighted.
- It must be able to be reviewed in terms of objectivity, completeness and legality, i.e. the process must be transparent. Private persons and nongovernmental organizations must be able to review and comment on drafts of the EIS.

According to Westerlund, the international trend is based on these criteria, for example the Espoo Convention.

“The idea is that EIA should be carried out by public authorities, not private developers,” he says and points out that this is reflected in the EC’s EIA directive. “The developer should instead furnish data and information. The developer does not have any right to determine the scope of the EIA, and may not be the one who does the actual assessment. The regulatory authority bears legal responsibility to make sure that everyone has a chance to express viewpoints and that all viewpoints are taken into account.

“If the authority finds that certain viewpoints are unrelated to the purpose and do not need to be investigated, they are nonetheless compelled to take up the proposal and argue based on the law why they don’t think it should be investigated,” says Westerlund. He also points out that one of the basic ideas of EIA is to prevent making a premature commitment to a given strategy. Choices made by the developer are made at his own risk. The EIA must be carried out objectively, without bias, and if the developer does not proceed in this manner he may have to start over from the beginning.

“This means that countries where the developer is not responsible for the EIA have greater chances of carrying it out in an unbiased manner,” he says.

Swedish law is subordinate to EC law, and we must also take adopted conventions into account. This results in a complicated set of rules governing EIAs and EISs and, says Westerlund, is due to

the fact that the Environmental Code does not fully comply with EC law or the Espoo Convention. The directive's rules have been precisely defined and the judgements are binding within Swedish law as well and thereby on Swedish courts and the Swedish Government. The EC directive has so-called direct effect, which means that Sweden is obliged to apply the directive in all its parts, in the event all parts are not clearly reflected in Swedish legislation.

"The Swedish Environmental Code does not contain any provision regarding a competent authority. This departs from the EC directive and the basic idea behind the EIA," he says.

Westerlund uses the case of the Hallandsåsen Ridge as an example:

"All geologists know that the ridge is one of the most hydraulically conductive areas in the country. But this was not made clear in the background material for the decision. The Tunnel Commission has drawn the conclusion that if a broader body of material had been available the tunnel fiasco might never have occurred. EIA is an aid for the developer that he really doesn't want; an aid to avoid failure," he says.

He also points out that it is important in an EIA that coherent projects should not be divided up. It therefore conflicts with both the Environmental Code and the EC directive, as well as the basic idea behind EIA, to work with different EIAs for different examinations of one and the same project or programme.



# Lesson from other large infrastructure and civil engineering projects

*Urban Strandberg, Göteborgs University*

“Controversies are becoming increasingly common in communities where large-scale technical facilities are to be established. Residents protest against establishments of everything from power plants, refuse stations and military shooting ranges to motorways and mobile telephone masts,” says Urban Strandberg, Associate Professor of Political Science at the Centre for Public Sector Research (CEFOS) at Göteborg University.

Large-scale technical facilities entail risks and nuisances for the local community. Nature and people are affected. The negative sides of the project must be weighed against various local benefits and the benefit for society. Many public and private actors interact in the planning, approval and construction of facilities. Strandberg exemplifies this with representatives of public authorities, courts, politicians, construction firms, interest organizations, experts, media and engaged citizens.

“Naturally, everyone doesn’t have the same opinion regarding the facility. They have different points of view and levels of knowledge and understanding, which can lead to conflicts at consultations and regarding forms for decisions,” he says.

Researchers in the western world are interested in the population’s perception of risks and in democracy issues that have to do with people’s confidence in politicians, officials and authorities. In a recently concluded research project at CEFOS, controversies regarding the upgrading of Väst kustbanan (the West Coast Line) to two tracks have been studied. The controversies concern the route of the tracks, the location of the station, technical solutions, information and communication. There are

also conflicts regarding the design of the planning and decision processes and possibilities to influence the project.

The researchers have studied what acceptance private citizens have for plans and decisions and what makes them accept the upgrading of Väst kustbanan in their particular community. The results show that acceptance varies in the seven communities that have been studied. There is no simple explanation for why this is so. Strandberg says that an interaction between different factors explains how people reason.

“People who see advantages for themselves or their community are more positive than those who see disadvantages. If the railway upgrade is perceived to be risky, this has a negative effect on acceptance. If the citizens have confidence in politicians, officials and the National Rail Administration, they are generally more positive, which is also true if they are satisfied with the planning and decision process as well as their own possibilities to influence the process.”

Another factor that plays a role is what general attitude people have to development and technical progress – a positive attitude means higher acceptance of the Väst kustbanan upgrade. Strandberg also notes that women and elderly people were generally more negative than men and younger citizens. People who have lived in the community for a long time also tended to be more negative than new residents.

Strandberg sees acceptance issues as dynamic phenomena. Acceptance can change with time, depending on how local opinion changes. Public opinion can in turn be influenced by the public debate, media and other events. He also notes that fundamental democratic issues are often brought to a head in connection with siting processes.

“It has to do with people’s different views of how society should develop and the different values they put on natural environments and land areas. It may also be a question of what is perceived as a public or private interests,” he says and emphasizes that there is no guarantee that solutions can be found that everyone agrees on when it comes to establishments of large-scale technical facilities.

One lesson that has been learned from the project is that advocates of the an establishment should not regard the facility as a narrowly “technical” issue. They should also show respect for and be willing to listen to and learn from the local inhabitants. It is,

according to Strandberg, also important to understand that confidence takes a long time to build and how decisions are made is also important, for example if individuals feel they have a say.

“The most difficult-to-predict and dynamic phase in the siting process begins when the actual construction work starts,” says Urban Strandberg. “Noise and commotion are negative consequences in people’s everyday lives. Accident risks can provoke fear and anger and lead to powerful mobilization processes on the part of the public.”

He adds that rock engineering is particularly tricky in that it is not possible to know everything about the properties of the rock before the start of construction. From an engineer’s viewpoint it is natural to continuously adapt technical solutions based on the geological situation, but citizens usually want to have certain knowledge before making a decision and may have difficulty understanding and accepting departures from the original plans. Those in charge of the project must therefore be prepared and able to explain and justify the changes that are necessary.

When the construction work gets under way, public interest may shift from technical solutions to political, economic and ethical aspects. The process may become the focus of national attention and opinion formation, which can affect local opinion. Public acceptance of the project can change if citizens who previously saw personal advantages now perceive risks, uncertainty and worry. Events in the surrounding world such as problems or accidents at nuclear power plants or other technical facilities can also alter acceptance by shaking people’s faith in technology.

Strandberg points to the importance of anticipating problems at the start of the construction project. It is very important that those in charge of the project really try to understand how nearby residents perceive that their everyday lives will be affected.



# Questions, answers and discussion

## Municipal issues

1. *How can the municipality stipulate conditions for supporting an application?*

*Jonas Ebbesson:* I can't say what kind of conditions, if any, Oskarshamn or Östhammar will stipulate. But the municipality has the option of stipulating conditions for supporting an application to the Government. This option has been utilized before, for example with regard to the third runway at Arlanda Airport. The municipality set up certain criteria for air quality, noise and flight approach paths. A complete body of data must be available before the conditions can be formulated. The municipality can stipulate any conditions they want.

*Peggy Lerman:* There have been Government decisions where the municipality got "other things". The travaux préparatoires make it possible for example to allocate money for a road or something that has nothing to do with the project. There may be negotiations for compensation to the municipality in return for allowing the final repository to be located there.

2. *Can the lawyers expand on the veto issue? From Östhammar we asked the Government at what stage we should take a stand on the question of a veto. The reply was that if we hadn't answered yes during the environmental court hearings, the question should be put to the municipality after the reviews by the environmental court and the regulatory authorities. What does this mean in concrete terms? Can the fact that we express opinions on various issues be perceived as a yes?*

*Jonas Ebbesson:* There has to be an explicit expression of support. It is not clearly regulated when the issue must be dealt with by a municipality, but the Government may not make a decision on permissibility unless the concerned municipality has supported the application. Another thing is that municipalities may have strategic or tactical reasons for choosing when they take a stand.

### **Coordination, the roles of the regulatory authorities and the decision process**

3. *When SKI participates in the licensing process, the authority also examines radiation protection. SKI's regulations contain a rule stating that SSI's radiation protection requirements must be met. SKI appears to have a double role: technical and administrative. The administrative role involves examining both SSI/radiation protection and safety in one and the same process. Can you comment on this?*

*Jonas Ebbesson* agrees with the questioner and sees no problems in this.

*Peggy Lerman:* SKI has that role. But my concern that issues may be overlooked is due to the long duration of the project and subdivision into different "parts". Nor is there any formalized collaboration between the regulatory authorities. It is true that different Government bills say that coordinated examination is expected, but this is not obligatory.

4. *What happens legally if SKB's application is not approved under the Environmental Code? Does SKB have to start over with a new main alternative?*

*Saida Laârouchi Engström, SKB.* SKB has to act based on the reasons given for not approving the application. It isn't possible to speculate on what is to be done without knowing the reasons for rejection of the application.

*Jonas Ebbesson:* There are several conceivable reasons for denying a permit: 1. If the information in the EIS is insufficient and thus does not provide sufficient support for a decision. 2. If the consultation procedure was unsatisfactory when the EIS was prepared. 3. If the best available technology has not been chosen. 4. If the best site has not been selected. And – when it comes to decisions under the Nuclear Activities Act – if a safe method for final disposal does not yet exist. These conceivable reasons for rejection lead to different conclusions as to what is to be done next. Shortcomings in the content of the EIS can perhaps be corrected, but if the consultation procedure has been unsatisfactory it is very difficult, perhaps impossible, to “correct” the problem after the fact.

5. *The Environmental Code takes precedence over other legislation, and Chap. 1 Sec. 1 is governing. A cross-check against the environmental legislation comes in the final phase of the process. Is this suitable and proper?*

*Peggy Lerman:* The Environmental Code does not take precedence over other laws. It is to be applied in parallel with other laws passed by the Riksdag. It is, however, the broadest law when it comes to environmental considerations. I don't like the fact that the application for the encapsulation plant has come first, but it isn't illegal in any way.

*Saida Laârouchi Engström, SKB:* No one is expected to submit any comments until the whole body of material is available, in other words after we have submitted all applications in 2009. For us a combined examination of the whole matter is important. In order to facilitate the examination of a combined application under the Environmental Code, SKB has initiated an effort to study the

possibilities of changing the rules of jurisdiction so that all the facilities included in the KBS-3 system can be licensed jointly in one environmental court, even if the facilities are sited in different court districts. We don't want a situation where a final repository in Forsmark is examined by the environmental court in Stockholm, while the encapsulation plant and Clab in Oskarshamn are examined by the environmental court in Växjö.

*Jonas Ebbesson:* What Saida Laârouchi Engström has just described requires further explanation as to why SKB is nevertheless applying for a permit for the encapsulation plant when they don't know where the final repository will be located.

*Claes Thegerström, SKB:* The reason is that we think it would be good to start the review process as soon as possible. We are ready to render an account of how encapsulation will be done. It is an advantage that the competent authorities SKI and SSI have an opportunity to become acquainted with the process of encapsulation. But note that we don't ask anyone to make any judgements until all the supporting material is available.

*Margaretha Bengtsson,* the environmental court in Stockholm: The possibility outlined by Saida Laârouchi Engström probably already exists. I am referring to the provisions in the Environmental Code (Chap. 20 Section 8a) concerning referral of cases between courts. It should not be impossible for one environmental court to refer a case to another for adjudication.

## **Best available technology, best site, the Environmental Code and the Nuclear Activities Act**

- 6. The best available technology in the world that is industrially feasible shall be chosen, according to the Environmental Code. But it was previously said that the environmental court cannot demand that the applicant devote research and development to new methods. If it can be shown that the applicant has been negligent in his efforts to analyze, research and develop alternatives during a period of 15-20 years, doesn't this influence the issue?*

*Jonas Ebbesson:* The basis for examination under the Environmental Code is the existing technology. However, the examination may show that the best available technology leads to such consequences that a permit cannot be granted. That would mean that a new technology would have to be developed. The body that examines an application under the Environmental Code can also stipulate a “probationary period” with respect to a given technology condition, and then obligate the applicant to investigate the possibility of employing a given desired technology that may be possible. But the requirement to use the best available technology does not mean that the applicant must have developed a new technology. The Nuclear Activities Act goes further, however; it prescribes that a given safety level must have been achieved for a permit to be issued, and if that technology does not exist today the developer must continue his development work in order to obtain a permit.

7. *When the site investigations commenced, the best rock was sought for the best repository and the best durability. Now the discussion has shifted to where it seems to be enough to look for “sufficiently good” rock, and other factors may also be weighed in, such as the municipality’s openness or favourable disposition towards SKB. Is it true that a municipality that carries favour with SKB has greater chances of getting the final repository?*

*Jonas Ebbesson:* It shouldn’t be possible to curry favour with SKB. The site selected should be the best in Sweden. The assessment must be based on several factors such as geological conditions and certain transport aspects. It should be the best site based on the stated purposes: long-term safety, health protection and environmental protection. SKB must be able to explain why other sites have not been preferred to the one specified in the application.

*Björn Hedberg, KASAM:* Previously KASAM has drawn the conclusion that the concept “best possible site” has no meaning without a definition of what is meant by the concept and under what conditions it should be applied.

*Staffan Westerlund:* There is long-standing practice from the era of the Environment Protection Act regarding how the siting question is handled based on the technology that is ultimately expected. The law is clear: At what site can the purpose be achieved with a minimum of damage or detriment to human health and the environment and without unreasonable cost? If a departure should be made from this principle, a special rule would be introduced for waste disposal for nuclear fuel where the requirements are lower than for ordinary industries, rubbish tips and the like. The big problem is to prove that the best geological conditions exist in the two municipalities where there are already nuclear power plants and willing politicians.

8. *The KBS-3 method entails that the spent nuclear fuel must be retrievable. Is there legal support for this?*

*Björn Hedberg, KASAM:* The regulatory authorities do not require retrievability, nor is there anything in the law about this. But note that the concept “retrievability” is both vague and value-loaded. Obviously the alternative with deep boreholes entails that the nuclear waste will be more difficult to retrieve than in the KBS-3 alternative. But it isn't easy to retrieve the nuclear waste from a closed KBS-3 repository either without access to very large resources in the form of money, technology and time. What is meant by retrievability?

*Claes Thegerström, SKB:* A basic requirement we have to meet is not retrievability but long-term safe final disposal. This is stipulated in the Nuclear Activities Act. It means when the job is done, we and future generations should not have to take active measures for the repository to remain safe. At the same time it must be technically possible to retrieve a canister during the entire time the repository is being operated, even if a given tunnel is backfilled. We demonstrate this potential retrievability in the Äspö HRL. We also see it as a fundamental advantage that it is technically possible to retrieve canisters after closure, if future generations should want to. However, this requires large technical and financial resources. The most important thing after repository closure is to prevent illicit tampering with nuclear material and that the repository is safe in the long term. The requirements on pre-closure or post-closure retrievability are not expressed explicitly in

laws or regulations. KASAM has previously discussed the fact that there is an advantage in trying to combine long-term safety with future freedom of choice. It is a matter of striking a balance.

*Ingvar Persson, SKI:* The permit that will be obtained under the Nuclear Activities Act and the Environmental Code applies to what is specified in the permit: a final repository for spent nuclear fuel and nothing more. If the fuel is retrieved for other use than stipulated in the application, this is another operation than provided for in the permit and a new permit application is required. But repositioning individual canisters that are out of place does not require a new permit.

*Jonas Ebbesson:* There is nothing in the legislation prohibiting a final repository from being designed in a manner that facilitates retrieval. But it must be compatible with the safety requirements.

9. *What can be regarded as economically reasonable in terms of the Environmental Code's section on objectives? Is spending SEK 15 billion on a main alternative reasonable in relation to spending SEK 4 billion on a comparable alternative?*

*Jonas Ebbesson:* In the perspective of such a long-lasting activity as a final repository for nuclear waste, the best industrially available technology should be used. Accordingly, "best available technology" means the technology that exists and is industrially applicable. If there are several existing and feasible technologies then I find it difficult to imagine that the next-best one could be chosen, even if the costs were considerably lower. I think that in this case the requirement cannot be relaxed from "best available technology" by claiming that it is economically unreasonable to meet this requirement. In other words: if there are two technologies for the final repository and one is best, it should be chosen even if it is more expensive.

*Björn Hedberg, KASAM:* But if we choose between alternatives that don't exist today, how high can the costs be then?

*Staffan Westerlund:* If we assume that a better technology than any existing today will be available in the near future and we also have to give an account of the zero alternative, i.e. doing nothing, what

would the consequences be? The zero alternative then leads to second guessing and assessment of the probability that other technical solutions will become available within a reasonable future. The regulatory authority has to examine the advantages and disadvantages of choosing today's technology or waiting for an uncertain, but not unreasonable, future technology. It may be concluded that it is reasonable to continue interim storage and wait a few decades. This is a licensing issue. A concrete alternative could be not to do anything for now. There are no legal rules stipulating exactly how to weigh the pros and cons of using today's technology versus postponing the choice and continuing interim storage.

10. *Does the environmental court need proof that the KBS-3 method will work in all respects in order to pass judgement, for example that the right depth and the right barriers are chosen, such as canister and canister protection? Today there is no evidence that KBS-3 works in practice. Should a judgement be based on actual concrete evidence or on hopes, speculation and armchair studies?*

*Jonas Ebbesson:* It is up to the applicant to show that the requirements of the Nuclear Activities Act on technology are met by the chosen method. Naturally uncertainties may always remain, but SKB must show that the method and site are the best and do not cause significant disturbances, and then they have to take uncertainties and risks into account.

*Staffan Westerlund:* Everything SKB claims must be proved. But there are no requirements on proving that a repository is completely safe. If there are uncertainties they must be reported, after which it is a permissibility question whether the environmental court can grant a permit anyway. "Proof" doesn't mean showing by means of experiments how it works. If that were true, a project like this could never be evaluated.

## Examination remit and purpose

11. *The Government is supposed to consider the purpose, taking into account broader issues than just the final repository, for example energy policy, employment and societal benefit. What means does the Government to influence the decision?*

*Peggy Lerman:* Purpose should be kept separate from the Government's examination remit, which is determined by the rules of consideration in the Environmental Code. Within the examination remit the Government can take energy policy etc. into consideration, but this mustn't mean that the regulatory framework is set aside, since it has been established by the Riksdag. Within its remit the Government is supposed to determine whether the solution proposed in the application is the one that best serves the purpose. The purpose can be regarded as a sun outside the window, which is used as a source of light to examine the application. Logically speaking the purpose cannot be forced into the examination remit.

*Jonas Ebbesson:* I would also like to keep purpose and examination remit separate. The purpose is a part of the Government's examination. The employment issue is of some, but very little, importance. But it is of no legal importance.

12. *How can it be ensured that purposes relating to long-term environmental safety are given precedence over project goals in siting? Can the Government do this in decisions on RD&D-07? Can KASAM and SKI give signals to the Government to this effect?*

*Peggy Lerman:* The problem has already been solved; it says in the law that the EIS must be related to the purpose.

13. *The EU's view of waste as a resource for nuclear activities: Is it conceivable that in the future the EU's societal perspective on the purpose of final disposal could intervene in the Swedish handling of final disposal? Who owns the Swedish nuclear waste? Can non-Swedish actors ultimately cite societal purposes that affect how the Swedish waste will be managed?*

*Jonas Ebbesson:* There is always a risk, or a possibility, that Swedish nuclear waste in the future might be shipped abroad and/or that we might in the future bring foreign waste into Sweden. Legislation in the future, in perhaps 50 or 100 years, might be amended to make this possible. If society develops in a certain way, a different legal situation may arise than the one existing today. But today any member state can decide not to take waste from other countries and that the country's own waste must be kept within its borders. This applies regardless of who owns the waste.

*Carl-Johan Nässén, Energy for Östhammar, EFÖ:* The Euratom Treaty stipulates that the EU owns the uranium and should distribute it to the member states. There is also a directive from 1985 regarding import and export of waste, but it explicitly excludes nuclear waste. Furthermore, spent nuclear fuel is by Swedish definition not nuclear waste until it has been placed in a final repository.

*Ingvar Persson, SKI:* The Euratom community's right of ownership and associated right of option is included in the rules regarding a supply system for uranium that were adopted in the Treaty in 1957. It was almost immediately clear that the prerequisites for the supply system did not exist. It was soon decided to adopt "simplified procedures". The rules in the supply system are such that they can scarcely be applied today. The "right of ownership" spoken of in the treaty is therefore of no formal or practical importance.

## **EC's EIA directive and Swedish legislation**

14. *Staffan Westerlund points out that according to the EC directive, a special competent authority should be responsible for the EIA process. Swedish legislation states that the applicant, in this case SKB, is responsible for the EIA process. Westerlund says that this departure from the basic idea may entail problems. What does the EC directive's EIA requirement regarding a competent authority mean concretely for an ongoing EIA process?*

*Staffan Westerlund:* According to the directive there shall be a competent authority that carries out the EIA. Sometimes this is stated explicitly, but usually it is understood. The applicant's, or the developer's, duty according to this directive is to supply information for the EIA. The process that is currently under way in Sweden conflicts with the EC directive's concept of a competent authority that is responsible for the EIA but not the information required for it.

*Peggy Lerman:* This time I would like to defend the Swedish system and do not agree with Staffan Westerlund. We have designated authorities in the Swedish system. The County Administrative is responsible for ensuring that the EIA has the right scope. Together with the environmental court's and others' review, this means that we comply with the EC directive's requirements.

*Staffan Westerlund:* If Peggy were right, one of these authorities would have to have formal responsibility for the process as such. The environmental court would then have a function that it doesn't have today, namely to make sure that the EIA is carried out properly, rather than as now reviewing it after the fact to see if this has been the case.

*Jonas Ebbesson:* I don't share the view that the EC's EIA directive requires that the authority must carry out the EIA. On the contrary, it is the developer who is responsible for compiling the necessary information for the EIA. Nor am I convinced that the authority must really follow the EIA process continuously from the start in order for us to comply with the EC directive. However, the authority is responsible for assessing and judging whether the requirements on documents and process have been satisfied. If such a review is performed initially, that is sufficient to comply with the directive.

What I see as being the foremost importance of the EC directive is that it formulates requirements on both content and scope as well as on how the EIA is to be carried out. In the end, the environmental court, SKI and the Government must all judge whether the information is of the quality required by the directive. This must also be done in the event of a re-examination.

It is not enough that the EIS states that consultations have been held. It is important that those who have participated and those who are affected express what they have participated in and how

they have defined the problems. The problem formulation and the way of understanding the matter is an important part of the consultations. Participants in the consultations must not only have received information, but must also have had an opportunity to discuss the material issues.

15. *Is it possible to bring the matter before the European Court of Justice, and could the European Court of Justice make a decision that the process must be redone from the start with a competent authority responsible for the EIA process?*

*Staffan Westerlund:* It is not possible to appeal to the European Court of Justice. If someone thinks there is a conflict between the directive and what is happening in a member state, he should go to the European Commission, which determines whether it wants to take the matter to the ECJ. In other words, it is not like at the European Court of Human rights. The EC directive has direct effect, i.e. it is applied directly by the courts in each country. The courts have an obligation to examine the matter against the EC directive, and it is therefore my prediction that this will be a judicial application issue in Swedish courts, since they are subject to EC law.

*Jonas Ebbesson:* I concur that the courts have to comply with EC directives regardless of what Swedish legislation says. If a Government decision is made which the Supreme Administrative Court finds does not comply with the EC's EIA directive in this question, the Supreme Administrative Court is supposed to overturn the decision. But I don't read the EIA directive in that way, that it has to be a public authority that compiles the information for the EIA/EIS. On the other hand, high demands are made on the review and the quality assessment of whether the EIA is adequate or not.

*Staffan Westerlund:* We are in agreement that the applicant should compile the information for EIA. But the actual responsibility for the EIS and the EIA rests with the competent authority. A parallel: The authority is a kind of preliminary investigator who determines what is to be included and makes sure the process works. But the background information should come from the applicant, wherever possible.

16. *In the light of the discussion between the lawyers about who is supposed to prepare an EIS: Has SKB proceeded improperly in its EIA work?*

*Margaretha Bengtsson, Stockholm Environmental court:* No. When the environmental court rules on a matter, it also approves both the content of the EIS and the procedure for the EIA; that the requirements on consultations are met, that enough alternatives have been included, etc.

*Staffan Westerlund:* The “direct effect” that follows from the EIA directive entails an obligation for the environmental court to apply the legislation. It may be a problem that there is no public authority in Sweden that presides over the EIA process, but merely determines after the fact whether the process has been carried out satisfactorily or not.

17. *How does Staffan Westerlund think SKB should carry out the EIA so that it complies with the EC directive on EIA in order to avoid a problem if the matter is ever examined under EC law?*

*Staffan Westerlund:* I recommend that SKB hire an external consultant, perhaps a retired judge, who is given full freedom to preside over an EIA process and carry out an objective inquiry. At the same time, SKB should stop being afraid that the KBS-3 method will turn out to entail problems. SKB can thereby switch over from informing to being informed. In all likelihood, all concerned parties will then have confidence in the process and the background information will be good.

*Claes Thegerström, SKB:* We probably won't take all parts of Staffan's recommendation under advisement. Regarding fear of error: We are in fact driven by a certain amount of fear that something is wrong with KBS-3. The safety analysts must therefore find any weaknesses in the concept. It is SKB's responsibility to test the viability of its concepts. SKI also has regulations regarding self-inspection and independent safety review within the organization before the matter proceeds to the regulatory authorities for assessment.

18. *Can the Environmental Code be said to mislead the developer who produces his own EIS and uses this as a supporting material to apply for a permit for a polluting activity?*

*Staffan Westerlund:* I wouldn't use the word "mislead". But the Environmental Code does not necessitate the narrow process that could be read from the Code. It allows the developer to do more. The Environmental Code and Swedish legislation could be said to be misleading in one respect: Those who are not experienced in this legal area are not made aware of the fact that there is a convention and an EC directive, which has the same validity as Swedish law and takes precedence over the Environmental Code in case of conflict.

### **Discussion of the consultation procedure when an environmental impact statement is prepared**

*Staffan Westerlund:* There are problems with today's way of conducting the consultation procedure. Many believe that SKB is locked into the KBS-3 concept and that this influences the way the agenda is set at the consultation meetings. If SKB wants to avoid this, another approach has to be chosen for the consultation procedure. If a restrictive attitude is not SKB's intention, the procedures should be reviewed. A good EIA process is one where everyone goes home from the EIA meetings feeling that all questions have been included in the agenda.

*Saida Laârouchi Engström, SKB:* We base our reasoning on existing law, not wishful thinking. Our ambition is to see the legal requirements as minimum levels and to hold better consultations than has been the case in other projects. The county administrative boards, the regulatory authorities and municipal representatives, as well as the public, follow every step we take. What will be presented in 2009 will not come as a surprise to anyone, on the contrary. We also consult about the consultations. Many of us don't recognize the consultation process as Staffan Westerlund describes it here.

*Staffan Westerlund, SKB*: SKB should not have the right to set the agenda and the current process doesn't recognize this. This should be brought before the environmental court.

If SKB makes a wrong judgement and this is subsequently brought before the Supreme Administrative Court, which is impressed by the fact that the European Commission has criticized Sweden because the country's courts don't follow EC law; then you will have lost years and perhaps billions of kronor.

*Maria Kuylenstierna, MILKAS*: Yes, there is a lock-in to a method in the EIA consultations, which we have pointed out several times. The consultations on site and method that took place after the KASAM seminar were limited when it came to presentation of the alternatives.

Even if there were a Riksdag decision to focus on a geological repository, it is best for the process to maintain an openness until a decision has to be made. We have put it to the authorities that they should consider other types of repositories than geological ones before making a final decision. Can SKI and SSI comment as to whether other methods than geological ones should be considered?

*Ingvar Persson, SKI*: It is a prerequisite according to both the Environmental Code and the Nuclear Activities Act that EIA should have the necessary content and scope to permit the application to be examined under both laws. We are supposed to prepare the matter for the Government's examination and thereby judge whether this is the case. In doing so we will also consider viewpoints from the public and reviewing bodies.

*Elisabeth Ablin, MILKAS*: We are not happy with SKB's role. Time after time, such essential issues as radiation protection and safety are not taken up during the consultations. And when safety issues come up, we are not allowed to participate; I am thinking of the presentation of SR-Can. A broad dialogue is prevented. The process has clear faults; we are a part of the public and are both a special interest and a general interest. The environmental movement is knowledgeable and can contribute. Too many decisions and choices are being made on the fly. The application for the encapsulation plant finalizes the choice of a method which we oppose.

*Saida Laârouchi Engström, SKB:* This is simply not true. Everyone can read the minutes from the consultation meetings on our website, and all consultation parties are welcome to suggest topics for consultation. It is not true that they have been excluded from the discussion of safety issues. All conservation and environmental organizations that receive money from the Nuclear Waste Fund can meet us and our experts to discuss any issue at any time. They have declined and failed to get in touch.

*Björn Hedberg, KASAM:* This is an ongoing conflict. But SKB must have a right to have its own meetings. Environmental and other organizations have a right to read the minutes and other materials and to consult and discuss. It should be possible to agree on this better than has been the case so far.

*Jonas Ebbesson:* A plea to SKB and others: Document everything! The European Court of Justice applies the directive and interprets strictly what it says about form and content. Swedish law tends to accord EIA greater importance than previously. There are examples from the Superior Environmental Court where applications have been rejected because consultations have not been held correctly. The whole idea is that consultations should take place at an early stage, and if this isn't done it is impossible to repair.

*Mikael Jensen, SSI:* I think there are two questions here. One has to do with what an EIS contains and whether there is simultaneously, or in close connection, an unofficial document. Another question is that the environmental movement seems to want SKB to investigate another alternative technology, in other words that there should be two parallel alternatives to choose from. This has been discussed in the framework of the RD&D process, but the Government does not think the Environmental Code should be interpreted as requiring two parallel alternatives.

*Inga Carlman:* The problem with the consultations is that we did not have a legal process from the start under the Natural Resources Act; it came with the Environmental Code. Everyone involved wants to define what took place before the Environmental Code as consultations, but retroactively. But according to SKB's lawyers there could be no consultations before there was a project. This creates problems. Participants in the old process are still involved

in the current process and are trying to repair the old one. SKB has had problems before with the fact that they have not had support in the law when it comes to the process. SKB has tried to control things its way, as is only natural for an industrial company. If they had instead had an independent EIA investigator, SKB would have saved time and presumably also money.

*Saida Laârouchi Engström:* We who have to manage and dispose of the waste must never forget the underlying purpose, and we realized that long before the formal consultation procedure came into being. We had always had the ambition to dispose of the waste in the best way possible. The goal of the consultations is to use everyone's collected resources to compile as much information as possible in the form of an EIS.

## SKB's permit application for an encapsulation plant

19. *Can SKI and SSI be forced into three years of review work? Do the regulatory authorities have any right or obligation to reject the application until it is complete and includes a finished EIS according to the Environmental Code? Are there any grounds for Jonas Ebbesson's fears that SKI has to put in three years of work in vain?*

*Ingvar Persson, SKI:* We see no reason to reject the application without reviewing the parts that can be reviewed, for example relationship to CLAB, common safety systems, etc. Supplementary information will be requested as needed so that the complete picture for a final repository can be assessed. We are not circulating the application for comment now, but just for information purposes without soliciting opinions, since no opinions can be offered before a complete body of material is available. It must first include an EIS for both a final repository and an encapsulation plant to enable a decision to be made on a possible final repository. We hope we can send out the complete proposal together with the environmental court.

*Saida Laârouchi Engström, SKB:* A comment on why SKB is conducting a stepwise procedure and applying for a permit for the encapsulation plant first. SKB considers that the encapsulation

plant, as a nuclear facility, needs to be focused on in the review work. It has been noticed during the consultation procedure that the discussion around the final repository tends to crowd out a discussion of the encapsulation plant. We intend to build two facilities and both are equally important, even though the encapsulation plant is a step in the total solution, i.e. the final repository system. The body of material on the encapsulation plant is large. The application fills 11 binders and the background material 53 binders with references. The material that will be submitted in 2009 is expected to be 4-5 times greater. We want to give the regulatory authorities time to review this large body of material.

*Jonas Ebbesson:* This supports my criticism. SKB is doing the opposite of what they should in the EIA process. These 11 binders cover only a small portion of the whole picture. Wouldn't it have been better to first look at the main facility and be clear about the siting of the final repository? Even if the encapsulation plant has been overlooked, the final repository is the most important facility. The design of the encapsulation plant is surely affected by the design of the final repository and where the final repository is located? SKI should wait before starting the assessment of the application until they have received an application for the whole system. The risk is that they will informally lock themselves into a given method and site.

*Claes Thegerström, SKB:* We believe there are strong reasons for locating the encapsulation plant adjacent to Clab in Oskarshamn, regardless of whether the final repository ends up in Oskarshamn or Forsmark. This is our choice of site for the encapsulation plant.

*A discussion followed* as to whether SKB's application for the encapsulation plant should be regarded as preliminary or as a finished document. Peggy Lerman wondered if the EIS in the application for the encapsulation plant was "a draft version".

*Claes Thegerström from SKB* emphasized however that the application for the encapsulation plant contains a large body of background material and that the EIS is only a part of it. The application focuses on nuclear technology and is complete to this extent and not to be regarded as "a draft".

*Saida Laârouchi Engström, SKB*, clarified: “The EIS we have appended to the application is sufficient to assess the consequences of the encapsulation plant. It is not a draft in the sense that anything is missing. The EIS that will be submitted in 2009 will be based on the one that has already been submitted, but SKB will add the rest of the final repository system.

Engström also pointed out that consultations are still being held and if any viewpoints come from the consultation parties or regulatory authorities that necessitate any additions, SKB will do this.

*Josefin Päivö Jonsson from SKI* said that the Inspectorate doesn't regard the submitted application as complete, since SKI will base its statement of comment on the complete EIS that is submitted in 2009. They will not take a stand on the encapsulation plant before they have seen a complete EIS.

*Staffan Westerlund*: An EIS should also cover indirect consequences of the project, including the effects of the final repository as such. If the EIS that has been submitted does not meet this requirement and is not supplemented, SKI will reject the application. In view of today's discussion I am curious whether the regulatory authorities and SKB are secretly in collusion to arrive at joint standpoints on this project. The whole idea of an EIS is that when a decision is approached for the first time, the whole picture should be elucidated. What is going on here is an attempt at a permissibility inquiry from the safety viewpoint and certain environmental aspects, not an EIS.

*Björn Hedberg, KASAM*, wondered if SKB's approach could not provide better opportunities for regulatory authorities and environmental organizations to examine and give their viewpoints on what SKB has delivered. Could a better body of material have been furnished for further consultations?

*Staffan Westerlund*: There are certain possibilities. But an EIS must address all issues that could be related if a decision is to be made. This has not been submitted now. The same effect would be achieved if SKB published all material and invited the parties to meetings and discussions.

*Jonas Ebbesson:* SKI's way of handling the application sounds correct. But my criticism remains valid. Even if SKB considers that there are convincing reasons for siting the encapsulation plant next to Clab, the supervisory authority may conclude that another siting is better if the final repository is not located in Oskarshamn. This may entail several years of work without knowing where the "main activity", a final repository, will be located. Submitting an application for the encapsulation plant at the same time as an application for the final repository would have been clearer, not least for the public.

# Reflections from a municipal perspective, *Krister Hallberg*

*Krister Hallberg from Oskarshamn Municipality* reflects on the municipality's role in the decision process. In Oskarshamn's case this process has been going on for 40 years, since the nuclear power plant was built, and with regard to nuclear waste since the 1970s with the advent of the interim storage facility for nuclear waste, Clab.

In 1992, SKB said that they did not want to site an encapsulation plant at Clab. At this point the municipality started to lobby the regulatory authorities and the ministry to get money to start a project aimed at making the municipality a qualified party in the nuclear waste discussion. The municipality was given a grant for this purpose and discussions began with SKB, SKI, SSI and the Ministry of the Environment.

The municipal representatives met with different reactions from SKB and the regulatory authorities, both suspicion and a positive response. SKI volunteered expertise, while the Ministry of the Environment did not want the regulatory authorities to participate in the process until an application for a final repository had been completed and submitted. Hallberg thought this was problematical since it was the regulatory authorities who had the tax-funded expertise and the municipalities needed to draw on their knowledge. But the regulatory authorities came to participate in the discussions.

“Another problem was that they spoke about the nuclear waste as if it was a Stockholm concern and the waste was to be disposed of there. And SKB thought that we needed a ‘green card’ to participate in the discussion of the nuclear waste. We quickly got

one, lowered our handicap and went on to become qualified discussion partners,” he says.

The decision procedure was unclear from the start. Hallberg says that he himself, being accustomed to municipal work, expected there to be a structure when the siting process started, but he found none in the nuclear waste issue.

He also thinks it was strange that SKB started looking for a site for the final repository before they were sure which method would be used and says that it should have been the other way around. The municipality did not get involved in the method question, since they did not feel they were qualified for this. But they did want to have a clear decision process and find out how the “veto valve” should be interpreted.

“We wondered whether it wouldn’t ultimately be the state who would select a site, regardless of our thorough work at the local level. We couldn’t accept that division of roles,” he says.

Hallberg thinks that the size of the project is a problem; it keeps on growing, bringing in new participants all the time. New people, politicians and private citizens keep coming into the municipal organization and have to familiarize themselves with the issue in a short time. Politicians and private citizens participate in their free time and are therefore don’t have the same opportunities to “get up to speed” compared with regulatory authorities and SKB, who work professionally with the project.

Hallberg also points out that there is imbalance in the consultation process. When a project is small in scope, the project owner’s willingness to engage in consultations is great. But there is not much to discuss. There are no complete proposals to consult about. When the project owner has come farther with his plans and also become fixed in his opinions, the consultations are less likely to have any influence on him, at the same time as those affected become more interested in being consulted. The more detailed and concrete the project becomes, the greater the chances are that those affected will understand and have an opinion. At the same time the project becomes increasingly difficult to influence.

Oskarshamn’s influence in the debate has waxed and waned during the thirty years the waste issue has been discussed. The municipality played a major role in the 1970s when CLAB was established, after which its status waned. When SKB proposed Oskarshamn as a site for the encapsulation plant, its importance grew once again. The municipal representatives were once again a

part of the process and had influence. Hallberg considers the municipal inhabitants to be very important in the process. The final repository will be built in a municipality outside of Stockholm.

“But the debate is now being taken over by Stockholm again. Lawyers and regulatory authorities are located in the capital and our influence is waning. We are trying to do something about this,” he says.

Hallberg summarizes the municipal perspective in the following points:

- A complex project of very long duration.
- A municipal ambition to participate and influence.
- A municipal ambition to play the central role.
- A municipal ambition to educate politicians and the public.
- A municipal ambition to see to it that the local decision-makers have both the knowledge and the information to make a well-founded decision.



## KASAM's view of remaining unclear points

The seminar on the decision process around final disposal of spent nuclear fuel was mainly concerned with legally regulated issues. The presentations and the discussion shows that there is room for different interpretations of the legal rules and that certain points are unclear. Of these a number can probably be cleared up now, while others will not find a solution until the actual preparation and decision process.

But a decision regarding a permit for final disposal of spent nuclear fuel from the Swedish nuclear power plants is not merely being a question of how a number of legal rules should and can be applied. Experience from decision processes in other big projects and the application of the EIA system shows that other factors also play a role in the decision-making. The decision and planning process in the nuclear waste project will to a great extent be influenced by considerations of technology, economics, law, ethics and politics. The public's attitude to the project may therefore de facto affect both the decision process as such and the nature of the decisions.

Considering the scope of the final repository project, the room for interpretation in the regulatory framework and experience from decision-making in other major projects, it is of great importance that the decision-making rules be as clear and unambiguous as possible. Of equal importance is that various stakeholders are well informed regarding the implications of these rules. The goal of the KASAM seminar was to clear up any unclear points in the legal and formal premises. KASAM feels that after the seminar there is reason to reflect on whether there are any additional points around the decision process that need to be cleared up.

With SKB's application of 8 November 2006, the decision process surrounding final disposal of spent nuclear fuel has entered a new phase. This application concerns a permit under the Nuclear Activities Act to build an encapsulation plant for the spent nuclear fuel adjacent to the existing interim storage facility for spent nuclear fuel in Oskarshamn Municipality. The application has been submitted to the Swedish Nuclear Power Inspectorate, which is supposed to prepare the application for a decision by the Government.

As already mentioned, SKB intends to submit in 2009 the additional applications that are needed for the Government to arrive at a decision on the question of final disposal of spent nuclear fuel from the Swedish nuclear power plants. These applications will seek a permit under the Nuclear Activities Act to build a final repository for spent nuclear fuel on a not-yet-designated site and permits under the Environmental Code for both the encapsulation plant and the final repository.

From the presentations given and the discussion held at the seminar – and from the viewpoints subsequently submitted by the seminar participants – KASAM concludes that there are a number of questions relating to the decision process that has now been initiated which need to be further elucidated. In this report, KASAM singles out questions in four main areas:

- *Coordination” in the preparation of the matters by administrative authorities, environmental courts and the Government Offices*

An account was given at the seminar of the legal rules regarding the preparation of these matters by administrative authorities and environmental courts. KASAM believes there is reason to provide information on these rules to the public. This information should in particular shed light on how the handling of these matters will be coordinated between the administrative authorities and the environmental court.

The question of “coordination” in the preparation of the matters within the Government Offices (for a Government decision) was addressed in connection with the passage of the Environmental Code. In a Government Bill proposing certain consequential changes in the Nuclear Activities Act (Gov. Bill 1997/98:90), the Government addressed the question of how the

Government's examination under the Environmental Code of the permissibility of a given activity should be related to the Government's licensing under the Nuclear Activities Act.

The Government stated the following in the Bill (p. 271):

It can be presumed that the environmental court's processing of the matter under the Environmental Code takes place in parallel with a preparation of the licensing matter by SKI under the Nuclear Activities Act. Permissibility assessment under the Environmental Code and licensing should thereby be coordinated so that both the environmental court and the concerned municipality have access to the review reports from the competent authorities in the nuclear activities matter in connection with their handling of the permissibility assessment under the Environmental Code. The Government's final preparation and decision under the two laws should also be coordinated, unless the Government has delegated the decision on the nuclear activities matter to an authority. After permissibility assessment under the Environmental Code by the Government has been concluded, the matter is returned to the environmental court if a permit is required under the Environmental Code, at which point all emissions and disturbances from the facility are examined. The regional environmental court is then the examining authority of the first instance.

Jonas Ebbesson stated in his memorandum to the seminar that the Government has a certain amount of freedom to coordinate the decision processes under the Environmental Code and the Nuclear Activities Act and to decide how the public is to be given an opportunity to participate at this level as well. He continues (memorandum p. 13):

Neither the Environmental Code nor the Nuclear Activities Act contains any procedural rules that are to be applied by the Government. The handling of the matter by the Government is not formally covered by the Administrative Procedure Act either. The Instrument of Government in the Swedish Constitution does, however, stipulate some minimum requirements. The Government shall "observe objectivity and impartiality" in its assessment. In addition, the Government shall obtain the necessary opinions from the public authorities concerned, and organizations and private persons shall be afforded an opportunity to express an opinion as necessary. In this way the Government can request supplementary opinions from authorities, but also from applicants, interest organizations and private persons which it considers necessary to be able to make a decision. The Government can also arrange additional hearings or equivalent meetings if it so desires.

KASAM believes that a more detailed description is needed of how the preparation of the applications under the Nuclear Activities Act and the Environmental Code in the Government offices will take place and how the different examinations should be coordinated. Examples of questions that need to be clarified are: What does the need for coordination entail? Coordination of what? Coordination for the purpose of achieving what?

It should be possible to base such a description on experience from the examination of several matters during 2005 and 2006 where the Environmental Code and the Nuclear Activities Act have been applied in combination. These matters involved the environmental licensing of the activities at certain nuclear power plants and permit applications under the Nuclear Activities Act for power increases.

- Varying uses of certain terms

There are a number of expressions and terms that are often used in the public debate concerning final disposal of spent nuclear fuel without it being clear from the context whether they refer to requirements set forth in a statute (act, ordinance or regulation) or more generally formulated preferences. There are also discussions of whether the same terms are used in the same sense in different contexts. This situation creates a potential for unnecessary misunderstandings.

The meaning of a number of such expressions and terms, and how they are used, needs to be defined more exactly. The following are examples, but there may be more:

- *Alternative methods, alternative designs and best available technology.*
  - *Alternative sites, suitable site and best site.*
  - *Optimization.*
- *The purpose.*

At the seminar, Peggy Lerman said that we must distinguish between what is meant by “the purpose” and what is meant by “project goals”. It was claimed that the Government and the administrative authorities need to show what they perceive to be the underlying purpose of the final repository.

In the permissibility assessment under the Environmental Code the formulation of “the purpose” of the proposed activity is of crucial importance. For this reason a discussion was held at the seminar as to what “the purpose” can be considered to be. The purpose of final disposal of spent nuclear fuel may seem to be self-evident at first glance, but the discussion at the seminar showed that a more thorough analysis may need to be made.

A suitable point of departure for such an analysis is the statement of purpose SKB formulated under the heading “3.1 Aim and purpose” in Appendix A to the aforementioned application of 3 November 2006, where it says (p. 7):

SKB's purpose is to create a final repository for spent nuclear fuel from the Swedish nuclear reactors within Sweden's borders and with the voluntary participation of the concerned municipalities. The final repository will be built, operated and closed with a focus on safety, radiation protection and environmental considerations. The final repository will be designed to prevent illicit tampering with nuclear fuel both before and after closure. Long-term safety will be based on a system of passive barriers. The final repository will be established by those generations that have derived benefit from the Swedish nuclear reactors and designed so that it will remain safe even without maintenance or monitoring.

“The KBS-3 method fulfils this purpose. SKB will thereby apply for permits under the Nuclear Activities Act and the Environmental Code for the facilities that require a permit and that are a prerequisite for the final disposal of spent nuclear fuel according to the KBS-3 method...”

It may be suitable to analyze to what extent these formulations concur with and/or are based on formulations found in various statutes (acts, ordinances and regulations) and in statements of a policy nature that have been made by the Riksdag, the Government, the supervisory authorities or other actors in different contexts ever since the first nuclear power plants were taken into service in the early 1970s.

- *Examination by the environmental court*

Both the encapsulation plant and the final repository will be examined under the Environmental Code. Since these two facilities comprise an integral system for final disposal, it is inappropriate to assess them separately. Can one and the same environmental court

deal with both of these matters, even if the final repository and the encapsulation plant are sited at different locations in the country?

As explained above, SKB has applied for a permit under the Nuclear Activities Act to build an encapsulation plant in Oskarshamn. When SKB subsequently applies for the necessary permit under the Environmental Code, the matter will be dealt with by the environmental court in Växjö. The same environmental court will also handle an application for a permit for a final repository under the Environmental Code, if SKB chooses to locate it in Oskarshamn. But if SKB instead chooses to site the final repository in Forsmark, how will the application be handled then? If the matter is dealt with by the environmental court in Stockholm, how can a combined examination of the entire final repository system be ensured then? These were questions that came up at the seminar.

The Environmental Code contains provisions that permit an environmental court to refer a case to another environmental court under certain conditions. EC Chapter 20 Section 8a thus states:

An environmental court may refer a case for joint consideration to another environmental court if the other environmental court has before it another case that is closely related to the first-mentioned case and the referral does not entail substantial inconvenience for either party. An environmental court may also refer a case to another environmental court if the other environmental court has previously examined an application case pertaining to the same activity as the first-mentioned case.

Referral of cases between environmental courts may also take place if other special reasons exist and it does not entail substantial inconvenience for either party.

More detailed regulations concerning referral of cases between environmental courts are issued by the Government.

In KASAM's opinion there are strong reasons for having one and the same environmental court conducting the environmental examination of the different facilities in a system for final disposal of spent nuclear fuel. It then has to be determined whether the provisions of EC Chapter 20 Section 8a, first and second paragraphs, are applicable in this case or whether the Government needs to issue the additional regulations referred to in the third paragraph. In any case, it would appear to be appropriate to enlist the support of both parties, including environmental organizations,

and the courts in question for the procedure before applications are submitted.

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KASAM considers it vital to clarify the unclear points that have been identified here. To the extent this can be done within the framework of KASAM's activity plans, KASAM is willing to contribute.

In November 2006, Svensk Kärnbränslehantering AB (the Swedish Nuclear Fuel and Waste Management Co), which is owned jointly by the owners of the Swedish nuclear power reactors, submitted an application for a permit under the Nuclear Activities Act to build an encapsulation plant for spent nuclear fuel adjacent to the existing interim storage facility in Oskarshamn. In 2009 SKB plans to submit applications for permits under both the Nuclear Activities Act and the Environmental Code to build a final repository in the municipality of either Oskarshamn or Östhammar.

Many questions are asked regarding how decisions are made on permits to build these facilities. It is ultimately up to the Government to make a decision on these applications, but first the regulatory authorities and the environmental court must conduct a detailed review. What laws are to be applied, do they contain suitable provisions, and do the provisions of different laws conflict with each other? Where do we stand today when it comes to this decision process?

On November 15, 2006, KASAM arranged a seminar on the theme “Final disposal of spent nuclear fuel – regulatory system and roles of different actors during the decision process” in order to try to get answers to these questions. This booklet is a report from this seminar.

KASAM – The Swedish National Council for Nuclear Waste – is an independent scientific committee within the Ministry of the Environment. Its task is to advise the Government in matters relating to nuclear waste and the decommissioning of nuclear installations. KASAM’s members are independent experts within different areas of importance for the disposal of radioactive waste, not only in technology and science, but also in such areas as ethics, the humanities and the social sciences.

KASAM’s sphere of activities also includes offering a forum for dialogue in the nuclear waste issue. An example of such activities is arranging seminars and hearings.

This report and the presentations are available on our website [www.karnavfallsradet.se](http://www.karnavfallsradet.se).