



Government of Sweden, Ministry of the Environment

103 33 Stockholm

## Statement of SSM's views

Our date: 2019-10-21

Ref. no: SSM2014-5966

Document no: SSM2014-5966-11

Administrative officer(s): Henrik Öberg

Tel: +46 8 799 4091

# Pronouncement concerning licence application under the Act on Nuclear Activities for proposed expanded operations at SFR\*

## Statement of the Swedish Radiation Safety Authority

The Swedish Radiation Safety Authority (SSM) recommends licence approval for Svensk Kärnbränslehantering AB (SKB, the Swedish Nuclear Fuel and Waste Management Company), company registration number 556175-2014, under the Act on Nuclear Activities (1984:3; *Kärntekniklagen*), for permission to:

1. At the facility for final disposal of low and intermediate level radioactive waste (LILW), located at Forsmark, Östhammar Municipality, i.e. SFR, construct the facilities required to give capacity after an extension for disposal of a maximum of 180,000 m<sup>3</sup> of such LILW originating from nuclear activities (nuclear waste) and other activities involving radiation in Sweden (comprising an increase of the licensed final disposal volume by 117,000 m<sup>3</sup>);
2. Possess and operate the pre-existing facility, and the extension of SFR, as an integrated facility for final disposal of LILW, as well as prior to this, possess and operate the pre-existing rock vault in SFR as a facility for final disposal of LILW; and
3. In the SFR repository, possess, handle, carry out shipment, dispose of, and by other means deal with the waste stated in item 1.

SSM recommends approval of the environmental impact assessment, attached to SKB's respective licence applications under the Act on Nuclear Activities, from the perspective of nuclear safety and radiation protection.

The licence approval recommended by SSM presupposes that SKB, during the construction and operation phases of the extended facility, takes into account the matters of significance for nuclear safety and radiation protection. Here, this involves SKB, when producing future safety analysis reports and as part of the ongoing work with the detailed design of the extended facility, taking into account the needed development identified and pointed out by the Authority in the attached review report (Appendix 1). The review report (Part I, section 3.4.4) describes technical issues which SSM considers should be particularly taken into account by SKB when producing future safety analysis reports, and as part of the ongoing efforts relating to the extended facility's detailed design.

\*Unofficial translation to English for information purposes only.



Demonstrating that the extended facility at SFR can be developed in accordance with the established procedure for step-wise licensing under the Act on Nuclear Activities is an assumption for recommended licence approval by SSM. For clarification of the step-wise authorisation process, it is suggested by SSM that the Government establish the conditions specified below (Nos. 4 to 7) for the licence under the Act on Nuclear Activities.

## Suggested licence conditions

SSM suggests that the Government, in pursuance of the Act on Nuclear Activities and Radiation Protection Act (2018:396), prescribe the following conditions for granting this permission:

1. This activity shall be conducted mainly in accordance with the content of the licence application.

The definition of “mainly in accordance with the content of the licence application”, in the context of the waste’s activity content, comprises the following:

- A. A maximum permissible activity content during the period of operation being limited to  $2 \cdot 10^{16}$  becquerel (Bq) at each given point in time in the case of radionuclides with a half-life of more than one year; and
- B. In connection with closure, the maximum activity content per rock vault in the repository is not allowed to substantially exceed the inventory which, in such application, constitutes the basis for the calculations in the analysis of post-closure radiation safety, pertaining to the groups of radionuclides stated below that have a long half-life:
  1. Radioactive material undergoing alpha decay, or decaying into emitters of alpha radiation,
  2. Radioactive material undergoing beta decay with a higher level of mobility in the repository environment, and
  3. Radioactive material undergoing beta decay with a lower level of mobility in the repository environment.

SSM may communicate more detailed conditions in order to regulate the maximum nuclide-specific content per rock vault in the repository in relation to nuclear safety and radiation protection during operation and following closure.

2. SKB may make modifications in terms of activity content regarding radioactive waste from some other activity involving radiation, subject to the approval of SSM. This waste is hereby exempted from Condition 1.
3. SKB may make modifications to the design of the facility accounted for in its application, subject to the approval of SSM.
4. SKB may commence the construction phase of the facility only after SSM has examined and approved a Preliminary Safety Analysis Report (PSAR).
5. SKB is allowed to commence trial operation of the facility only after SSM has examined and approved an updated Safety Analysis Report (SAR).

6. Before SKB is allowed to commence routine operation of the facility, SSM shall examine and approve a supplemented safety analysis report that takes into account experience from trial operation.
7. SKB may close the repository, subject to SSM's examination and approval of the safety analysis report.

## **Notes concerning the suggested conditions**

### **Condition 1**

As evident from Condition 1, SSM considers it reasonable to allow a certain redistribution of radionuclides within each rock vault in the repository, compared to the reference inventory on which the licence application is based. This aspect is also compatible with Conditions 2 and 3, as well as in accordance with the optimisation principle applied to management of generated waste. Nonetheless, any prospective future redistribution requires approval by SSM, also as made clear by the suggested condition. A licence application submitted to the Authority concerning such redistribution should be based on a categorisation of the relevant radionuclides in relation to their respective half-lives, radiotoxicity and mobility in the repository environment. Moreover, this application should include an assessment regarding the adaptation of this redistribution to the barriers' protective capability, in addition to how this redistribution has an impact on long-term safety. This application should also give an account of how this redistribution takes into account the requirements for optimisation and application of best available technology.

### **Condition 2**

SSM decides on permission for facilities for management of non-nuclear radioactive waste under the Radiation Protection Act. Consequently, in the case of radioactive waste of non-nuclear origin, the Authority considers it appropriate that it is in the power of SSM to approve changes to the inventory. By exempting radioactive waste of non-nuclear origin from the regulation contained in Condition 1, this allows scope for making changes to the radionuclide-specific inventory upon which the application is based in order to give the possibility for management of waste from non-nuclear facilities. Condition 2 is considered to be compatible with SKB's request.

### **Condition 3**

This condition corresponds to Condition 2 of SKB's licence application. As a basis for the kind of changed design to which the Condition refers, SKB should provide an account of impacts on long-term protective capability, as well as explain the rationale for suggested changes.

### **Conditions 4 to 7**

Construction of the type of nuclear facility sought in the licence application presupposes that the more detailed design will develop in pace with construction of such facility. Following an initial permission granted by the Government under the Act on Nuclear Activities, it is warranted to produce additional, gradual, and increasingly detailed safety analysis reports.

Basic provisions concerning safety analysis and safety analysis reporting are stipulated in Chapter 4 of the regulations (SSMFS 2008:1) of the Swedish Radiation Safety Authority

concerning safety in nuclear facilities. These provisions are based on the IAEA's Safety Guide No. GS-G-4.1.

Before construction of a facility is permitted, a *preliminary safety analysis report (PSAR)* must be produced. Thereafter, before trial operation of the facility is allowed, an *updated SAR* is to be submitted. This SAR must reflect the facility as it is built. Subsequently, before the facility is allowed to begin routine operation, a *supplemented safety analysis report* must be submitted, which takes into account experience from trial operation.

Similar to the conditions applying to date under the Act on Nuclear Activities and Radiation Protection Act, it is SSM's intent to, also hereinafter during routine operation of this facility, impose requirements entailing a requirement for SKB to, on a regular basis, as a minimum every 10th year, submit an updated safety analysis report. The report shall contain an analysis of the repository's long-term protective capability and environmental consequences. In connection with each occasion of reporting, SKB is required to account for significant gaps in knowledge and uncertainties that have an impact on radiological long-term safety, and to present a programme for their management.

As per the regulations of the Swedish Radiation Safety Authority (SSMFS 2008:21) concerning safety in connection with the disposal of nuclear material and nuclear waste, the safety analysis report is to be updated and approved prior to closure of the repository.

## The Swedish Radiation Safety Authority's assessments

### Overall assessments

SSM considers that SKB has demonstrated: a) that long-term nuclear safety and radiation protection can be achieved with the reference design presented in the application, and b) that construction and operation of the extension can be carried out in a way that is radiologically safe.

Moreover, in the assessment of SSM, SKB has demonstrated compliance with the applicable requirements to a sufficient extent as per the Act on Nuclear Activities to enable the Government to take a decision on licensing.

From an overall perspective, SSM assesses that the preparatory safety analyses submitted by SKB together with the licence application provide a reasonable account of radiological consequences, during not only construction and operation, but also following closure of the planned extension. SSM is of the assessment that SKB, e.g. in the form of the preparatory safety analyses, has demonstrated that the company has the requisite knowledge for an appropriate analysis of post-closure safety due to the planned activity. Furthermore, SSM is of the view that SKB has acceptably demonstrated its management of uncertainties linked to the repository's protective capability and to the aspects of nuclear safety and radiation protection.

SKB is also assessed to have the capability to produce the updated safety analysis reports required for construction, operation and long-term nuclear safety and radiation protection, which in accordance with the suggested conditions will be subject to examination and approval by SSM in forthcoming steps following permission granted by the Government.

In the assessment of SSM, based on the regulatory supervision conducted on the part of the existing operation at SFR, SKB has demonstrated positive development in recent years as far as concerns organisational circumstances, in addition to financial and human resources.

Although SSM considers that certain aspects of SKB's organisation, management and control should undergo continuing development, in parallel with taking into account operational experience from the existing facility, SSM assesses that the company has potential for learning and generally has a suitable organisation in place for developing and operating the planned extension of the existing SFR facility.

SSM notes that managing the decommissioning waste, in addition to shutting down the facility and restoring the site following closure, presuppose financing by the Nuclear Waste Fund. In the area of operational waste management, funding for this is provided directly by the nuclear power companies. SSM is unable to identify any rationale for questioning whether SKB has sufficient financial resources for absorbing the costs and taking the safety-related investment decisions that are warranted for safe normal operation.

### **Summary account of outcomes of SSM's review**

In this review, SSM has adopted a stance towards the planned extension and integrated facility. This includes the pre-existing areas and rock vaults of the repository, comprising an aboveground component and an underground component at a depth of between 60 and 140 metres below the seafloor. The underground component is made up of several rock vaults whose designs differ depending on the waste's activity level. Also in the case of the new rock vaults in the repository, planned at a depth of approximately 120 metres below the seafloor in connection with the pre-existing underground component, SKB has taken into account the waste's level of activity and properties in relation to the layout.

The licence application, submitted on the assumption of a step-wise licensing process, is based on a reference design for the planned repository. The reference design could be described as corresponding to the protective capability which the safety analysis attributes to the proposed extension and its initial status after closure. For a more detailed line of reasoning relating to the reference design, see Appendix 1, Part I, section 3.1.

In the context of the pre-existing facility, SSM exercises regulatory supervision over it. For a more detailed description of SSM's approach to a licensing review for a facility in operation, see Appendix 1, Part I, section 2.3.

A general account of SSM's assessments is provided below. A more in-depth presentation of SSM's regulatory scrutiny and assessments is contained in the attached review report. Part I of the review report contains a summary of the Authority's assessments relating to construction and operation, long-term nuclear safety and radiation protection, and the Environmental Code's requirements for optimisation and best available technology.

This review has encompassed the following areas:

- The site, design and construction of the facility,
- Safety analyses,
- Discharges of radioactive materials during construction and operation,
- Long-term nuclear safety and radiation protection,
- Radioactive waste management and planning for decommissioning and closure,
- Physical protection,
- Emergency preparedness and response,
- Radiation protection of workers,
- Organisation, human resources and knowledge management, and
- Management and control of the operation and its activities.

## Assumptions for ensuring long-term nuclear safety and radiation protection represented by the planned layout and design

In the assessment of SSM, SKB's system of barriers in the reference design gives potential for sufficiently limiting the repository's impact on the surroundings. The engineered barriers, concrete moulds, and, to a certain extent, the waste and its packagings, help to create a chemical environment which in its turn contributes to retention of most radioactive substances by reducing their mobility. The barrier system also contributes to maintaining low water flows through the repository. Slow outward migration makes it possible for a substantial proportion of the activity to decay before dispersion in the biosphere can become significant.

However, dispersion will take place, mainly of long-lived radioactive materials over the space of time during which the repository's evolution needs to be taken into account. The magnitude of the dispersion depends on the other properties of the waste, in addition to the engineered barriers' properties and long-term evolution. In the context of radiation safety, the key uncertainties above all associated with the engineered barriers' evolution over time are considered to be encompassed by SKB's analyses. These are presented in the form of pessimistic calculations. These analyses make it possible to assess impacts on the repository's long-term evolution also involving dispersion of radioactive substances assuming pessimistic scenarios.

SKB's presentation provides an analysis of the impacts of discharges to geographically relatively limited outflow areas in the vicinity of the repository. SKB's biosphere modelling is generally considered to provide a satisfactory account of the biosphere conditions, while also giving reasonable input for estimating impacts on the surroundings linked to discharges of radioactive materials. This is because SKB's calculations take into account dispersion pathways, land use and dietary habits that result in a relatively high level of exposure in hypothetical scenarios involving future local residents. SKB has also performed corresponding sensitivity analyses in order to feasibly take into account protection of biological diversity against harmful effects of ionising radiation.

The maximum radiological risk due to discharges of radioactive materials from the existing SFR facility and the planned extension, according to the main scenario of SKB contained in the safety analysis "SR-PSU", implies dose consequences below the regulatory requirements of SSM, in terms of a maximum annual risk of  $10^{-6}$ . In practice, this corresponds to a maximum individual dose totalling one hundredth of natural background radiation. As stated by SKB's analysis, the point in time for maximum radiological risk occurs, with a few exceptions, during the time horizon 3000–6000 AD.

SSM considers that SKB has acceptably defined a main scenario whose purpose is to illustrate the most likely changes occurring in the repository and its surroundings. In the case of the main scenario, SKB's account is based on the repository's expected evolution, whereas the other scenarios are defined on the platform of the repository's safety functions and plausible deviations from the projected evolution. Nonetheless, in forthcoming analyses of post-closure safety, SSM expects SKB to integrate into the main scenario components of the analyses within the parameters of the less probable scenarios. What this mainly refers to is how the engineered barriers for the pre-existing facility are represented in the initial state of the repository after closure. However, this aspect has not affected SSM's capacity to assess the risk analysis as a whole.

SSM considers that SKB's analysis of the repository's risk and its evolution over time is accurate as input for recommending approval of SKB's application for authorisation. In particular, this applies to calculating maximum dose/risk, which is estimated to occur around 3,000 years after closure. In summary, SSM is of the view that SKB's risk analysis



is fit for purpose, and takes into account key factors characterised by remaining uncertainties. SSM assesses that this analysis demonstrates the repository's inherent and feasible tolerance against the conditions, events and processes that are likely to occur after closure. For a more detailed assessment pertaining to SKB's risk analysis, see Appendix 1, Part III, Chapters 10 and 11.

### Alternative layouts

In the case of the rock vault designated 2BMA, which is planned to house intermediate level waste in the extension, SKB has presented two alternative designs. Of these, SSM considers that the silo option should represent certain advantages from the perspectives of nuclear safety and radiation protection, including a stronger basis on proven technology. Nonetheless, in the assessment of SSM, the difference in protective capability when comparing between SKB's recommended alternative and the silo option is not substantial enough to warrant the estimated increase in cost for construction of the latter option. This assessment presupposes continuing efforts by SKB to optimise utilisation of the repository's overall protective capability, by taking measures to an extent that it is reasonably practicable to direct long-lived radionuclides to the existing silo facility.

When it comes to the planned rock vaults in the repository for low level waste, the overall assessment of SSM is that these vaults have an improved protective capability in relation to the corresponding, pre-existing rock vault in the repository; this is partly represented by increased repository depth, resulting in greater protection against inadvertent human intrusion, as well as by lower groundwater flows at the selected repository depth. Although the protective capability of these different rock vaults in the repository leaves room for improvement, SSM is of the view that the corresponding expense is disproportionate to the waste's relatively insignificant activity content.

In the case of the rock vault in the repository intended for disposal of reactor vessels, since the licence application was initially submitted, extensive modifications have been carried out owing to SKB's (together with the nuclear power companies) decision to no longer dispose of these vessels whole. SSM considers this decision to mainly have advantages from an environmental perspective, though also advantages from the perspective of long-term radiation protection and nuclear safety. Above all, this is due to segmentation of the reactor vessels and the subsequent handling being based on proven technology and engineering.

### The site for the extension

In the case of the applicant's planned site for the extension, SSM shares SKB's assessment that the site per se is appropriate, while also representing obvious synergies in connection with co-location. Siting below seafloor level also brings about advantages in terms of nuclear safety and radiation protection, particularly for the initial period of time when the sea covers the repository area. The sea cover not only results in a low hydraulic gradient, and thus low groundwater flows in the repository's surroundings, but also an assessed very low risk of human intrusion during the first thousand years.

SSM considers that the bedrock at the site of SFR has beneficial properties for limiting outward migration of radionuclides. This aspect mainly relates to the bedrock's relatively low flows of water, in addition to the chemically reducing conditions expected to predominate the repository environment after closure. The low level of flows helps to maintain the engineered barriers' functions by reducing the rate of concrete degradation in particular. Chemically reducing conditions present in the groundwater, combined with high pH values, reduces the rate of corrosion affecting iron and steel, while also contributing to

reduced mobility on the part of a large number of radionuclides that are significant from the perspective of long-term radiation protection and safety.

The intended site's repository depth is also judged as suitably selected owing to the hazards of the waste, hydrological conditions, projected future permafrost depth, and future human activities.

SKB has performed analyses on the part of other options for siting compared to the recommended site, which is located adjacent to the pre-existing SFR facility; among other prospective siting, this includes in the Forsmark lens in Östhammar Municipality. In the assessment of SSM, an alternative site characterised by lower groundwater flows for periods beyond the initial thousand years would represent an improved protective capability, in particular for the 2BMA rock vault in the repository. In the case of the rock vaults 2–5BLA and BRT, the selected site is considered more appropriate than inland siting in a bedrock characterised by lower groundwater flows.

Siting of this facility largely involves considering safety advantages during the initial 1,000 years in relation to the safety advantages represented by the subsequent period of time. Since large proportions of the inventory of radioactive materials will decay during the significant first period of one thousand years, and the prospective advantages linked to alternative siting are relatively limited, SSM considers this unwarranted when taking into account the increased costs and other drawbacks. SSM's assessment takes into account further initiatives by SKB for the purpose of limiting the rock vault 2BMA's inventory of long-lived radioactive materials.

The Authority's combined assessment is that the recommended site, in itself, is appropriate for a repository for the waste in question. For SSM's more detailed assessments in this respect, see Appendix 2, Part IV, section 1.8.

## Construction and operation

SSM assesses that the operation at SFR is of a nature entailing that only negligible releases or discharges into the air or water are expected to occur in connection with normal operation of the extended facility. The activities of the extended facility will be run in accordance with the same principles governing the pre-existing facility. This assessment is also based on SKB's report stating that during the period of operation of the pre-existing facility, only limited releases into air or water have occurred during normal operation.

From the perspective of radiological environmental impact in an emergency situation, the Authority's regulations (SSMFS 2008:1) require demonstration from safety analyses that these consequences are acceptable in relation to the acceptance criteria stated as per the Radiation Protection Act. For a selection of events, SKB has accounted for dose to the most affected individual in the critical group, and demonstrated that doses in these cases are well below the acceptance criteria. In the assessment of SSM, SKB should, in preparation for a licence application for permission to construct the extended facility, develop and clarify the methods for these analyses. In this respect, SKB has produced a plan for future steps of licensing. This plan covers the company's approach to developing new methods and working in accordance with them for performance of safety analyses. SKB has also reinforced its organisation with additional expertise in the field, which gives potential for fulfilling the requirements before allowance to commence the construction phase of the facility.

Events that could potentially result in discharges to the environment also comprise an area evaluated by SSM in connection with decision-making on warranted measures for



emergency preparedness as per the regulations of the Swedish Radiation Safety Authority (SSMFS 2014:2) concerning emergency preparations at nuclear facilities. Up until now, the pre-existing facility has not been subject to SSM's requirements for ensuring emergency preparedness. When reviewing the application for permissibility for the extended SFR facility, the Authority assessed that the new section of the facility is of a similar nature as the pre-existing one; consequently, no new types of events or conditions are anticipated to occur that might give doses to the surroundings that exceed the acceptance criteria.

As far as concerns the organisation, and its control, leadership and knowledge management, it is the assessment of SSM that SKB will be capable of meeting SSM's regulatory requirements, for example because SKB demonstrates a fundamental understanding of the requisite management and control applying to the organisation and its work. SKB also has a management system in place for the existing operation, whose activities are set up in accordance with the principles for quality management and environmental management. In the continuing work, an area of key importance includes SKB demonstrating that experience from operating the existing facility is taken into account so that the company has the approach of a learning organisation.

As far as concerns physical protection, SKB has presented a preliminary plan which, in the assessment of SSM, is adequate for this phase. SKB will also, following the Government's decision, have a need to present a plan for physical protection on the part of the construction phase, as well as a more thorough account in the area of information security.

Moreover, SSM is of the view that SKB will be capable of developing and operating an extended SFR facility that is in compliance with the Authority's radiation protection requirements. SKB has accounted for fundamental principles for the intended construction and operation of the facility for the purpose of maintaining good radiation protection. SSM takes the view that the sources of radiation and potential exposure pathways are adequately described, and that estimates of radiation doses in connection with potential exposure situations during both normal operation and abnormal operation give support to the assessed compliance with dose limits. SKB applies the ALARA principle on minimising radiation doses to workers.

When it comes to the decommissioning of this facility, SSM is of the assessment that SKB's reported decommissioning plan contains the requisite information for the present phase as per the Authority's official regulations (SSMFS 2008:1). The structures, systems and components of the facility that are not part of the barrier system for the purpose of long-term nuclear safety and radiation protection may be expected to remain non-contaminated, or can be expected to undergo decontamination prior to decommissioning. Consequently, it is not anticipated that any management of radioactive material or waste will occur in connection with decommissioning.

### Environmental impact assessment

SSM is of the opinion that SKB has adequately investigated and accounted for nuclear safety and radiation protection matters and issues to enable the Government to approve the environmental impact assessment as part of this review under the Act on Nuclear Activities. SSM takes the view that sufficient information is provided by the environmental impact assessment, together with supplementary information and other components of the licence application, to demonstrate and assess from a radiation safety perspective the main impacts of the operation on human health and the environment. See also Appendix 1, Part IV.

### SSM's assessments of SKB's requested conditions

In the case of SFR, the repository's primary function is to delay and limit discharges of radioactive materials for the purpose of enabling decay of relatively short-lived activity inside this repository, while also limiting discharges of remaining long-lived nuclides. For this type of disposal, limitation of the inventory's size and, in particular, the content of long-lived nuclides, is a prerequisite for maintaining long-term nuclear safety and radiation protection.

In its licence application under the Act on Nuclear Activities, seeking permission to extend the pre-existing SFR facility, SKB has requested that the Government prescribe a framework condition defining a maximum permissible activity content of waste for final disposal in the SFR repository being limited to  $2 \cdot 10^{16}$  Bq. In addition, SKB requests that SSM communicate more detailed conditions for regulation of maximum nuclide-specific content per rock vault in the repository in relation to radiation protection and nuclear safety aspects during operation and following closure.

SSM takes the view that limiting the maximum permissible activity content in the SFR repository to  $2 \cdot 10^{16}$  Bq is insufficient for defining the scope of this licence. Not only is the point in time for application of this value relatively undefined; another aspect is the insufficiently specified inventory of different long-lived radionuclides. Moreover, SSM notes that SKB's licence application assumes a total inventory *at the time of closure* of  $1 \cdot 10^{15}$  Bq, which is a factor 20 lower than the suggested maximum inventory encompassed by SKB's requested condition.

Consequently, in the assessment of SSM, the implication of this activity being run largely as stated by the application documents is that the maximum activity content per rock vault in the repository, in connection with closure on the part of groups of radionuclides of high radiotoxicity, or groups of radionuclides with long half-lives, is not allowed to significantly exceed the inventory comprising the input for the calculations contained in the analysis of radiological long-term safety after closure. For this reason, the Authority suggests conditions relating to inventory limitations.

SSM considers it appropriate to specifically state that the Authority, within the framework of the licence's scope, may communicate more detailed conditions for regulation of the radionuclide-specific activity content per rock vault in the repository, while taking into account nuclear safety and radiation protection during normal operation, and also pertaining to post-closure radiation safety. SSM notes that this also is connected to permission for acceptance criteria on the part of waste disposed of in the SFR repository.

In summary, SSM concludes that SKB's requested conditions for the extended operation at SFR should either be met in the form of the conditions suggested by SSM in this statement, or deriving from the Authority's supervisory mandate under the Act on Nuclear Activities, e.g. relating to the procedure for approval of plant modifications in connection with an existing, and licensed, nuclear activity.

For a more extensive account of SKB's requested conditions, and SSM's assessment of these, see the attached review report: Part I, section 3.3.



---

This matter has been decided by department director Johan Anderberg. Analyst Henrik Öberg was rapporteur. Final administration of this matter has also involved head of section Ansi Gerhardsson, environmental law expert Tomas Löfgren, in addition to analysts Patrik Borg, Annika Bratt and Anders Wiebert.

## SWEDISH RADIATION SAFETY AUTHORITY

Johan Anderberg

Henrik Öberg

## Appendices

1. Review report: Extension and continued operation of SFR
2. Thematic compilation of SSM's consideration of the responses from consultees regarding SKB's licence application under the Act on Nuclear Activities, which concerns an extension and continued operation of SFR

## Copies distributed for information only

Svensk Kärnbränslehantering AB (SKB)  
Swedish National Council for Nuclear Waste  
Uppsala County Administrative Board  
Östhammar Municipality  
Land and Environment Court of Nacka District Court