Report 2011:2e from the Swedish National Council for Nuclear Waste

KÄRNAVFALLSRÅDET
Swedish National Council for Nuclear Waste

SWEDISH GOVERNMENT INQUIRIES

Licensing under the Environmental Code and the Nuclear Activities Act of a final repository for spent nuclear fuel

In March 2011, the Swedish Nuclear Fuel and Waste Management Co (SKB) submitted applications under the Environmental Code (1998:80) and the Act (1984:3) on Nuclear Activities (the Nuclear Activities Act) for licences to build, own and operate a final repository for spent nuclear fuel in Östhammar Municipality. The applications also pertain to a facility in Oskarshamn Municipality where the fuel will be encapsulated prior to deposition in the final repository.

The application for a licence under the Environmental Code was submitted to the Land and Environmental Court at Nacka District Court, while the application for a licence under the Nuclear Activities Act was submitted to the Swedish Radiation Safety Authority.

The purpose of this report is to describe how the applications will be handled from when SKB begins the work of preparing an environmental impact statement for the activity up until review of the application. In their description of the legal process, the authors highlight some problems in the application of the legislation which the regulatory authorities must decide how to deal with.

The report can be downloaded at www.karnavfallsradet.se/en and can also be ordered by emailing to karnavfallsradet@gov.se.

The Swedish National Council for Nuclear Waste—Kärnavfallsrådet—is an independent scientific committee within the Ministry of the Environment. The members of the Council possess expertise in technology, science, ethics and the social sciences.

The Council's mandate is to advise the Government in matters relating to nuclear waste and the decommissioning of nuclear installations. The Council is supposed to examine and elucidate important issues in the nuclear waste field, for example by holding hearings and seminars, so that it can make well-founded recommendations to the Government.

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Translation of Report 2011:2

Stockholm 2013

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

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This report can be ordered from the Swedish National Council for Nuclear Waste's secretariat, e-mail: karnavfallsradet@gov.se or download from www.karnavfallsradet.se

Text processing and layout: Government Offices of Sweden, Office for Administrative Affairs/Committee Service Unit

Cover: Jonas Nilsson, Miljöinformation AB.
Cover photo: Mikael Damkier/Pix Gallery.

Translated into English by Richard Nord Translation.

Printed by Elanders Sverige AB
Stockholm 2013

ISSN 1653-820X

Licensing under the Environmental Code and the Nuclear Activities Act of a final repository for spent nuclear fuel

Report for the Swedish National Council for Nuclear Waste

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Contents

Purpose of the publication

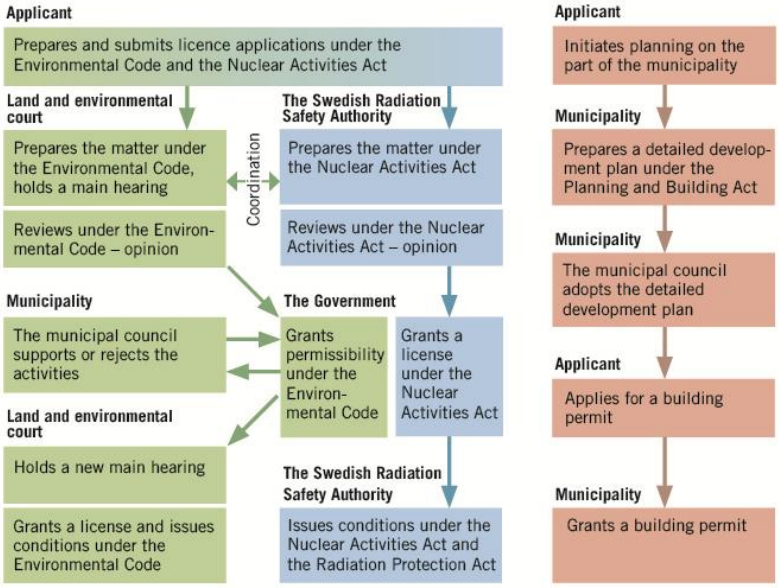
In March 2011, the Swedish Nuclear Fuel and Waste Management Co (SKB) submitted applications under the Environmental Code and the Act (1984:3) on Nuclear Activities (the Nuclear Activities Act) for licences to build, own and operate a final repository for spent nuclear fuel in Östhammar Municipality. The applications also pertain to a facility in Oskarshamn Municipality where the fuel will be encapsulated prior to deposition in the final repository. Together, these facilities comprise a coordinated system for management of spent nuclear fuel in Sweden.

The application for a licence under the Environmental Code was submitted to the land and environmental court at Nacka District Court, while the application for a licence under the Nuclear Activities Act was submitted to the Swedish Radiation Safety Authority.

The purpose of this publication is to describe how the applications will be handled from when SKB begins the work of preparing an environmental impact statement for the activity up until review of the application. We have not read SKB's application, and we are not passing any judgement. In our description of the legal process, we highlight some problems in the application of the legislation which the regulatory authorities must decide how to deal with. But this is no legal analysis on our part. That would require more in-depth studies.

Schematically, the process for licensing under the Environmental Code and the Nuclear Activities Act can be described as follows. It can be pointed out regarding the right-hand column in the diagram that Östhammar Municipality has adopted a detailed development plan that includes the land area where the final repository is planned to be located.

Figure 1 Process for licensing under the Environmental Code and the Nuclear Activities Act[1]



The description of the licensing process will be based on this diagram. But first the fundamental legal rules that govern the process are described in brief.

The fundamental laws

Three laws govern the licensing process

Licensing of facilities for activities involving radiation in Sweden is governed by the provisions of the following laws:

- The Environmental Code (1998:808),
- The Act (1984:3) on Nuclear Activities (Nuclear Activities Act)
- The Radiation Protection Act (1988:220)

[1] See SOU 2011:18, p. 369.

The Environmental Code aims to protect the environment and human health against environmentally hazardous activities. A final repository for spent nuclear fuel is defined by the Code as an environmentally hazardous activity. The provisions of the Code concern the safety of the final repository and radiation protection, as well as noise, light and other factors that could have harmful effects on human health and the environment.

The Nuclear Activities Act is aimed at ensuring safety in the final repository and fulfilling Sweden's commitments to non-proliferation, while providing oversight and insight into this activity. This Act has the character of a framework law whose concrete content is provided by regulations issued by the Government or the authority designated by the Government The Government has authorized the Swedish Radiation Safety Authority to issue regulations under the Nuclear Activities Act that concern the management and disposal of nuclear waste and spent nuclear fuel.

The Radiation Protection Act aims at protecting humans, animals and the environment against the effects of radiation. The Radiation Protection Act is thereby important when it comes to protecting not only employees who work at the final repository, but also private citizens in the surrounding area. The Radiation Protection Act also has the character of a framework law whose concrete content is provided by government regulations. The Government has authorized the Swedish Radiation Safety Authority to issue detailed radiations concerning radiation protection.

Laws to be applied in parallel

The Environmental Code states that the Code should be applied in parallel with other legislation regulating the activity. [2] This means that the Environmental Code applies in parallel with the Radiation Protection Act and the Nuclear Activities Act in contexts involving ionizing or non-ionizing radiation. Hence, questions relating to facility safety and radiation protection in a licensing matter will be examined equally thoroughly under the Environmental Code, the Nuclear Activities Act and the Radiation Protection Act from the perspective of the purposes of the different acts. Thus, anyone who conducts nuclear activities is obliged to consider not only the pro-

[2] Cf. Chap. 1 Sec. 3 of the Environmental Code.

visions of the Nuclear Activities Act, but also the rules of the Environmental Code.

At the same time, the municipality in question, Östhammar, will examine matters pertaining to the detailed development plan and a building permit for the facility under the Planning and Building Act (2010:900).

Two separate licences are required, plus the Government's permissibility assessment

The provisions of the Environmental Code and the Nuclear Activities Act prohibit building and operating the final repository without licences issued under both the Environmental Code and the Nuclear Activities Act. In other words, the provisions require two separate licences in order to own and operate the final repository for spent nuclear fuel. Matters relating to a licence under the Environmental Code are considered by the land and environmental court. Matters relating to a licence under the Nuclear Activities Act are considered by the Government.

However, the Government has to examine the permissibility of the final repository before the land and environmental court considers a licence application. [3] If the Government finds that an activity is permissible, the land and environmental court cannot in principle deny a licence.[4]

It should be observed in this context that the Government may only grant permissibility for the final repository if the municipal council in the municipality where the facility (the encapsulation plant and the final repository) is to be located has approved it (the municipal veto). A more detailed description of the municipal veto is provided further on.[5]

The Euratom Treaty

The treaty establishing the European Atomic Energy Community (Euratom) was signed on 25 March 1957, the same date as the treaty establishing the European Economic Community (the EEC Treaty) was signed.

[3] Cf. Chap. 17 Sec. 1 of the Environmental Code.
[4] See further under the heading "The Government's permissibility assessment".
[5] See under the heading "The municipal veto".

The Euratom Treaty comprises a part of the legislation of the Member States and applies in Sweden in accordance with the Act (1994:1500) on Sweden's Accession to the European Union. The ordinances passed under Euratom are directly applicable in the Member States. In other words, no further legislation is required in order for the Euratom Treaty and the ordinances issued pursuant to this treaty to be applicable in the Member States. However, secondary legislation is needed in, for example, cases where the treaty requires the Member States to adopt some special measure that is not regulated in detail in the treaty. Furthermore, rules are of course needed to implement the provisions of the directives under Euratom, which are not directly applicable in the Member States.

The Euratom Treaty has a bearing on the final repository for spent nuclear fuel mainly because the treaty imposes requirements on uniform standards for radiation protection and because the Community enforces these requirements.

The Euratom Treaty is also requires each Member State to provide the Commission with information on its plans for the disposal of radioactive waste. The information shall make it possible for the European Commission to determine whether the implementation of such a plan is liable to result in the radioactive contamination of the water, soil or airspace of another Member State.

It can also be mentioned that SKB is obliged to inform the European Commission of the activity at the final repository, according to Commission Regulation (Euratom) No 302/2005 of 8 February 2005 on the application of Euratom safeguards.

Environmental impact statement

The purpose of an environmental impact statement

An environmental impact statement (EIS) must always be included in an application under both the Environmental Code and the Nuclear Activities Act. The licensing process under these two laws thus begins with the preparation of an environmental impact statement by the applicant.

The rules in Chap. 6 of the Environmental Code govern the procedure for preparing an environmental impact statement and the requirements on such an EIS as well as planning documents. The environmental impact statement is central in the application process.

An acceptable environmental impact statement is a process prerequisite for examination of a licence application by the land and environmental court under the Environmental Code and a prerequisite for the Government's examination under the Nuclear Activities Act.[6]

This purpose of the environmental impact statement is also to identify and describe the direct and indirect impact of the planned activity or measure on a) people, animals, plants, land, water, air, the climate, the landscape and the cultural environment, as well as on b) the management of land, water and the rest of the physical environment, and c) other management of materials, raw materials and energy. A further purpose is to permit an overall assessment of this impact on human health and the environment.[7]

It is clear from the travaux préparatoires (legislative history) of the Environmental Code that the work with an environmental impact statement should provide as good a basis as possible for decisions on activities or measures which can, jointly or severally, have an impact on human health, the environment, management of land and water, etc. The work should contribute to filling knowledge gaps, as well as to increased knowledge and insight on environmental, health and natural resource issues in the individual matter.

Early consultations

The work with an environmental impact statement shall be preceded by a consultation procedure. This shall be completed in good time before the licence application is submitted and the environmental impact statement is prepared. The consultations shall cover all planned activities or measures that require a licence.

Consultations shall always be held with the County Administrative Board, which has been accorded a special role in the consultation procedure. Among other things, the County Administrative Board see to it that the EIS has the content and scope needed for the licensing process. The County Administrative Board may, within the framework of the consultation procedure, require that other comparable ways to achieve the same purpose should be presented.[8]

[6] Cf. Sec. 5 c of the Nuclear Activities Act.
[7] Cf. Chap. 6 Sec. 3 of the Environmental Code.
[8] Cf. Chap. 6 Secs. 4, 5 and 7 of the Environmental Code.

If an activity is likely to have a significant environmental impact, as is the case with the final repository for spent nuclear fuel, consultations shall also be held with other concerned authorities, such as the Swedish Radiation Safety Authority. Environmental organizations and other interest organizations, as well as private individuals, who are likely to be particularly affected shall be included in the consultations. The consultations shall concern the siting, scope, design and environmental impact of the activity, in this case the final repository, and the form and s of the environmental impact statement.[9]

The consultations comprise a central part of the work with the environmental impact statement. There should be an opportunity for different stakeholders to influence the form and content of the statement by offering their viewpoints.[10] The consultations shall be held at an early enough stage that even more fundamental changes in the project are feasible. The public's participation and opportunity to influence the environmental impact statement and the planned activity at an early stage is thus an important aspect in this context.[11]

Alternative sites and alternative designs in the environmental impact statement

If – as in the case of a final repository for spent nuclear fuel – the activity or measure is likely to have a significant environmental impact, the environmental impact statement shall always contain a report on alternative sites, if such are possible, and alternative designs. In conjunction with this report, the applicant – SKB – shall also explain why a given alternative has been chosen.[12]

The consequences of not implementing the activity or measure in any form – the no action alternative – shall also be described. The no action alternative entails comparing the consequences of implementing the project referred to in the application with an expected future situation where the project has not been implemented. The no action alternative also provides a frame of reference for comparisons between different alternatives – in this case between

[9] Cf. Chap. 6, Sec. 4 of the Environmental Code.
[10] See Gov. Bill 1997/98:45 Part 1 p. 286 ff.
[11] See Gov. Bill 1997/98:45 II p. 56.
[12] Cf. Chap. 6 Sec. 7 paragraph 2 point 4 of the Environmental Code.

building a final repository for spent nuclear fuel and continuing to interim-store the spent nuclear fuel.

Within the framework of the consultations, the County Administrative Board may require an account of other comparable ways to achieve the same purpose when alternative designs are presented.[13] The purpose of SKB's application can be regarded as describing a safe way to dispose of the nuclear waste. What other methods than the envisaged final repository according to the KBS 3 method could be possible? How far should the account of these alternatives in the environmental impact statement go, and how thoroughly should their environmental consequences be described?

The Bill for the Environmental Code[14] discusses alternative solutions, and examples are given of some possible alternatives, for example other ways to produce energy or choosing other means of transport, such as a high-speed railway line instead of an airport for domestic flights.

Based on these examples, it would appear as if the requirements on an account of alternative designs could be very extensive. The commentary on the Environmental Code[15] states that it should be reasonable to require such a detailed account of the alternatives that they can be weighed against the applied-for activity in the permissibility assessment.

The requirement on a description of alternatives should be viewed in the context of the general rules of consideration in Chap. 2 of the Environmental Code.[16] An applicant must show compliance with the obligations following from the chapter. These include the obligation to take precautionary measures and select a site that is suitable in order that the purpose is achieved with minimum damage and detriment to human health and the environment.[17] The alternatives report shall serve as a basis for an assessment of the application pursuant to Chap. 2 of the Environmental Code. An environmental impact statement shall in this way contribute to ensuring that an activity, if it is implemented, leads to as little adverse environmental impact as possible.[18]

When it comes to the account of alternative designs according to the provision in Chap. 6 Sec. 7 point 4, there is also a connection

[13] Chap. 6 Sec. 7 paragraph 5 of the Environmental Code.
[14] Gov. Bill 1997/98 II p. 64 and I p. 292, cf. also SOU 1996:103 Part 1 p. 307.
[15] Bengtsson et al. p. 6:26.
[16] NJA 2009 p. 321 (Supreme Court 10 June 2009, case no. T 3126-07, p. 7).
[17] See Gov. Bill 1997/98:45 Part 2 p. 63.
[18] See Gov. Bill 1997/98 Part 2 p. 56.

with the early consultations that precede the preparation of the environmental impact statement. In a judgement pertaining to the construction of a dam, the Supreme Court explained that an environmental impact statement that is included in an application for a licence is not acceptable as regards alternative designs of a facility if it does not describe alternatives that have come up during the consultation process.[19]

The above account of the travaux préparatoires (legislative history) of the provisions in Chap. 6 Sec. 7 and the Supreme Court's judgement raises questions that have a direct bearing on SKB's application. Should the alternatives report describe alternative designs of the method SKB has chosen for management and disposal of the waste (KBS 3) or should it describe alternative methods for management and disposal of the waste instead of the chosen one? If alternative designs are linked to the applied-for method (KBS 3), the question of which alternative designs are possible within that method can also be discussed. Is, for example, a deep repository an alternative that should be covered by the environmental impact statement?

The question of what content the environmental impact statement should have is a formal question to be decided by the court and the Government. It is also a question that may require a ruling if the Government's decision to permit the activity is subjected to judicial review by the Supreme Administrative Court.[20] It is difficult for us to take a stand on this question within the framework of this publication.

The application documents

General

The applicant – SKB – must in principle prepare two application documents: one application under the Environmental Code and one application under the Nuclear Activities Act. When it comes to the final repository, the application documents are very extensive in terms of both volume and content.

[19] NJA 2009 p. 321 (Supreme Court 10 June 2009, case no. T 3126-07, p. 7).
[20] See under the heading "The Government's permissibility assessment".

The Environmental Code contains formal requirements on what an application must contain.[21] There are no equivalent rules regarding the content of the application in the Nuclear Activities Act.

What an application must contain according to the Environmental Code

The application must be in writing. The application documents must be submitted in the number of copies found necessary by the land and environmental court. The application must contain:

- drawings and technical descriptions with information on conditions on the site, production quantity or other similar figure and use of raw materials and other input materials and substances as well as energy use,
- information on emission sources, types and quantities of foreseeable emissions and proposals for measures needed to prevent the generation of waste,
- an environmental impact statement with information on the consultations that have been held according to the Code,
- proposals for protective measures or other precautionary measures and other information needed to assess compliance with the general rules of consideration in Chap. 2,
- proposal for monitoring and control of the activity,
- a non-technical summary of the information included in the application.

What an application must contain according to the Nuclear Activities Act

The Nuclear Activities Act does not contain any formal requirements on what an application must contain that differ from what is required by the Environmental Code. But based on the requirements that apply to nuclear facilities under the Nuclear Activities Act, the application documents should contain the following for

[21] Cf. Chap. 22 Sec. 1 of the Environmental Code.

each alternative facility type or alternative facility design described in the application:[22]

- an initial preliminary safety analysis report with information on the planned facility's siting, design, construction as well as a) safety assessments of its capability to prevent nuclear accidents and mitigate the consequences if such an accident should nevertheless occur, and b analyses of its capability to prevent unauthorized intrusion and sabotage,
- an environmental impact statement that permits an overall assessment of the expected environmental impact of the planned activity,
- an account of compliance with the general rules of consideration in Chap. 2 of the Environmental Code,
- information on emissions/releases from the planned activity and occupational radiation protection as well as the radiation impact of releases under normal and disturbed operating conditions and during assumed accident sequences,
- information on the design of planned physical protection and planned emergency preparedness for disturbances and disasters,
- information on planned management and disposal of nuclear waste and other radioactive waste arising in the activity, as well as plans for future decommissioning of the facility,
- information on the applicant's organization, financial and human resources as well as qualifications to uphold safety and radiation protection and physical protection,
- information on the applicant's planned leadership and management of the construction and operation of the facility,
- information on the applicant's liability insurance or other financial guarantee for compensation in the event of nuclear accidents.

[22] See SOU 2011:18, p. 378.

SKB's application as it has been submitted to the land and environmental court and the Swedish Radiation Safety Authority

SKB's application under the Environmental Code and the Nuclear Activities Act is based on a step-by-step review process. The step-wise process is foreseen as proceeding by decisions in the following 5 steps:

1. licence to build, own and operate the facilities,
2. licence to initiate the construction phase,
3. licence for trial operation,
4. licence for routine operation and
5. licence for decommissioning and/or closure.

The application SKB has submitted to the land and environmental court and the Swedish Radiation Safety Authority pertains to step 1 and comprises a large number of documents. The application consists of an application document plus a number of underlying appendices that are intended to permit determination of whether the activity complies with the provisions of the Nuclear Activities Act, the Radiation Protection Act and the Environmental Code, with applicable ordinances.

The appendices to the application are as follows (abbreviations given in parentheses):

- Summarizing safety analysis report for final disposal of spent nuclear fuel (SR),
- Safety analysis report for operation of final repository for spent nuclear fuel (SR-Operation),
- Report on post-closure safety of the final repository for spent nuclear fuel (SR-Site),
- Preliminary plan for decommissioning (DE),
- Activity, organization, leadership and management – site investigation for final repository (AS),
- Activity, leadership and management – construction of the final repository (AC),
- Site selection – siting of the final repository for spent nuclear fuel (SS),

- Choice of method – evaluation of strategies and systems for disposal of spent nuclear fuel (CM),
- Environmental impact statement with presentation of consultations (EIS)
- Activity and general rules of consideration (AG).

Processing of the application documents

The application documents arrive at the land and environmental court

Application circulated for review and commentary

An application under the Environmental Code is submitted to the land and environmental court. The application documents must be submitted in the number of copies found necessary by the land and environmental court.[23]

When the application documents have arrived at the court, the court briefly examines the application to see whether it contains the information needed for permissibility assessment. Then the court sends the application to regulatory authorities and organizations with a request for their opinion on whether additional information is needed. The court has already sent out such a request, and replies must be received by not later than 16 April 2012. The relatively long time allowed for commentary on the content of the application is warranted by the scope of the application.

A particularly important reviewing body for SKB's application for a licence to build a final repository for spent nuclear fuel is the Swedish Radiation Safety Authority

Supplementary information

When the commentaries with viewpoints on the application have been received by the court, the court sends the viewpoints to the applicant. The applicant can then either respond to the viewpoints or supply whatever documents or information the reviewing bodies find lacking.

[23] Cf. Chap. 22 Sec. 2 of the Environmental Code.

If the applicant opts to respond to the viewpoints of the reviewing bodies rather than supplying supplementary information, the applicant sends in these responses along with a cover letter to the court. In the next step, the court can send the applicant's responses to the concerned reviewing bodies for possible comments on the applicant's responses. These comments are then in turn sent to the applicant for consideration.

The court may also hold a meeting with the applicant plus the regulatory authorities and organizations that have expressed viewpoints on the application to discuss the need for supplementary information.

If the land and environmental court finds that the application is incomplete, the court orders the applicant to remedy the deficiency by a given deadline. If the applicant does not comply with the court order, the court may decide to remedy the deficiency at the applicant's expense or, if the deficiency is so essential that the application is insufficient for a review of the case, to reject the application.[24]

The application documents arrive at the Swedish Radiation Safety Authority

Application circulated for review and commentary

An application under the Nuclear Activities Act must be submitted in writing to the Swedish Radiation Safety Authority. If the application concerns a matter to be examined by the Government, the authority should solicit the necessary opinions and hand over the documents in the matter to the Government along with its own opinion.[25]

In the case of the application for the final repository for spent nuclear fuel, the Swedish Radiation Safety Authority first briefly examines the documents in the application and then sends the application for review and commentary to Swedish regulatory authorities and other organizations.

[24] Cf. Chap. 22 Sec. 2 of the Environmental Code.
[25] Cf. Sec. 24 of the Ordinance (1984:14) on Nuclear Activities.

Supplementary information

The review responses are compiled. The regulatory authority gives its opinion to the land and environmental court regarding supplementary additional information and asks SKB to supply such supplementary information.

The application is publicized via announcements

If the land and environmental court and the Swedish Radiation Safety Authority find that the application documents are complete and no supplementary information is needed, the application is taken up for formal review. This must be publicly announced along with an announcement that an environmental impact statement has been prepared. The announcement is published in a local newspaper.[26]

After that the application and the environmental impact statement are make available to the public to give people an opportunity to voice their opinion on the documents before the case or the matter is subjected to formal review.[27] The environmental impact statement constitutes a public report on the impact which a planned activity may have on the environment.

The public presentation of the application and the environmental impact statement according to the Environmental Code and the Nuclear Activities Act is expected to be coordinated between the land and environmental court and the Swedish Radiation Safety Authority.[28]

[26] Cf. Chap. 6 Sec. 8, Chap. 19 Sec. 4, and Chap. 22 Sec. 3 of the Environmental Code, as well as 5 c of the Act (1984:3) on Nuclear Activities.
[27] Cf. Chap. 6 Sec. 8 of the Environmental Code; cf. Article 6.2 in the 1985 EEC directive in its 1997 wording.
[28] See Gov. Bill 1997/98:90, p. 271.

Formal review of the applications

Parallel processes

As mentioned above, SKB's applications are subjected to parallel review under the Environmental Code and the Nuclear Activities Act.

But there are no special rules governing how this parallel review is to be conducted. However, the travaux préparatoires assume that permissibility review under the Environmental Code and licensing review under the Nuclear Activities Act will be coordinated so that both the land and environmental court and the concerned municipality have access to the Swedish Radiation Safety Authority's review reports in the matter. The Government's final processing and decisions under the two laws should also be coordinated.[29]

Another parallel process is the one that takes place in the municipalities of Oskarshamn and Östhammar. The municipal council in both municipalities must either approve or reject the final repository before the Government makes a decision. If SKB is granted a licence to build and operate the final repository, SKB will also apply for a building permit to construct the buildings that are needed for the activity. A building permit must be applied for to the building committee in each Municipality.

Procedure in the land and environmental court according to the Environmental Code

Relevant comments received by the land and environmental court from public authorities, organizations and private citizens after the application with EIS has been publicized are sent to the applicant – SKB – for response. The applicant's response to the viewpoints offered can lead to a further exchange of correspondence.

During its preparation, the land and environmental court must ensure that the investigation in the case has the requisite focus and scope. The court must ensure not only that the investigation which the applicant is obliged to submit is complete, but also that the questions are elucidated to the extent required by the case. The court has full investigation obligation. This may, for example, mean

[29] See Gov. Bill 1997/98:90, p. 267.

that the court, even at this stage of the proceedings, finds that further investigation is needed and therefore requests expert opinions from an authority. This obligation persists throughout the handling of the case.

If appropriate, the court may instruct one or more of its members to conduct an investigation in situ. The parties must be given an opportunity to be present during such an investigation. A record must be kept of the investigation. An investigation regarding a question of a technical nature may not serve as a basis for a judgement or a decision unless the parties have been given an opportunity to respond to the investigation. This does not apply, however, if the investigation does not reveal anything significant that was not previously known.[30]

The land and environmental court should take active leadership of the proceedings.

Furthermore, the court should have access to the Swedish Radiation Safety Authority's statement of opinion on the radiation safety aspects of the case.

Procedure at the Swedish Radiation Safety Authority according to the Nuclear Activities Act

Basis for the authority's review

There is no equivalent in the Environmental Code to the formal requirements on the process that are made in the Nuclear Activities Act. There are no equivalent rules regarding the content of the application in the Nuclear Activities Act. The review of the application under the Nuclear Activities Act does not give the public the same opportunities to express viewpoints on the planned activity.

The Swedish Radiation Safety Authority's plan for review of the licence application entails that the application is sent for consideration and commentary to a number of national and international authorities and organizations as follows:

- Circulate the application to solicit opinions from Swedish regulatory authorities and other organizations.
- Receive and compile review responses.

[30] Chap. 3 Sec. 4 of the Act (2010:923) on Land and Environment Courts.

- Send the application, together with the environmental impact statement and appropriate reports, to SSM's sister authorities in Denmark (Beredskabsstyrelsen, the Danish Emergency Management Agency), Finland (STUK, the Finnish Radiation and Nuclear Safety Authority) and Norway (Statens strålevern, the Norwegian Radiation Protection Authority).
- Receive comments from the Danish Emergency Management Agency, the Finnish Radiation and Nuclear Safety Authority and the Norwegian Radiation Protection Authority.
- Request data from SKB to give to the European Commission in accordance with Article 37 of the Euratom Treaty.
- Receive SKB's data in accordance with Article 37.
- Forward SKB's data in accordance with Article 37 to the Ministry of the Environment.
- Receive the European Commission's opinion in accordance with Article 37.

At the request of the Swedish Radiation Safety Authority, the OECD/NEA has undertaken to conduct an independent review of SKB's site and method selection process and report on the repository's long-term safety.

The material obtained from the regulatory authorities and the different organizations, along with the Swedish Radiation Safety Authority's own investigation results, then serve as a basis for the regulatory review of the application.

The Swedish Radiation Safety Authority's review of the application is concerned with the question of a licence to build, own and operate the facilities. The authority's examination under the Nuclear Activities Act is mainly focused on safety issues, but the authority is also supposed to assess radiation protection aspects under the Radiation Protection Act.

Expert opinion of the Swedish Radiation Safety Authority

The Swedish Radiation Safety Authority's review report regarding radiation safety in connection with licensing is of very great importance for the judgement of the matter. The travaux préparatoires to the Environmental Code emphasize how important it is that

both the land and environmental court and the concerned municipality have access to the authority's review report in their treatment of an application under the Environmental Code.[31]

The Government should also have as complete a body of information as possible in connection with its permissibility assessment in order to be able to assess radiation safety in the operation of such facilities.

The handling of the permissibility matter should be coordinated so that both the land and environmental court and the concerned municipality, in their consideration of the question of permissibility, have access to the Swedish Radiation Safety Authority's expert opinion in the matter. A copy of the statement of opinion should therefore be sent to the land and environmental court and to the municipal council in the municipality affected by the licence matter.

Evolving safety analysis report

The safety analysis report is of central importance for nuclear facilities all over the world. This type of document plays an important role in both the licensing process and subsequently in the different phases from construction via commissioning to decommissioning of the facility. This means that the contents of a safety analysis report evolve over time. They initially contain general and conceptual information, and then progressively an increasing degree of detail, until before trial operation commences they show in detail how the requirements on the facility and the activity pursued there have been satisfied.

As a basis for an application for a licence to build a new facility, an initial preliminary safety analysis report must contain sufficient information for the Swedish Radiation Safety Authority to determine whether the facility and its activity can be expected to be designed and conducted so that the safety and radiation protection requirements, as well as the requirements on physical protection, are met. This means that the necessary accounts must be provided of the design and construction of the facility, along with general design and safety assessments that show how the requirements have been met. At this stage, the scope and degree of detail of the safety

[31] See Gov. Bill 1997/98:90, p. 271.

analysis report vary depending on the type of facility and whether the design solutions are new and unproven or tried and tested.

Review results will be presented in two statements of opinion to the Government for the two licensing matters and one statement of opinion to the land and environmental court regarding the process of circulation for consideration and commentary. The two municipalities affected by the applications will also be allowed to see the review statements.

The statements of opinion are based on extensive review reports that describe in detail the results of the review.

The opinions will also contain an assessment of whether the environmental impact statement included in the application material meets the requirements of Chap. 6 of the Environmental Code and whether it has been prepared in accordance with the procedural rules set forth in Chap. 6 of the Environmental Code. Furthermore, the statements will contain an assessment of the applicant's account of compliance with the general rules of consideration (see below). Moreover, the statements of opinion from other organizations and the public that have been received in the matters must be compiled and reported.

The authority's review reports comprises the basis for the Government's examination under the Nuclear Activities Act of a final repository system for spent nuclear fuel.

Provided that the Swedish Radiation Safety Authority approves the applications and recommends that the Government grant a licence under the Nuclear Activities Act, the authority will recommend that the Government approve certain licence conditions that entail a stepwise licensing process up until the planned facility can be put into routine operation.

According to the Swedish Radiation Safety Authority, the following licence conditions will be recommended for both the encapsulation plant and the final repository for spent nuclear fuel:

- That the facility should not be built until the authority has approved a preliminary safety analysis report.
- That the facility should not be put into trial operation until the authority has approved an updated safety analysis report.
- That the facility should not be put into routine operation until the authority has approved a supplemented safety analysis report.

The main hearing in the land and environmental court

The initial phase in the main hearing

In parallel with SSM's processing of the licensing matter, the land and environmental court processes the permissibility matter in preparation for the Government's permissibility assessment. As a part of the process, the court will hold a main hearing and then submit its statement of opinion to the Government. In this statement the land and environmental court supports or rejects the application.[32] The court can also recommend conditions which the Government should adopt.

In an initial phase of the main hearing, the land and environmental court is obliged to rule on whether the environmental impact statement satisfies the requirements in Chap. 6 of the Environmental Code.[33] In considering its ruling, the court should take into account the contents of the environmental impact statement and the results of consultations and opinions. The court then presents its ruling in an opinion to the Government on the question of permissibility.

All circumstances in the question of permissibility must be considered

The process must consider all circumstances of importance for permissibility.[34] There is nothing to prevent the land and environmental court from considering aspects related to nuclear safety and radiation protection.

The issue came up in a case in the land and environmental court in Vänersborg. The court had to make a ruling on to what extent aspects such as nuclear safety and radiation protection should be considered according to the Environmental Code when the nuclear power plant at Ringhals was being reviewed. The nuclear power company claimed that these matters should preferably be regulated by the special authorities – the then Swedish Nuclear Power Inspectorate and Swedish Radiation Protection Authority – pursuant to the Nuclear Activities Act and the Radiation Protection Act, and that simultaneous regulation under the Environmental Code would constitute a redundant regulation that could lead to conflict

[32] Cf. Chap. 21 Sec. 7 of the Environmental Code.
[33] Chap. 6 Sec. 9 of the Environmental Code.
[34] See Gov. Bill 1997/98:45 Part 2 p. 235.

and ambiguity regarding what requirements applied to nuclear safety and radiation protection at the nuclear power plant. The case was referred to the Superior Environmental Court.

The Superior Environmental Court – like the land and environmental court – found that there were no formal obstacles to regulating matters regarding nuclear safety and radiation protection in the licence for the nuclear power plant under the Environmental Code, but that it was more a question of appropriateness. With the overall investigation condition that was the object of judgement in the case, and where the emphasis came to lie on a final weighing of the benefits of the measures that could be realized by application of the principle of the best available technology according the Chap. 2 Sec. 3 of the Environmental Code against the costs of these measures, the Superior Environmental Court found that a suitable balance could be struck between the special authorities' more detail-oriented regulation and the more general weighing-together of factors to be done by the court.[35]

The integrated examination of disturbance sources permits a good overall picture to be obtained of the risks to the environment and human health while also offering considerable advantages when it comes to assessing radiation protection.

Legally binding principles and general rules of consideration

The activity must be compatible with the legally binding principles and general rules of consideration in Chap. 2 of the Environmental Code.

These principles are as follows:

The precautionary principle

The precautionary principle is embodied in Chap. 2 Sec. 3 of the Environmental Code and entails that preventive measures and other precautions must be taken as soon as it appears likely that an activity or measure may cause damage or detriment to human health or the environment. Insofar as knowledge of the connection between the activity and the damage or detriment is lacking, but it appears likely that such a connection nevertheless exists, the lack of proof of a

[35] See the Superior Environmental Court's judgement MÖD 2006:70 (M 3363-06).

causal connection should not absolve the activity operator from the obligation to adopt such measures as can reasonably be required.[36]

The knowledge requirement

Chap. 2 Sec. 2 of the Environmental Code states that anyone who pursues or intends to pursue an activity or adopt a measure must acquire knowledge regarding to what extent the activity entails damage or detriment to human health and the environment and how such damage or detriment can be prevented or mitigated. The extent of this obligation varies with the nature and scope of the activity or the measure. There is naturally a difference between the demands that can be made on an individual person's knowledge of the impact of everyday measures on the environment and the demands that can be made on someone who intends to pursue an industrial activity. However, the travaux préparatoires note that it is the possible effect of an activity or measure, and not who adopts the measure or operates the activity, that should be decisive in determining what knowledge is needed.[37]

The principle of the best available technology (BAT)

The BAT principle is embodied in Chap. 2 Sec. 3 of the Environmental Code. The best available technology must be used in professional activities to prevent damage and detriment. "Technology" includes not only production equipment, but also methods for production such as training and supervision. The best available technology refers to both the technology used and how a facility is designed, built, maintained, operated, and, finally, decommissioned and taken out of service. The technology must be industrially feasible to use, from a technical and economic viewpoint, in the sector in question. It must be practically available and not just in the experimental stage, but does not necessarily have to exist in Sweden. The assessment of what is the best available technology includes overall impact on the environment. For example, raw materials and energy consumption should be taken into account.[38]

[36] See Gov. Bill 1997/98:45 Part 1 p. 210.
[37] See Gov. Bill 1997/98:45 Part 1 p. 211.
[38] See Gov. Bill 1997/98:45 Part 1 p. 216.

SKB is applying for a licence according to the KBS-3 method. The review process for licensing covers the encapsulation plant, shipments from Oskarshamn to Östhammar and the final repository. The purpose of SKB's application is to dispose of the waste in a safe manner. The final repository is a measure aimed at achieving this purpose and thereby comprises a protective measure to be judged pursuant to Chap. 2 Sec. 3 of the Environmental Code. Construction of the rock cavern with its consequences for human health and the environment must also be assessed in the light of this provision.

The best product choice principle

The best product choice principle embodied in Chap. 2 Sec. 4 of the Environmental Code is applied to the use and sale of chemical products or biotechnical organisms that could pose risks to human health or the environment. The principle is restricted to the obligation to avoid hazardous substances and preparations in cases where less hazardous substitutes are available.[39]

The conservation principle and the sustainability principle

These two principles follow from Chap. 2 Sec. 5 of the Environmental Code. The sustainability principle entails that whatever is extracted from nature shall be used, reused, recycled and disposed of in a sustainable manner with the least possible consumption of resources and without harming nature. With regard to raw materials and products, the conservation principle is closely related to the sustainability principle. The best effect is achieved in design and manufacturing. The principles are applied, for example, by using a resource- and energy-efficient process and by reusing or recycling materials so that they can be used again or converted into new raw materials. This reduces our consumption of natural resources so that they will be available for future generations as well. It is also urgent to reduce waste quantities and thereby the volume of landfills as well as the pollution load on land and water. Besides conserving raw materials, it is important to conserve energy. All activity operators should make energy efficiency improvements wherever possible.[40]

[39] See Gov. Bill 1997/98:45 Part 1 pp. 225–226.
[40] See Gov. Bill 1997/98:45 Part 1 p. 222.

The siting principle

Chap. 2 Sec. 6 of the Environmental Code says that activities and measures should be located on sites that are suitable with regard to the goals of the Environmental Code and where they cause the least damage and detriment to human health and the environment. The site selected for the final repository is of great importance in determining its environment impact. Activities or measures should thus be located on suitable sites. Suitability should be assessed with reference to the purpose of the Code, the fundamental and special conservation provisions and existing environmental quality standards.[41]

The reasonableness rule

Finally, there is a reasonableness rule in Chap. 2 Sec. 7 of the Environmental Code. It says that the rules of consideration should be applicable when compliance cannot be deemed unreasonable. In making this judgement, particular consideration should be given to the benefits of protective measures and other precautions in relation to their cost. However, such a judgement may never entail infringement of an environmental quality standard.

In the reasons it is noted that the rules of consideration must be applied so that unreasonable requirements are not imposed on the activity operator in the light of the effects the protective measures and precautions will have on the environment and the costs of these measures. Somewhere there is a limit where the marginal benefit for the environment does not justify the costs of the precautions.[42]

When it comes to judging where the borderline goes for what is an unreasonable cost, the principle is that the provisions of the Environmental Code should be applied to satisfy the goals of the Environmental Code. Whether the cost of a measure is reasonable or not should be judged above all in relation to the environmental benefit achieved by the measure.

The best available technology must be used for professional activities. In these cases, the judgement of what is economically reasonable is based on conditions in the industry and not on the ability of the particular activity operator to pay.[43]

[41] See Gov. Bill 1997/98:45 Part 1 p. 219.
[42] See Gov. Bill 1997/98:45 Part 1 p. 232.
[43] See Gov. Bill 1997/98:45 Part 1 p. 232.

The court's statement of opinion to Government

The court's statement of opinion to the Government must contain a recommendation regarding SKB's application, i.e. whether the Government should permit the activity applied for or not. The opinion may also contain recommendations for conditions which the Government should stipulate in its decision. This refers to conditions that have a direct bearing on the permissibility decision. The opinion also contains an account of how the court arrived at its decision. The reasons of the court are based on the rules of consideration and other rules in the Environmental Code. These rules are binding on the court as well as on the Government.

In its statement of opinion, the court should present not only a technical review of the application, but also a more formal review. Have the rules that apply to the procedure been observed? Of particular interest are the rules regarding the environmental impact statement, which is a part of the application (Chap. 22 Sec. 2 of the Environmental Code).[44]

The Government's permissibility assessment

Permissibility must be assessed before the licence application is considered

In the case of certain new facilities and activities, the Government shall, according to Chap. 17 Sec. 1 of the Environmental Code, assess their permissibility before a licence application can be considered. The Government's permissibility assessment comprises a natural part of the licensing process.

It is clearly stated in the section that the Government shall consider the permissibility of new activities. The kinds of facilities and activities in question are then enumerated in the section. They are large infrastructural projects that generally have a significant environmental impact at the same time as competing or conflicting interests must be weighed against each other to arrive at the best solution. In many cases, private interests may be weighed against public interests, or different public interests against each other.

Among the activities mentioned in the section are "nuclear installations that are subject to examination by the Government

[44] Regarding the contents of an EIS, see above under the heading "The environmental impact statement".

pursuant to the Nuclear Activities Act". Thus, the encapsulation plant and the final repository for spent nuclear fuel are among the facilities that must be subjected to permissibility assessment by the Government. Even though the section states that it is the facility that is to be considered, it is clear from the introduction to the section that permissibility shall also be considered for the activity as such.

Compulsory permissibility assessment applies to important societal interests

A common characteristic of the activities that are subject to compulsory permissibility assessment by the Government is that they 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.[45] Competing or conflicting interests must be weighed against each other in order to arrive at the best solution. In many cases, private interests may be weighed against public interests, or different public interests against each other. The assessment must be carried out so that different interests can be weighed together as fairly as possible.[46]

The judgements that are made ultimately represent political standpoints, where it is only natural that the Government has the final say regarding whether the activity can be realized or not.[47] Permissibility assessment gives the Government ample opportunity to steer the activity in the desired direction from the perspectives of industrial, energy, labour market, climate and regional policy.

The Government's decision on permissibility is binding on the land and environmental court

In connection with the assessment, the Government can issue special conditions to satisfy public interests as well.[48]

The Government's decision is in principle binding on the land and environmental court, which can therefore not reject a licence application for an activity which the Government has found to be

[45] See Gov. Bill 1997/98:45, p. 215.
[46] See Gov. Bill 1997/98:45, p. 437.
[47] See Stefan Rubensson, Environmental Code, Part 3, p. 145.
[48] Cf. Chap. 17 Sec. 7 of the Environmental Code.

permissible according to Chap. 17. If, however, the court should find that the Government has made a formal error in its handling of the matter, the court is not obliged to issue a licence.

In summary, the rule according to Chap. 17 Sec. 1 of the Environmental Code entails that before an application for a licence to build a nuclear facility is considered, the Government should first rule on the permissibility of the activity as such.

The Supreme Administrative Court can review the Government's decision

The Government's decision on permissibility is subject to the Act (2006:304) on Judicial Review of Certain Government Decisions. It is the Supreme Administrative Court that can be petitioned to conduct a judicial review to determine whether the Government's decision violates any rule of law. The land and environmental court's review is independent of any review in the Supreme Administrative Court, and the land and environmental court does not have to await a ruling by the Supreme Administrative Court before making its own ruling on the question of permissibility. This means that the reviews may take place simultaneously. Both bodies can entertain formal objections regarding the Government's handling of the matter. If the Supreme Administrative Court should find that the Government's ruling conflicts with a rule of law, before the court has ruled on the licence application the court is bound to this decision and prevented from issuing a licence.

The municipal veto

According to Chap. 17 Sec. 6 of the Environmental Code, the Government may only permit nuclear facilities if the municipal council in the municipality where the facility will be located has approved it. If the activity is of the utmost importance for the national interest, there is an exemption option that allows the Government to disregard the municipal veto when it comes to facilities for interim storage or final disposal of nuclear material or nuclear waste. In this case, where part of the facility (the encapsulation plant) is located in Oskarshamn Municipality and another part (the final

repository) in Östhammar Municipality, both municipalities have a formal veto option.

Licensing by the land and environmental court

The land and environmental court's licensing process is thus restricted to questions that have not been considered by the Government

If the Government has declared the activity permissible, the matter is returned to the land and environmental court for a licensing decision. The Government's decision in the question of permissibility is binding on the subsequent licensing process and the court is in principle obliged to issue a licence.[49] The land and environmental court's licensing process is thus restricted to questions that have not been considered by the Government.

The land and environmental court is the licensing authority of the first instance

The land and environmental court holds the main hearing and is then the licensing authority of the first instance. The court shall consider all emissions/releases and disturbances the applied-for activity can give rise to and stipulate the conditions that are needed.[50] It may be a question of conditions for the construction of the final repository and the monitoring of the repository. The conditions may, for example, concern measures to limit noise, vibrations, emissions to water and air, haulage and disposal of rock spoil and transportation of the spent nuclear fuel to the final repository, but also measures for physical protection of the facility and other measures with a bearing on safety. Other parts of the applied-for activity may be subjected to conditions in a corresponding manner.

The court generally has to take the following aspects into account:

[49] See above under the heading "The Government's permissibility assessment".
[50] See Gov. Bill 1997/98:45, pp. 435–436 and 443, MÖD 2006:44 and RÅ 2008 ref. 89, RR 27 may 2010 case no. 1989-08.

Time limitation of the licence

A licence for an environmentally hazardous activity can be issued for a limited time.[51] According to practice, it should be possible to set time limits on licences to a greater extent.[52] The reason is that environmental requirements are evolving and becoming stricter as advances are made in technology and scientific knowledge. However, it is noted that time limitation should primarily be applied to large activities with great environmental impact.

Conditions

A licence for an environmentally hazardous activity may be made subject to conditions.[53] The conditions should reflect the permissibility assessment that has been made and give concrete content to rules of consideration and other rules applicable under the Environmental Code.

In designing the conditions, the court should consider the fact that they should be able to serve as a basis for determining whether an infringement has occurred, and if so also serve as a basis for sanctions according to the Environmental Code.[54] Other factors that should be taken into account are that the licence is not issued in conflict with existing planning provisions and that it does not lead to an infringement of an environmental quality standard.

A fundamental prerequisite for the licensing authority to be able to issue conditions is that the activity operator is technically and legally able to comply with them.

One difficulty that can arise when the court issues conditions for the licence may be the borderline between what is stipulated in the land and environmental court's judgement and what is stipulated in the Swedish Radiation Safety Authority's regulation of the activity. There is no formal restriction for the court beyond the rules in the Environmental Code, so in principle the land and environmental court can issue conditions regarding whatever it considers necessary, but in practice we believe that some sort of balance must be struck between the court's and the Swedish Radiation Safety Authority's regulation of the activity.

[51] Chap. 22 Sec. 27 paragraph 1 of the Environmental Code.
[52] Superior Environmental Court's judgement 3 Feb. 2001, case no. M 8782-99.
[53] Chap. 16 Sec. 2 paragraph 2 of the Environmental Code.
[54] See Gov. Bill 1997/98:45 Part 2 p. 204.

The question of where this borderline goes has been up for assessment in a ruling from the Superior Environmental Court. This ruling can provide some guidance.[55] We find it appropriate that the Swedish Radiation Safety Authority should be responsible for the more detailed regulation of matters relating to radiation safety.

Pledging guarantees

To be valid, a licence for an environmentally hazardous activity may be subject to the requirement that the party that intends to pursue the activity must pledge a guarantee to cover the costs for remediation of environmental damage and other restoration costs the activity may occasion.[56] This does not, however, apply to the state, municipalities, county councils or the association of local authorities. Nor does the party that is liable for paying a fee or pledging a guarantee under the Act (2006:647) on Financial Measures for the Management of Residual Products from Nuclear Activities (the Financing Act) have to pledge a guarantee for measures covered by such fees and guarantees. Thus, SKB, which pays fees and pledges guarantees according to the Financing Act, does not have to pledge guarantees for remediation of environmental damage and other restoration costs the activity may occasion.

The applicant's good conduct

A licence for an environmentally hazardous activity can be denied if the applicant has not fulfilled its obligations under previous licences, approvals or exemptions.[57] The same applies when an applicant has previously neglected to apply for a necessary licence, approval or exemption.

Applicants who have not fulfilled their obligations for one type of activity can thus have their licence application for another type of activity rejected. However, a licence can only be refused if there is reason to anticipate a repeat of the misbehaviour.[58]

[55] See the Superior Environmental Court's judgement MÖD 2006:70 (M 3363).
[56] Chap. 16 Sec. 3 paragraph 1 of the Environmental Code.
[57] Chap. 16 Sec. 6 of the Environmental Code.
[58] See Gov. Bill 1997/98:45 Part 2 p. 207.

Consequential activities

In connection with licensing under the Environmental Code, consideration should be given to other activities or special facilities that are likely to be needed in order for the activity to fulfil its purpose.[59] Examples of what is meant here are roads and power lines. Consideration can also be given to hazardous shipments to and from the activity in question.[60] The court may need to give particular consideration to shipments to the final repository.

Investigations and measures

A licence for an environmentally hazardous activity may carry an obligation to conduct or pay for

1. a special investigation of the affected area,
2. special measures to preserve the affected area, and
3. special measures to compensate for the intrusion in public interests entailed by the activity.

The beneficiary of a licence may be ordered by the land and environmental court to conduct or pay for investigations of the area affected by the activity, measures to preserve this area or measures to compensate for the intrusion entailed by the activity. In determining whether conditions should be issued, consideration should be given to the seriousness of the intrusion and the benefit conferred by the measures.[61]

Execution order

When good reasons exist, the land and environmental court may decide that the licence for an activity may be put to use even if the judgement has not gained legal force.[62]

[59] Chap. 16 Sec. 7 of the Environmental Code.
[60] Gov. Bill 1997/98:45 Part 2 p. 208.
[61] Gov. Bill 1997/98:45 Part 2 p. 208.
[62] Cf. Chap. 22 Sec. 28 of the Environmental Code.

The environmental impact statement

Nuclear activities are always assumed to entail significant environmental impact. This is of particular importance when it comes to the scope of an environmental impact statement and the procedure of preparing one.[63]

Probationary period

The court can postpone the ruling on certain conditions if the effects of the activity cannot be foreseen with sufficient certainty and instead issue provisional regulations. The court then decides on a probationary period and stipulates the probationary period information needed for the court to establish final conditions. This is what happened in the case of the Ringhals nuclear power plant.[64]

The Government's licensing under the Nuclear Activities Act

Licensing process under the Nuclear Activities Act coordinated with permissibility assessment under the Environmental Code

As noted previously, the Government's licensing under the Nuclear Activities Act is coordinated with the Government's permissibility assessment under the Environmental Code. The basis for the licensing under the Nuclear Activities Act is the Swedish Radiation Safety Authority's statement of opinion.

The licence is issued to a specific facility owner who may not transfer the licence to a third party without a new licensing process

A licence to operate the encapsulation plant and the final repository for spent nuclear fuel is issued to a stipulated owner, SKB. The licence to operate the facility is thus valid for SKB alone. In reviewing the application for a licence, the applicant's knowledge and other qualifications to conduct the activity in an adequate fashion are considered. Furthermore, the applicant's ability to continuously uphold safety and radiation protection is considered.[65]

[63] See the Ordinance (1998:905) on Environmental Impact Assessments.
[64] See p. 24.
[65] See Gov. Bill 1983/84:60, p. 84.

The travaux préparatoires to the Nuclear Activities Act make it clear that in view of the importance that must be attached in a licensing matter to an applicant's ability to meet the requirements that are made on the activity, a licensee may not transfer an issued licence to someone else without due process. If ownership of a nuclear facility is transferred, the new owner must apply for a licence under the Nuclear Activities Act to own and operate the facility. Similar rules do not exist under the Environmental Code, where the licence is attached to the activity as such and not primarily to the owner, even though the knowledge requirement applies to the party who conducts the activity.

Stepwise licensing of complex facilities that take a long time to realize

Design, construction and commissioning of nuclear facilities such as a final repository for spent nuclear fuel and other complex facilities where ionizing radiation must be taken into consideration are processes that take a long time. Depending on the type of facility, detailed design documents are not normally available at the time of application. Furthermore, originally envisaged design solutions will change as time passes.

Moreover, problems may arise during the construction or facility change phase that necessitates other solutions. A stepwise licensing process is therefore necessary, which is also recommended by the IAEA and is in keeping with longstanding international practice. Both the Government's licence conditions and the authority's regulations thus need to be designed to support a stepwise licensing process.

With licence conditions as described above and the Swedish Radiation Safety Authority's regulations, the licensing process associated with the construction of new facilities and changes of existing facilities for which licences are required will consist of the following main steps:

1. Review and decision regarding approval of a more developed preliminary safety analysis report than the first report that was appended to the licence application as a basis for detailed design and construction of a new facility or a modification of an existing facility for which a licence is required. In this review, it is verified that the authority's regulations concerning safety, radiation

protection and physical protection, and with a bearing on design and execution, can be complied with.

2. Review of the applicant's organizational, manpower and administrative resources for procuring equipment and executing construction works of the scope and quality described in the preliminary safety analysis report approved by the authority. This step also includes a review of measures for physical protection during the construction phase as well as a review of preliminary plans for decommissioning of the facility. These reviews serve as a basis for the authority's decision whether or not to grant approval to begin building a new facility. This is followed by continuous follow-up of the construction works as a basis for decisions in subsequent steps.
3. Review and decision in the question of an updated safety analysis report that reflects the facility as it has been built or modified and that shows to what extent requirements have been satisfied. This step also includes review of the safety-related technical specifications and instructions that provide guidance for the operations personnel as well as review of the trial operation programme and the programme for training of the operations personnel. It also includes review of plans for physical protection and emergency preparedness for dealing with disturbances and disasters. These reviews serve as a basis for the authority's decision whether or not to grant approval for trial operation of the facility. This is followed by continuous follow-up of the trial operation as a basis for decisions in subsequent steps.
4. Review and decision whether or not to grant approval of a safety analysis report that has been supplemented based on experience from trial operation and the first maintenance outage (where applicable). Also included is review of the safety-related technical specifications and instructions that have been supplemented based on experience from trial operation. These reviews serve as a basis for the authority's decision whether or not to grant approval of routine operation.

Opportunities for different concerned parties to appeal the decisions

Who may appeal according to the Environmental Code

A judgement or decision that concerns the encapsulation plant or the final repository for spent nuclear fuel may be appealed by:[66]

- the party affected by the judgement or decision, if the ruling has gone against him,
- a local employee organization that organizes employees in the activity to which the decision applies,
- the authority, municipal committee or other body that, according to what is specified in the Code or in regulations issued pursuant to the Code, is entitled to appeal.

Also entitled to appeal is a non-profit organization or other legal entity that

1. is primarily concerned with promoting nature conservation or environmental protection interests,
2. is not a profit-making enterprise,
3. has been active in Sweden for at least three years, and
4. has at least 100 members or is otherwise able to show public support.[67]

It can be of interest to mention that the Swedish Fishermen's Association has not been considered to have the right to appeal a licence for a wind turbine based on this provision.[68] Nor have political parties been considered to have this right.[69]

The Swedish environmental organizations' right of appeal also includes the provisions of a licence, including conditions associated with the licence and postponed questions, as well as judgements entailing re-examination of a previously issued licence. The environmental organization can also appeal a licence judgement in order to add a condition not included in the licence but considered necessary by the organization.

[66] Cf. Chap. 16 Sec. 12 of the Environmental Code.
[67] Cf. Chap. 16 Sec. 13 of the Environmental Code.
[68] MÖD 2008:28 (case no. M294-08).
[69] Bengtsson et al. in the Environmental Code Commentary p. 16:31.

Anyone wishing to lodge an appeal with the support of the first or second paragraph must do so before the appeal deadline has expired.

The right of environmental organizations to appeal is limited to the right of complaint; the organizations do not have the right to initiate legal action, nor to be a formal party in ongoing legal proceedings.

Judgements and decisions against environmental organizations gain legal force at the same time as those against concerned parties and other claimants, without the ruling having to be communicated to the organization.

What can be appealed in the Environmental Code process

Based on the licensing process described above, it can be deduced that the following can be appealed:

The Government's decision to approve SKB's application can be subjected to judicial review by the Supreme Administrative Court at the request of an individual who has been a party in the matter before the Government, but also by anyone who, although not a party in the Government matter, would nevertheless be entitled to be heard in a court of law under the European Convention on Human Rights.[70] An environmental organization such as is referred to in Chap. 16 Sec. 13 of the Environmental Code may also apply for judicial review by the Supreme Administrative Court.[71] The application for judicial review must be submitted within three months of the decision. If the court does not overrule the Government's decision, it remains in force.

The land and environmental court's licence decision can be appealed to the Superior Environmental Court. The appeal mainly concerns the conditions for the licence, but formal procedural issues can also be the subject of appeal. This group of issues includes the content of the environmental impact statement. As the Supreme Court has established, the environmental impact statement is a process prerequisite.[72] This means that both the handling of the environmental impact statement and its contents must comply with the requirements of the Environmental Code. If

[70] See RP 1999 ref. 27.
[71] See above under the heading "The Government's permissibility assessment".
[72] NJA 2009 p. 321, see above under the heading "The environmental impact statement".

not, the prerequisites do not exist for a judicial review of the licence application. If the deficiencies in the application are essential, they must be rectified or the application must be rejected.

The Superior Environmental Court reviews the land and environmental court's judgement if a review permit is granted. And the decision of the Superior Environmental Court can be reviewed by the Supreme Court if a review permit is granted.