UNOFFICIAL TRANSLATION

GOVERNMENT DECISION CONCERNING POSIVA OY'S APPLICATION TO RECEIVE A LICENCE REFERRED TO IN SECTION 18 OF THE NUCLEAR ENERGY ACT FOR THE CONSTRUCTION OF AN ENCAPSULATION AND DISPOSAL FACILITY AT OLKILUOTO IN EURAJOKI.

Application

Posiva Oy (hereinafter referred to as "Posiva" or "the applicant") has, in its application dated 31 December 2012, requested a licence for the construction of a complex consisting of an encapsulation plant and disposal facility at a planned site at Olkiluoto in the municipality of Eurajoki. The disposal facility will also include facilities for the disposal of radioactive operating waste and decommissioning waste that is generated during the disposal activities.

In a letter dated 2 July 2015, Posiva informed that changes had occurred in the conditions that concern the application for a construction licence. The decision in principle issued to Posiva on 6 May 2010 that concerned the construction of an extended disposal facility for the disposal of spent nuclear fuel from the OL4 nuclear power plant unit expired on 30 June 2015, since Teollisuuden Voima Oyj decided not to apply for a construction licence for the OL4 nuclear power plant unit. At the same time, Posiva proposed that, due to the changes in conditions, the spent nuclear fuel of the OL4 nuclear power plant unit would be excluded and the other parts of the construction licence application would remain in force.

At the request of the Ministry of Employment and the Economy, Posiva specified, in a letter dated 11 August 2015, the construction schedule of the encapsulation plant and disposal facility, the overall project schedule, and design solutions that would require approval from the Radiation and Nuclear Safety Authority. Posiva presented some supplementary information and justifications in a letter dated 28 October 2015.

According to the Government's decisions in principle, the amount of spent nuclear fuel shall be no more than equivalent to 6,500 tonnes of uranium, consisting of the spent nuclear fuel from Teollisuuden Voima Oyj's three nuclear power plant units and Fortum Power and Heat Oy's two power plant units.

The facility consists of an above-ground encapsulation plant, and a disposal facility for spent nuclear fuel that will be excavated deep into the bedrock, as well as a separate space for the low and intermediate level radioactive waste generated during disposal activities. The encapsulation plant and disposal facility will also have spaces constructed for the temporary storage of sealed disposal canisters containing spent fuel. An access tunnel and vertical shafts lead into the disposal facility from the ground level. They are used for ventilation, personnel transport and transfer of capsules.

The spent nuclear fuel is packed inside disposal canisters at the encapsulation plant. The canisters are disposed of at a disposal facility constructed deep inside the bed-

rock. It houses the disposal facilities for nuclear fuel and a separate disposal hall for low and intermediate level operation and decommissioning waste. The disposal facilities include central tunnels that branch into disposal tunnels. Their floors have disposal holes where the canisters can be placed. Alternatively, the canisters can be placed horizontally into long disposal tunnels that branch out from the central tunnel. Each tunnel can house several canisters placed one after another.

The current understanding is that readiness for construction will be achieved towards the end of 2016. It is the intention that the disposal project will continue between 2016 and 2018 in the form of excavations; the encapsulation plant foundation, the disposal facility canister shaft and the vehicle connections will be excavated during this period. The excavation of the canister shaft is expected to begin during 2017.

The encapsulation plant would be constructed to the necessary extent. The disposal facilities would be constructed in stages. The encapsulation plant and disposal facility are expected to begin operations around 2023 and to remain in use for approximately 100 years.

The application documentation includes the analyses concerning the underground research facilities and their above-ground auxiliary buildings that are being constructed on the basis of the decision in principle issued in 2000 and that will be annexed to the encapsulation plant and disposal facility complex (so-called ONKALO). The future use of these facilities as a part of the disposal facility requires that the construction is carried out and supervised in accordance with the provisions of the Nuclear Energy Act.

Posiva is the building owner of the facility. Posiva will utilise the expertise of its owners, Teollisuuden Voima Oyj and Fortum Power and Heat Oy, in particular for the construction, operation, maintenance and plant design of the encapsulation plant and disposal facility. Several well-known engineering agencies and research organisations, such as Pöyry Oy, Saanio & Riekkola Oy and VTT Technical Research Centre of Finland are used during the design of the facility and the disposal operations and the justification of safety. Close cooperation and information exchange is maintained with the international operators in the industry, such as the Swedish nuclear waste management company Svensk Kärnbränslehantering Ab (SKB).

In the future, Posiva hopes to have access to several suppliers who can manufacture the disposal canister components in series that are required for the disposal operations. The plan is to purchase the casting blanks and copper lids that are used for the manufacture of copper components from Finland. The first disposal canisters will be manufactured in Germany and in future some will be manufactured in Scotland, for example. The cast iron internals will most likely be purchased from Finland. There are also suppliers in Sweden and Germany for these products. The manufacture of the buffer and filler blocks is under investigation.

The total cost estimate for the disposal (in 2009 currency) amounts to over EUR 3 billion. Of this sum, the share of the construction of ONKALO and the encapsulation plant and disposal facility amounts to EUR 700 million, the share of operation amounts to EUR 2,405 million and the share of the closing of the disposal facilities amounts to EUR 200 million.

With the construction licence application, Posiva has submitted the analyses referred to in Section 32 of the Nuclear Energy Decree (161/1988). Furthermore, Posiva has appended to the construction licence application the following analyses required by the decisions in principle concerning the construction licence application:

- The analyses demonstrating the safety of the facility in accordance with the Nuclear Energy Act and Decree are presented in appendices 8, 9 and 16 and in the preliminary safety analysis report submitted to STUK;

- The up-to-date analyses on the facility's environmental impacts, also considering the possible effects on the flora and fauna, as well as a description of the design bases that will be observed by the applicant to avoid environmental damage and to restrict the burden on the environment, are presented in appendices 9 and 16;

- Detailed analyses on the safety of the alternative means of transportation of nuclear fuel, their impact on the environment and their safe implementation in a manner that meets the requirements of the Act on the Transport of Dangerous Goods and the decrees issued on its basis are presented in appendix 18;

- The analyses demonstrating the meeting of the safety requirements applicable to the project are presented in appendices 8, 9 and 16 and in the preliminary safety analysis report submitted to STUK;

- An analysis demonstrating that no passage of radioactive substances will occur in or via the bedrock of the disposal area in a manner that would cause short-term or long-term detriment to the population, property or the environment, including the sea environment, is presented in appendices 8, 9 and 16 and in the preliminary safety analysis report submitted to STUK;

- Analyses of all chemical and physical processes and interactions that may be significant in terms of the safety of disposal are presented in the safety case justification submitted to STUK;

- Specified, sufficiently detailed analyses and plans concerning the reopenability of the disposal facilities, any factors that may affect it, the technique used for the opening and the safety and costs of the opening, while taking into account that long-term safety must not be endangered, are presented in appendix 17;

- Detailed technical plans, safety analysis reports and analyses on the environmental impacts of all waste types that the disposal facility is intended to contain have been presented in appendices 6, 9 and 16 and in the preliminary safety analysis report submitted to STUK.

Posiva requests that, when granting the licence, the Government decide under Section 31(2) of the Administrative Judicial Procedure Act (586/1996) that the decision be executed in spite of any complaints, since public interest requires that the execution is not delayed.

Posiva also requests that the Radiation and Nuclear Safety Authority be granted permission to approve changes to the suggested design solutions, such as changes in

choice of material and component dimensioning as well as in the installation of disposal canisters into the bedrock.

Applicable legislation

By virtue of Section 16(1) of the Nuclear Energy Act, a licence for the construction of a nuclear facility is granted by the Government.

According to Section 17 of the Nuclear Energy Act, a licence to use nuclear energy may be granted only to natural persons, corporations or authorities under the jurisdiction of a Member State of the European Union.

Section 18 of the Nuclear Energy Act states that a construction licence for a nuclear facility may be granted

1) if a decision-in-principle referred to in section 11 has deemed the construction of a nuclear facility to be in line with the overall good of society, and Parliament has decided that the decision-in-principle remains in force; and

2) if the construction of a nuclear facility also meets the prerequisites for granting a construction licence for a nuclear facility as provided in section 19.

The preconditions set forth in Section 19 of the Nuclear Energy Act are as follows:

1) the plans concerning the nuclear facility meet the safety requirements laid down in the Act, and appropriate account has been taken of the safety of workers and the population when planning the operations in question;

2) the location of the nuclear facility is appropriate with respect to the safety of the planned operations and environmental protection has been taken into account appropriately when planning operations;

3) physical protection has been taken into account appropriately when planning operations;

4) a site has been reserved for the construction of a nuclear facility in a local detailed plan in accordance with the Land Use and Building Act (132/1999), and the applicant is in possession of the site required for the operation of the facility;

5) the methods available to the applicant for arranging nuclear waste management, including final disposal of nuclear waste and decommissioning of the facility, are sufficient and appropriate;

6) the applicant's plans for arranging nuclear fuel management are sufficient and appropriate;

7) the applicant’s arrangements for the implementation of control by the Radiation and Nuclear Safety Authority (STUK) as referred to in paragraph 3 of section 63 subsection 1, in Finland and abroad, and for the implementation of control as referred to in paragraph 4 of section 63 subsection 1, are sufficient;

8) the applicant has the necessary expertise available;

9) the applicant has sufficient financial prerequisites to implement the project and carry on operations; further

10) the applicant is otherwise considered to have the prerequisites to engage in operations safely and in accordance with Finland's international contractual obligations; and

the planned nuclear facility otherwise fulfils the principles laid down in sections 5–7.

According to Sections 5 and 6 of the Nuclear Energy Act, the use of nuclear energy shall be in line with the overall good of society and safe for man, the environment and property. Furthermore, according to Section 7 of the Nuclear Energy Act, sufficient physical protection and emergency planning as well as other arrangements to limit nuclear damage and protect the use of nuclear energy against illegal action are prerequisites for the use of nuclear energy.

By virtue of Section 23 of the Nuclear Energy Act, a statement concerning the constructions licence application shall be requested from the Radiation and Nuclear Safety Authority (STUK) and from the Ministry of the Environment; pursuant to Section 37 of the Nuclear Energy Decree, statements shall be requested, at a minimum, from the Ministry of the Interior, the regional Centre for Economic Development, Transport and the Environment, the State Provincial Office and the Ministry of Social Affairs and Health.

Pursuant to Section 37 a of the Nuclear Energy Decree, before making a decision about the construction licence, the Ministry of Employment and the Economy shall ensure that a statement defined in chapter IV of the Euratom Treaty has been obtained about the nuclear facility project and that the applicant has complied with the regulations of chapter IV of the Euratom Treaty and the regulations issued by virtue of it.

Section 24 of the Nuclear Energy Act contains provisions concerning the validity of the licence.

Pursuant to Section 25 of the Nuclear Energy Act, the licence shall include the conditions necessary for implementing the general principles referred to in Chapter 2 of the Nuclear Energy Act. Furthermore, the suggestions concerning safety that were included in the statement from the Radiation and Nuclear Safety Authority shall be taken into account.

Section 38 of the Nuclear Energy Decree contains provisions concerning the content of the licence decision.

Furthermore, the following issues shall be taken into account, among others: The provision in Section 13(2) of the Act on Environmental Impact Assessment Procedure (468/1994), according to which a licence decision on a project shall state in what manner the environmental impact assessment report and the statement by the coordinating authority on it have been taken into consideration.

Obligations to be taken into consideration during the licence consideration process are included in the following agreements, in particular:

- The agreement made on the implementation of Article III (1) and (4) of the Treaty on the Non-Proliferation of Nuclear Weapons between the nuclear-weapon-free member states of the European Union, the European Atomic Energy Community and the International Atomic Energy Agency (Finland's Statute Book No. 55/1995)

- Convention on Nuclear Safety (Finland's Statute Book No. 74/1996)

- Joint Convention concerning the safety of spent nuclear fuel and radioactive waste management (Finland's Statute Book No. 36/2001)

Processing of the application (TEM/2955/08.05.01/2012) and the statements provided concerning the application

A public notice concerning the construction licence application was published on 15 February 2013 in the following newspapers: Helsingin Sanomat, Hufvudstadsbladet, Länsi-Suomi, Satakunnan Kansa, Turun Sanomat and Uusi Rauma. The public notice and construction licence application are available at the website of the Ministry of Employment and the Economy (address: www.tem.fi).

The construction licence application was available for public viewing between 15 February 2013 and 30 September 2013 at the offices of the municipalities of Eurajoki, Eura, Luvia and Nakkila and the city of Rauma.

In cooperation with the applicant, the Ministry of Employment and the Economy arranged two events during the processing of the application in order to present the project and related regulatory evaluation. A presentation and discussion event for authorities, the municipality of Eurajoki and its neighbouring municipalities and the city of Loviisa was arranged in Helsinki on 13 June 2013. An open discussion event was arranged in Helsinki on 12 September 2013.

Statements on the application were requested from the following parties: The provincial government of Åland, the State Department of Åland, Akava, the Confederation of Finnish Industries (EK), Finnish Energy Industries, the Regional State Administrative Agency of Southern Finland, the municipality of Eura, the municipality of Eurajoki, Greenpeace Finland, the Ministry of Transport and Communications, the Regional State Administrative Agency of Southwest Finland, the city of Loviisa, the municipality of Luvia, the Ministry of Agriculture and Forestry, the Finnish Central Union of Agricultural Producers and Forest Owners (MTK), the municipality of Nakkila, Natur och Miljö r.f, the Ministry of Defence, the city of Rauma, the Centre for Economic Development, Transport and the Environment in Satakunta, the Rescue Services in Satakunta, Regional Council of Satakunta, the Ministry of Social Affairs and Health, the Ministry of the Interior, the Central Organisation of Finnish Trade Unions (SAK), the Finnish Association for Nature Conservation, the Finnish Environment Institute, the Federation of Finnish Enterprises, the Finnish Confederation of Professionals (STTK), the Radiation and Nuclear Safety Authority, the Finnish

Safety and Chemicals Agency (Tukes), the Ministry for Foreign Affairs, the Ministry of Finance, the Centre for Economic Development, Transport and the Environment in Southwest Finland, WWF Finland, the Ministry of the Environment.

The following organisations did not submit a statement: The Confederation of Finnish Industries (EK), Greenpeace Finland, the city of Loviisa, the municipality of Luvia, the Finnish Central Union of Agricultural Producers and Forest Owners (MTK), Natur och Miljö r.f., the Finnish Environment Institute, the Federation of Finnish Enterprises, the Finnish Confederation of Professionals (STTK), WWF Finland.

Other statements and opinions were also presented during the hearing procedure; two of these were made by organisations and two by private individuals.

Statements required by the Nuclear Energy Act and Decree

Ministry of the Interior

The rescue services department of the Ministry of the Interior considers it important to maintain close cooperation between the local rescue services, the parties that participate in rescue activities and the parties implementing the project, since the specific characteristics of the project – such as the underground location and the presence of hazardous substances – create exceptional conditions for the provision of rescue services. The project shall assess its potential impact on the rescue services arrangements, the changes in regional risks and the maintaining of the level of rescue services during construction and operation. Furthermore, attention must be paid to the protection or evacuation of the members of the public during an accident and the effect on traffic arrangements, for example, that the preparation for and implementation of these measures may have.

Ministry of Social Affairs and Health

In its statement, the Ministry of Social Affairs and Health states that the construction of the encapsulation plant and disposal facility was preceded by a long planning process including land use planning. The safety design and implementation relying on multiple release barriers will guarantee a high level of radiation safety for the members of the public during operation as well as in the long term. Following the suggested principles of work hygiene during transport and encapsulation ensures that workers will receive a high level of protection against the harmful impact of radiation. According to the Nuclear Energy Act and the Radiation Act, the Radiation and Nuclear Safety Authority is responsible for supervising the safety of the use of nuclear energy and exposure that may be hazardous to health. In addition to radiation exposure, the activities during the construction stage shall take into consideration the general legislation concerning work safety and employment relationships as well as the regulations concerning the safety of construction work. The labour protection authorities are responsible for monitoring that these regulations are followed.

The Ministry of Social Affairs and Health further states that a systematic approach to disposal will improve safety when compared to the interim storage of spent nuclear

fuel, which mostly takes place in water pools. Security arrangements are also easier to arrange in connection with disposal than during long-term interim storage.

The Ministry of Social Affairs and Health takes a positive stance towards the Government issuing a construction licence for the encapsulation plant and disposal facility at Olkiluoto, making it possible for the disposal of nuclear waste to begin according to plan in the early 2020s.

The Ministry of Social Affairs and Health emphasises that the legislation concerning the nuclear energy industry requires that the encapsulation plant and disposal facility construction licence applicant has the necessary know-how, an appropriately managed organisation and the necessary financial prerequisites to operate in the manner required by the law. It is the understanding of the Ministry of Social Affairs and Health that the construction licence applicant has provided the required analyses concerning these prerequisites in the application that it submitted to the Government.

The Ministry of Social Affairs and Health emphasises that active research for optimal solutions can also continue after the construction licence has been granted.

The Ministry of Social Affairs and Health emphasises that the holistic development of nuclear waste management also benefits healthcare more generally, since the low and intermediate level waste repository (VLJ repository) located at Olkiluoto is also used to store radiation sources that originate from healthcare operations. However, the radioactivity of these radiation sources is only a small part of the overall inventory of nuclear waste management.

Ministry of the Environment

The Ministry of the Environment states that the application is lacking a clear, illustrative timeline that would indicate which matters are still under investigation and what the suggested approach is concerning these matters. It is difficult to form an overall picture of the project when information concerning pending investigations and future solutions has been scattered across the different appendices to the application and there is no overall summary available.

The Ministry of the Environment notes that Posiva requests that the Radiation and Nuclear Safety Authority be granted permission to approve changes to the suggested design solutions, stating material changes, changes to component dimensions and changes to the installation of the disposal canisters as examples. The application does not clearly determine whether these examples are the only design solutions, the approval of which should be transferred to the authority, or whether the applicant requests that the Radiation and Nuclear Safety Authority be given an open mandate to approve all changes concerning design solutions. The latter option is problematic, since it would mean, in an extreme situation, that the construction licence decision would transfer decision-making authority from the Government to the Radiation and Nuclear Safety Authority.

According to the Ministry of the Environment’s statement, a review of environmental impacts would have been necessary in connection with the transport of spent

nuclear fuel, especially as concerns accidents. The Government's decisions in principle from 2000 and 2010 are binding in this respect.

The Ministry of the Environment also pays attention to the fact that the facility will require renovation and modernisation during its period of operation. As part of the up-to-date analysis of environmental impacts, it would have been appropriate to estimate the potential effects of the renovation in terms of the environment and the safety of the facility.

According to the statement by the Ministry of the Environment, it is essential that the monitoring of environmental impacts is continued and that the parameters monitored are specified or added if necessary in order to allow for the detection of unexpected changes during construction and for the provision of an appropriate response. The monitoring must continue throughout the active service life of the facility and even after its closure in order to ensure that the facility is operating as designed and that the environment in the region slowly returns to the state that it was in before construction started.

Regional State Administrative Agency of Southern Finland

The Regional State Administrative Agency of Southern Finland reported that it will not submit a statement on the matter.

Regional State Administrative Agency of Southwest Finland

It is the opinion of the Regional State Administrative Agency of Southwest Finland that the operation of the encapsulation plant and disposal facility, the transport systems for spent nuclear fuel and disposal canisters and the structures related to the operation of the facility must be designed so as to be as safe as possible. The transport into the ONKALO facility of explosives used in rock engineering and their storage and handling in underground facilities, however minor, must be designed so as to be absolutely safe during the disposal activities. As far as the planning of the operation of the facility and the emergency preparedness arrangements are concerned, special attention must be paid to accidents where an explosion, collapse, fire or other type of accident may cause the situation to escalate into a simultaneous radiological emergency.

The occupational safety representatives of the Regional State Administrative Agency of Southwest Finland state that the applicant has considered the safety of workers under normal conditions, exceptional conditions and emergencies. However, the application and its appendices do not indicate how and to what extent the evaluations have been completed and how the safety of workers has guided the planning of the construction and operation of the facility. It remains unclear how the obligations set forth in the Occupational Safety Act and the decrees subordinate to it are met.

Centre for Economic Development, Transport and the Environment in Satakunta

The Centre for Economic Development, Transport and the Environment in Satakunta states that it has no comments on the matter.

Radiation and Nuclear Safety Authority (STUK)

In accordance with Section 37(3) of the Nuclear Energy Decree, the Radiation and Nuclear Safety Authority has requested a statement from the Ministry of the Interior concerning the plans for security arrangements and emergency arrangements. The Radiation and Nuclear Safety Authority has enclosed with its statement a special analysis concerning the documents referred to in Section 35 of the Nuclear Energy Decree and a safety assessment. In accordance with the Nuclear Energy Decree, the Radiation and Nuclear Safety Authority has also enclosed with its statement a statement from the Advisory Committee on Nuclear Safety.

In its statement, the Radiation and Nuclear Safety Authority states that it has supervised the construction of the research facility with the same procedures as it uses in the supervision of the construction of a nuclear facility. The Radiation and Nuclear Safety Authority has presented the areas needing improvement that it discovered during its review of the safety case in a separate decision issued to Posiva; this decision required that the areas needing improvement be taken into consideration in the operating licence application documentation.

According to the Radiation and Nuclear Safety Authority, the plans presented by Posiva are sufficient and appropriate for the construction licence stage in terms of the safety of workers and the members of the public, with the following remarks and limitations:

- Posiva has submitted to the Radiation and Nuclear Safety Authority a plan concerning the specification of the system design of the nuclear waste facility, and STUK will supervise the progress of the design work.

- Posiva has submitted to the Radiation and Nuclear Safety Authority a plan concerning the installation tests performed on the disposal system parts, and STUK will use tests to inspect the installation readiness of the system before the excavation of the disposal tunnels can begin.

- During the construction of the first disposal tunnels, Posiva must demonstrate the reliability of the bedrock classification system. The Radiation and Nuclear Safety Authority will inspect the functionality of the bedrock classification system as part of the supervision of the positioning and rock engineering of the first disposal tunnels.

- Posiva has submitted to the Radiation and Nuclear Safety Authority a development plan for the disposal concept, which is based on release barriers. The Radiation and Nuclear Safety Authority supervises the progress of the development work under the programme during the period between the construction licence and the operating licence.

As regards the disposal location, the Radiation and Nuclear Safety Authority states that the site studies and the analyses concerning probable developments at the site that extend far into the future are sufficient in terms of the construction licence and that they have not brought up any issues that would indicate that the disposal site selected is not beneficial in terms of long-term safety. Further research also indicates

that the planned location is appropriate for a nuclear waste facility in terms of operational safety and long-term safety, and that environmental protection has been taken into account during the planning of the activities.

According to the Radiation and Nuclear Safety Authority, Posiva's plans for the implementation of security arrangements are sufficient and appropriate with the following specifying remarks. The security standing order must be confirmed before construction is started. The details of the security arrangements planned for the construction period must be specified before construction is started.

According to the Radiation and Nuclear Safety Authority, Posiva has presented sufficient and appropriate arrangements for the construction licence stage and a plan for the processing and disposal of the nuclear waste generated during the operation as well as a plan for the decommissioning of the facility, with the following additional remarks and limitations: Posiva must present to the Radiation and Nuclear Safety Authority more detailed plans on the future low and intermediate level waste repository of the disposal facility and a more specific assessment of the combined effects of the different types of nuclear waste intended to be disposed in Posiva's facility before starting the construction of the disposal repository.

It its decision, the Radiation and Nuclear Safety Authority has approved the analysis concerning the regulatory control opportunities provided to the Radiation and Nuclear Safety Authority that Posiva submitted together with its construction licence application. According to the Radiation and Nuclear Safety Authority, Posiva's arrangements for the implementation of regulatory control are sufficient and appropriate.

The Radiation and Nuclear Safety Authority has assessed the competences of Posiva's personnel and the external expertise available to Posiva during the processing of the construction licence application on the basis of document reviews and a separate inspection programme. Posiva employs sufficient and extensive expertise concerning the construction of a nuclear waste facility.

Concerning the financial prerequisites for the implementation of the project and the activities, the Radiation and Nuclear Safety Authority also states that Posiva's arrangements are sufficient and appropriate.

The Radiation and Nuclear Safety Authority states the following concerning Posiva's other prerequisites to engage in operations safely and in accordance with Finland's international contractual obligations: The Radiation and Nuclear Safety Authority has approved Posiva's management manual describing its management system and, at Posiva's application, the responsible manager for the construction of the nuclear waste facility. Furthermore, it is the opinion of the Radiation and Nuclear Safety Authority that the retrievability of the disposed nuclear waste is technically feasible and that reopenability does not put the long-term safety of disposal at risk. The Radiation and Nuclear Safety Authority is not aware of any aspects that would prevent horizontal placement from meeting the safety requirements. Furthermore, the transport of spent nuclear fuel can be implemented on the basis of Posiva's plans. The safety of transport is ensured separately and shipments may only be started once the Radiation and Nuclear Safety Authority has determined that the transport arrangements and the

required safety arrangements and emergency arrangements meet the appropriate requirements.

In conclusion, the Radiation and Nuclear Safety Authority states that the prerequisites for granting a construction licence and the principles laid down in the Nuclear Energy Act are met. The spent fuel encapsulation plant and disposal facility proposed by Posiva can be constructed to be safe.

A statement from the Advisory Committee on Nuclear Safety is enclosed with the Radiation and Nuclear Safety Authority's statement. It is the considered opinion of the Committee that STUK has carried out a comprehensive and professional safety assessment on the construction licence application. The assessment contains aspects due to which the design documentation must be supplemented as work progresses closer to implementation and preparation for an operating licence application. Considering that the project for the disposal of spent nuclear fuel is of a pioneering nature on a global scale, it is justified to advance gradually in planning and implementation. STUK has found that the prerequisites for issuing a construction licence are met. The Committee is not aware of any aspects of operational or long-term safety that would prevent issuing a construction licence.

Centre for Economic Development, Transport and the Environment in Southwest Finland

The Centre for Economic Development, Transport and the Environment in Southwest Finland states that it has provided a statement to the Ministry of Employment and the Economy on 10 June 2010 concerning the preliminary analyses and plans of the spent fuel disposal project. It stated that the nuclear waste encapsulation plant and disposal activities constitute waste handling that requires an environmental licence, according to Section 28.2(4) of the Decree on environmental protection. The Waste Act (646/2011) that was adopted on 1 May 2012 states that the Act is not applied to nuclear waste referred to in the Nuclear Energy Act or to radioactive waste referred to in the Radiation Act. The construction licence application was submitted 28 December 2012, which means that the Waste Act is not applied to the encapsulation plant and disposal facility; this also removes the need for an environmental permit pursuant to the Environmental Protection Act.

In its statement, the Centre for Economic Development, Transport and the Environment in Southwest Finland also states that the land use plan that entered into force on 5 May 2011 reserved the areas and building volumes for the construction of the encapsulation plant and disposal facility.

Furthermore, The Centre for Economic Development, Transport and the Environment in Southwest Finland states that, in addition to the comprehensive bedrock and groundwater studies, it is important that the impacts and the sufficiency of the applicability criteria are regularly evaluated during the long construction and disposal activities. In the long-term assessment in particular, it should be taken into consideration that even though the excavated spaces are filled, the strength, integrity and water conductivity properties of the bedrock with its extensive network of tunnels and holes, and the flow conditions and geochemical properties of the groundwater within the bedrock, will differ from those of the original bedrock in its natural state. The

monitoring of the integrity of the waste area and of the canisters should be focused in a manner whereby even individual deviations can be anticipated, observed and located.

The Centre for Economic Development, Transport and the Environment in Southwest Finland states that there are no locations nearby significant from the perspective of environmental protection. Construction or disposal are not likely to significantly affect the environmental value, based on which the nearby Natura areas of the Rauma archipelago (FI 0200073) were included in the Natura network.

As regards traffic, the Centre for Economic Development, Transport and the Environment in Southwest Finland states that it will only comment on the road transport options. The application presents two different route alternatives for road transport; in particular, the northern route option has been described in a somewhat unclear manner. The transport authorities should receive information concerning the transport options and routes in good time. This will provide the authorities with ample time to improve the road network in terms of specific intersections, for example, before the transport begins.

The Centre for Economic Development, Transport and the Environment in Southwest Finland reminds the applicant that if a road transport is wider, longer or heavier than what is specified in the Ministry of Transport and Communications' decree on special transport and vehicles, permission for the transport should also be sought from the Centre for Economic Development, Transport and the Environment in Pirkanmaa. As regards road transport, transport should take place outside of the summer months and outside of rush hours.

The Centre for Economic Development, Transport and the Environment in Southwest Finland also reminds the applicant that the road traffic centres and regional rescue services should receive advance information on the schedules. Route inspections and active communication are of vital importance.

Statements from the neighbouring municipalities of the plant site

Municipality of Eura

In its statement, the municipality of Eura states that the Radiation and Nuclear Safety Authority is responsible for verifying that the radiation safety requirements and nuclear safety requirements of the project are met and that the project is safe. If the Radiation and Nuclear Safety Authority's overall assessment and statement concerning the construction licence for the encapsulation plant and disposal facility is favourable, the municipality of Eura does not object to the granting of the licence.

Municipality of Eurajoki

In its statement, the municipality of Eurajoki states that the preparation of the project in stages has substantially helped the municipality to receive information on the verification of safety. The Radiation and Nuclear Safety Authority has submitted a statement on the preliminary application to the Ministry of Employment and the

Economy in autumn 2010 and a detailed draft of the safety assessment to Posiva Oy in the summer of 2011. The municipality of Eurajoki finds that the Radiation and Nuclear Safety Authority's approach, which develops the rules of disposal in stages as more knowledge is gathered, is good.

Furthermore, the municipality of Eurajoki states that the Radiation and Nuclear Safety Authority will submit to the Ministry of Employment and the Economy a statement that contains the conclusions concerning safety. The Government will grant or reject the construction licence. Although the Government is not legally bound by the conclusions presented by the Radiation and Nuclear Safety Authority, they should be given decisive priority in decision-making.

The conclusion presented in the construction licence application is that the encapsulation plant and disposal facility can be constructed and operated safely. If the safety assessment by the Radiation and Nuclear Safety Authority arrives at the same result, the municipality of Eurajoki can agree with the conclusion of the construction licence application.

Municipality of Nakkila

The municipality of Nakkila states that, in general, it is a responsible approach to process and store domestically generated spent nuclear fuel in Finland. The municipality also considers it responsible that the best expertise available in the world is used as the basis for the planning and decision-making concerning the placement. In the statement, the municipality discusses issues that its residents have pondered over the years, as discussion on the disposal of spent nuclear fuel has been ongoing in Finland.

It is the considered opinion of the municipality of Nakkila that the Government has the prerequisites to grant Posiva Oy a construction licence for a spent nuclear fuel encapsulation plant and disposal facility at Olkiluoto in Eurajoki.

City of Rauma

According to the statement by the city of Rauma, it is essential that the licence procedure is approved by the Radiation and Nuclear Safety Authority, and that the plant is constructed, and its construction is supervised, using the procedures laid down in the Nuclear Energy Act and decrees subordinate to it. The processing of the application by the Radiation and Nuclear Safety Authority also explains the modelling calculations used as the foundation for the conclusions of the application.

It is the opinion of the city of Rauma that the disposal of spent nuclear fuel is a question that needs to be solved. The Government has previously made decisions in principle concerning the construction of a disposal facility, and Parliament has approved these decisions in principle. The construction licence application is a logical continuation of this process.

The city of Rauma also states that the environment committee is aware of opinions that question the safety of the disposal of nuclear waste. However, it is not aware of

any facts that would necessitate rejecting Posiva Oy's licence application or changing the disposal plan.

Other statements and opinions

Ministry of Transport and Communications

The Ministry of Transport and Communications has requested statements from the Finnish Transport Agency and the Finnish Transport Safety Agency (Trafi). In its statement, the Ministry states that the different means of transport have been compared in the appendix to the application, and that road and rail transport are stated to be more sensitive to disturbances than sea transport; however, the risk assessment has mostly been of a technical nature. Societal risks are mentioned, but they have not been analysed and assessed further even though land transport would pass through or nearby several population centres in all options.

The Ministry of Transport and Communications states that, at present, Finland has only legislative provisions concerning tunnel limitations for the transport of dangerous goods. The Ministry and the Finnish Transport Safety Agency aim to begin preparations for the national introduction of tunnel limitations. As regards rail transport, attention should be paid to accidents at railroad crossings and securing transfers outside the Loviisa and Rauma ports.

The Ministry of Transport and Communications notes that the application suggests shipping via Hästholmen in Loviisa instead of the Valko port. Since Hästholmen has no port or sea route, these would need to be constructed. The Finnish Transport Agency has not made preparations for this, and building a private sea route and port requires a process lasting several years. The party responsible for the project should contact the sea routes unit of the Finnish Transport Agency at an early stage of planning in order to set the process in motion.

The Ministry of Transport and Communications also suggests that, when comparing and planning the sea transport route alternatives, the Finnish Transport Agency's sea traffic control unit must consulted in order to receive information on the current traffic on the routes and the local conditions.

The Ministry of Transport and Communications also stresses that the Act on the Transport of Dangerous Goods (719/1994) and the decrees and regulations concerning rail, road and air transport as well as single consignments on board issued by virtue of the Act are also applied to the transport of radioactive substances. The international conventions governing the transport of radioactive substances apply to international transports insofar as they are in force and binding on Finland.

The Ministry of Transport and Communications emphasises that, as a rule, a radiation protection programme must be in place for the transport of radioactive substances and it must consist of systematic arrangements that aim at achieving a sufficient level of radiation protection.

It is the opinion of the Ministry of Transport and Communications that the facility should also prepare for the risks that transport activities outside of the facility may cause. These disturbances may include a nearby transport accident involving dangerous goods on land, at sea or in the air and its consequences on the operation of the facility (an oil spill at sea, for example).

The Ministry of Transport and Communications also states that cooperation between the authorities and concrete advance planning with defined responsibilities is critically important when arranging transport of this nature.

Ministry of Agriculture and Forestry

The Ministry of Agriculture and Forestry states that it has no comments on the matter as regards its own area of responsibility.

Ministry of Defence

The Ministry of Defence reported that it will not submit a statement on the matter.

Ministry for Foreign Affairs

In its statement, the Ministry for Foreign Affairs favours the granting of a construction licence for a spent nuclear fuel encapsulation plant and disposal facility.

Ministry of Finance

The Ministry of Finance reported that it has no comments on the matter.

Satakunta Rescue Services

The Satakunta Rescue Services state that the encapsulation plant and disposal facility are challenging in terms of personal safety due to several reasons. The only exit from the underground facilities is a long passage, and a safe exit is only possible in practice when machine power is employed. In case of fire, controlling the smoke is difficult since the tunnel is long and has a dead end. The underground location also poses challenges in terms of reliability of communications. Underground rescue activities are difficult and ensuring the safety of rescuers is challenging.

In the statement, the Rescue Services state that the operator should identify all regulations and stipulations concerning safety and apply them from the first stages of design.

The Rescue Services also state that the encapsulation plant and disposal facility should be addressed as a whole in different analyses, while taking the effects of different parts on the entire facility into consideration. The special nature of the facility should also be considered. An evaluation from an independent expert must be acquired on the reliability of the modelling and other analysis methods used.

The Rescue Services also note that the rooms where no radioactive substances are processed also have an impact on the safety of the encapsulation plant and disposal facility. The principle of low fire loads and safe solutions must be applied across the

facility. The Rescue Services also remark that a reliable method must be used to assess the sufficiency of a safe distance for the storage of explosives.

The Rescue Services also mention that the rescue authority will likely set specific safety requirements referred to in Section 82 of the Act on Rescue Services for the encapsulation plant and disposal facility during the construction permit procedure. These requirements will be specified later.

Regional Council of Satakunta

Regional Council of Satakunta states that construction at the disposal site is in line with the Satakunta provincial plan which was confirmed on 30 November 2013 by the Ministry of the Environment, and that the area reservations within the provincial plan do not prevent the construction of a spent nuclear fuel disposal facility.

According to the Regional Council of Satakunta, the latest technical knowledge and research methods must always be available during the planning and implementation of the activities. The Regional Council of Satakunta emphasises the importance of the analyses when deciding on the final implementation. The importance of the statement from the Radiation and Nuclear Safety Authority is emphasised when the final decisions concerning construction are evaluated.

Finnish Safety and Chemicals Agency (Tukes)

The Finnish Safety and Chemicals Agency (Tukes) states that it has no comments on the application. As the activities expand, the handling and storage of explosives and other potentially dangerous chemicals used in rock engineering may require permission from Tukes. Land use planning must take the protective zones required by an above-ground explosives storage into account.

Provincial government of Åland

In its statement, the provincial government of Åland questions whether sea transport is a suitable method of transport for spent nuclear fuel. The provincial government also expresses its concern as to whether copper is suitable for the disposal of spent nuclear fuel and refers to research results from recent years.

State Department of Åland

The State Department of Åland states that the largest risks for Åland are related to the transport of radioactive substances. The risks of the transport, including risks of collision and related effects, must be assessed. The risk assessment must be completed in cooperation with the rescue authorities. Radioactive discharges into the environment must be prevented or minimised. In accidents, information must be provided in Finnish and Swedish, at a minimum. Furthermore, the State Department of Åland proposes that the members of the public should receive advance information on the transport of nuclear fuel.

Akava ry

Akava ry reports that it has no comments on the matter.

Finnish Energy Industries

It is the considered opinion of the Finnish Energy Industries that the construction licence application by Posiva Oy demonstrates that the company has excellent prerequisites for the construction of a spent nuclear fuel encapsulation plant and disposal facility in accordance with the Nuclear Energy Act.

Central Organisation of Finnish Trade Unions (SAK)

The Central Organisation of Finnish Trade Unions (SAK) favours the granting of a construction licence if the Radiation and Nuclear Safety Authority produces a favourable statement and safety assessment concerning the construction licence application.

Finnish Association for Nature Conservation

The Finnish Association for Nature Conservation states that Posiva's project is an international pilot project. The factors behind the scientific disputes must be analysed openly and broadly. The authority over the design solutions must not be transferred from the Government to the Radiation and Nuclear Safety Authority. If essential changes are introduced into the contents of the project, the EIA procedure must be restarted.

The experience and research results available from Sweden must be compiled and evaluated. Any compromises in terms of bedrock quality and the suspicions of copper corrosion are worrying.

It is the considered opinion of the Finnish Association for Nature Conservation that the application does not demonstrate that the site of the nuclear facility or the method of disposal is in line with the safety of the planned operations, environmental protection or the overall good of society. According to the information presently available, the planned encapsulation plant and disposal facility cannot be seen to meet the principles laid down in Sections 5–7 of the Nuclear Energy Act; thereby, a construction licence cannot be granted.

Due to the weaknesses of the site at Olkiluoto, Posiva Oy must be obligated to investigate a disposal solution that may be considered more applicable and geologically safer. These may include other geographic locations, underground dry storages and deep-drilled holes.

Comments and opinions

The comments provided by various organisations include remarks that relate to the tenure of the planned construction area and the long-term safety of the project. Comments by private individuals oppose the project.

Response from the applicant

In its response, Posiva has addressed the concerns presented in the statements, in particular as regards the application in general and the operational safety and long-term safety of the project.

As regards the application itself, Posiva discusses openness in communications, power of decision regarding changes to technical design solutions, land use rights and planning issues and the properties of the disposal site.

As regards operational safety, Posiva discusses nuclear safety and radiation safety, rescue safety and fire safety, transport of spent nuclear fuel, the long service life of the facilities and the arrangement of nuclear waste management for low and intermediate level waste.

Concerning long-term safety, Posiva discusses the availability of safety analysis documentation, glaciation, earthquakes, the sufficiency of the bedrock facilities and their restoration to their original state, the disposal depth and groundwater movement, spent nuclear fuel and release barriers. Posiva works in close cooperation with the Swedish company, Svensk Kärnbränslehantering Ab.

Statement by the European Commission

The statement by the European Commission is included in document no. C(2015) 1603, “Commission's views in accordance with Article 43 of the Euratom Treaty concerning the Construction of the Encapsulation Plant and the Repository for Spent Nuclear Fuel, Finland”. It is the considered opinion of the Commission that the investment project as a whole meets the objectives of the Euratom Treaty and, in particular, directive 2011/70/Euratom issued on 19 July 2011 establishing a Community framework for the responsible and safe management of spent fuel and radioactive waste.

The statement indicates that the applicant has informed the Commission of the project in the manner required by Chapter IV of the Euratom Treaty and the regulations issued by virtue of it.

Report to Parliament

On 18 May 2001, Finnish Parliament decided that the Government’s decision in principle of 21 December 2000 (M 7/2000) concerning Posiva Oy’s application for the construction of a disposal facility for spent nuclear fuel generated in Finland will remain in force. At the same time, Parliament obligated the Government to provide a report to Parliament concerning new research and technical developments before the construction licence is granted in order to ensure the safety of the disposal of nuclear waste.

The report to Parliament was submitted in the form of a Prime Minister’s announcement on 11 November 2015.

Preliminary analyses

The goals and schedules of the overall programme of nuclear waste disposal in Finland were initially defined in the Government's decision in principle of 10 November 1983 concerning the goals of research, analysis and planning in the field of nuclear waste management. On 23 October 2003, the Ministry of Trade and Industry specified the schedule for presenting a construction licence application for a spent nuclear fuel disposal facility via decision 9/815/2003: the preliminary analyses for a construction licence were required by the end of September 2009, and the analyses and plans for a construction licence were required by the end of 2012.

On 30 September 2009, Fortum Power and Heat Oy and Teollisuuden Voima Oyj submitted analyses to the Ministry of Employment and the Economy that indicate which parts of the documentation required for the construction licence are lacking in the opinion of the parties obligated to arrange the nuclear waste management, and what the manner and schedule for supplementing the documentation is. At the same time, Posiva submitted for information a draft of the documentation to be enclosed with the construction licence application as referred to in Section 32 of the Nuclear Energy Decree.

The Ministry of Employment and the Economy requested statements concerning the preliminary analyses and provided the parties issuing statements with the opportunity to familiarise themselves with the project and related documents.

DECISION

The Government has, by virtue of the Nuclear Energy Act (990/1987) issued on 11 December 1987 and the Nuclear Energy Decree (161/1988) issued on 12 February 1988, decided to grant, on the conditions stated below, Posiva Oy a licence referred to in Section 18 of the Nuclear Energy Act

> for the construction, at Olkiluoto in the municipality of Eurajoki, of an encapsulation plant and disposal facility for spent nuclear fuel generated in Finland and a disposal repository for the operating waste and decommissioning waste generated by the operation of the above facility, the main features and safety-related solutions of which correspond to what is presented in the construction licence application.

This licence will expire if the construction of the encapsulation plant or disposal facility is not started within two years of the date when the licence becomes legally valid.

Conditions for the licence

1. With the licence granted by virtue of this decision, the licensee is allowed to construct

1.1 an encapsulation plant and disposal facility for spent nuclear fuel, the total amount of which shall correspond to no more than 6,500 tonnes of uranium;

1.2 disposal repository facilities for the low and intermediate level operation and decommissioning waste from the encapsulation plant and disposal facility. Disposal repository facilities may be constructed to an extent where the rooms may contain a maximum of 1,500m^3 of low and intermediate level waste;

1.3 the structures and auxiliary facilities required for the operation of the encapsulation plant and disposal facility and the disposal repository;

1.4 the basic solution (vertical disposal tunnels) or a variation thereof (horizontal disposal tunnels).

2. Together with the operating licence application, the licensee shall submit an updated analysis of the environmental impacts of the plant complex.

3. Together with the operating licence application, the licensee shall submit an updated analysis of the retrievability of the spent nuclear fuel.

4. Together with the operating licence application, the licensee shall submit an updated analysis of the risks related to the transport of spent nuclear fuel.

5. Together with the operating licence application, the licensee shall submit an analysis of the changes that have been introduced into the project.

Justifications of the decision

Meeting of the prerequisites concerning the licensee

According to the extract from the Trade Register enclosed with the construction licence application, Posiva Oy is a Finnish limited-liability company. This means that the prerequisite concerning the licensee referred to in Section 17 of the Nuclear Energy Act is met.

Requirement concerning a valid decision in principle by the Government

At the request of the applicant, the Government on 21 December 2000 issued a decision in principle concerning the construction of a spent nuclear fuel disposal facility referred to in Section 11 of the Nuclear Energy Act. The Parliament retained the decision in principle in force on 18 May 2001.

The wording of the decision in principle is as follows:

- Construction of the final disposal facility for spent nuclear fuel produced during operation of the existing Finnish nuclear power plants, in such a form described in the application with regard to the main operating principles of the facility and the structures aimed at ensuring its safety, at Olkiluoto in the municipality of Eurajoki, is in the overall interest of society.

- On the basis of this decision in principle, final disposal facilities can be built for not more than the amount of spent nuclear fuel required by the final disposal needs assessed on the basis of the valid operating licences of the existing Finnish nuclear power plants, such that the total amount of nuclear fuel to be disposed of will be about 4,000 tonnes at most.

- This decision in principle concerning the final disposal facility means that the project can progress to the construction of underground research facilities and detailed site characterisation.

The decision in principle mentioned above will expire if a licence, referred to in Section 18 of the Nuclear Energy Act, for the beginning of the construction of a final disposal facility for spent nuclear fuel at Olkiluoto has not been applied for within 15 years from the date Parliament has taken a decision that the decision in principle enters into force.

At the request of the applicant, the Government on 17 January 2002 made a decision in principle concerning the construction of an extended spent nuclear fuel disposal facility referred to in Section 11 of the Nuclear Energy Act. The Parliament retained the decision in principle in force on 24 May 2002.

The wording of the decision in principle is as follows:

- The construction of an extended final disposal facility for the spent nuclear fuel produced in Finland in Olkiluoto in the municipality of Eurajoki referred to in the Government's decision in principle made on 21 December 2000, facilitating the treatment and disposal of the spent nuclear fuel generated by the nuclear power plant unit proposed in Teollisuuden Voima Oy's application for a decision in principle, submitted on 15 November 2000, is in line with the overall good of society.

- By virtue of this decision in principle, final disposal capacity can be constructed for the maximum amount of spent nuclear fuel as the need for final disposal capacity estimated on the basis of the operating licence of the said new nuclear power plant unit valid at any given time requires, so that the maximum total amount of nuclear fuel for which the final disposal can be constructed does not exceed an amount comparable to approximately 2,500 tonnes of uranium.

The decision in principle is valid until 19 May 2016 under the same preconditions as the decision in principle on the construction of a final disposal facility for spent nuclear fuel made by the Government on 21 December 2000, but it will expire should

the decision in principle on the construction of a new nuclear power plant unit proposed by Teollisuuden Voima Oy expires.

The Government states that, before this application was submitted, no construction licence for an encapsulation plant and disposal facility has been applied for by virtue of the decisions in principle issued on 21 December 2000 and 17 January 2002, that the encapsulation plant and disposal facility presented in the application correspond to the decisions in principle, and that the construction licence has been applied for before the deadline set in the decisions in principle.

Furthermore, the Government states that the decision in principle issued on 6 May 2010 that concerned the construction of an extended disposal facility for the disposal of spent nuclear fuel from the OL4 nuclear power plant unit expired on 30 June 2015, since Teollisuuden Voima Oyj decided not to apply for a construction licence for the OL4 nuclear power plant unit.

Meeting of the preconditions laid down in Section 19 of the Nuclear Energy Act

1) plans concerning the nuclear facility meet the safety requirements laid down in this Act, and appropriate account has been taken of the safety of workers and the population when planning the operations in question;

The application states that the spent nuclear fuel encapsulation plant will be designed in a manner whereby releases of radioactive materials into the environment remain insignificantly low during normal operation. Planning will also prepare for operational disturbances and accidents in a manner whereby the radiation dose limits set by the authorities are met. The starting point is that radiation exposure will be kept as low as reasonably achievable under all conditions.

According to the application, the design solutions of the facility are mostly based on existing technology. The technology in use at the encapsulation plant is in part similar to that used at the spent fuel interim storages at nuclear power plants. Finland and other countries have extensive experience in the design, construction and use of facilities inside bedrock. Finland has over 30 years of experience of handling spent nuclear fuel at nuclear power plants.

According to the application, some of the design is based on bespoke technology. Since the design stage of the disposal facility is long, new and experimental technical solutions can be tested and their functioning can be carefully demonstrated before they are commissioned.

The application presents that, in terms of long-term safety, the starting point for the design of disposal has been to isolate the radioactive substances from organic nature until such time as their level of activity has been reduced to a level where they can no longer cause harm to humans or the other nature.

The application estimates how the construction and operation of the encapsulation plant and disposal facility correspond to the requirements set in the Government Decree on the Safety of Disposal of Nuclear Waste (736/2008).

The Radiation and Nuclear Safety Authority considers that the plans for the encapsulation plant and disposal facility presented by Posiva are sufficient to meet the requirements for nuclear safety and radiation safety during the operation of the facilities. In a separate decision, the Radiation and Nuclear Safety Authority presents

areas needing improvement that the applicant must consider when drawing up the operating licence application documents or before the excavation of the disposal tunnels is started.

The Radiation and Nuclear Safety Authority considers that the plans presented by Posiva are sufficient and appropriate in terms of the safety of workers and the members of the public, but it also presents some remarks and limitations that must be considered before manufacture or excavation is started. The Radiation and Nuclear Safety Authority monitors that its remarks and limitations be taken into account.

According to the statement by the Regional State Administrative Agency of Southwest Finland, Posiva has assessed the safety of workers. The statement provides certain observations on occupational safety.

It is the considered opinion of the Government that the plans concerning the encapsulation plant and disposal facility meet the safety requirements laid down in the Nuclear Energy Act, and appropriate account has been taken of the safety of workers and the population when planning the operations in question;

2) The location of the nuclear facility is appropriate with respect to the safety of the planned operations and environmental protection has been taken into account appropriately when planning operations;

The application states that the location for the encapsulation plant and disposal facility is Olkiluoto. The plan is to construct the encapsulation plant in the middle of the island of Olkiluoto. In addition to the bedrock conditions, the location of the disposal facility is affected by the areas reserved for the construction of nuclear power plant units.

The application contains an analysis of the environmental impact of the encapsulation plant and disposal facility as well as of the design bases that are followed in order to avoid environmental damage and to limit environmental burden. The scale and extent of the impacts of construction are followed using a follow-up and monitoring programme. The application contains an updated environmental impact analysis as a separate appendix. Furthermore, the applicant has a documented and certified activity management system that meets the requirements of the international standard SFS-EN ISO 14001 as regards environmental matters.

According to the Radiation and Nuclear Safety Authority, knowledge of the site has increased substantially since the Government’s decision in principle. The site studies and the analyses concerning probable developments at the site that extend far into the future are sufficient in terms of the construction licence and they have not brought up any issues that would indicate that the selected disposal site is not beneficial in terms of long-term safety. The planned site is appropriate in terms of operational safety and

long-term safety, and environmental protection has been taken into consideration during the planning of activities.

The environmental authorities present some observations concerning the follow-up and reporting of environmental impacts and the shortcomings in the update. The Centre for Economic Development, Transport and the Environment in Southwest Finland also states that the project will not affect the Natura area and that no environmental permit is required for the implementation of the project.

Posiva has assessed the environmental impacts of the project in an EIA procedure completed in 1998–1999. At the same time, an international hearing was arranged in accordance with the convention on the assessment of cross-border environmental impacts (Espoo convention, Finland's Statute Book No. 67/1997).

As the contact authority defined in the Act on Environmental Impact Assessment Procedure, the Ministry of Trade and Industry on 5 November 1999 stated (1/815/98) that the EIA report met the requirements of the EIA Act and Decree and the goals set in the project's environmental impact assessment programme. The Ministry also stated that an analysis corresponding to the EIA report, supplemented to correspond with the present conditions and level of expertise at Olkiluoto, must be enclosed with the construction licence application.

It is the considered opinion of the Government that environmental protection has been appropriately accounted for in the planning of activities and that the requirements of the decisions in principle have been taken into account during the planning of the project. However, the Government considers it justified to include a condition in the licence granted concerning the updating of the environmental impacts, including transport risks and retrievability.

3) Physical protection has been taken into account appropriately when planning operations;

According to the application, physical protection is based on the requirements of Government statutes. The detailed plans and justifications are presented in the documentation submitted to the Radiation and Nuclear Safety Authority. Physical protection will be arranged in a manner that minimises the risks to the facilities caused by unlawful activities. Physical protection is based on the utilisation of several security zones placed within each other so that systems and components important to safety and nuclear material are given heightened protection and access control and the control of goods traffic is arranged effectively.

According to the Radiation and Nuclear Safety Authority, Posiva has presented plans that are sufficient and appropriate for implementing physical protection, on the condition that the security standing order is confirmed before construction is started and that the details of the physical protection arrangements planned for the construction period have been specified before construction is started.

The Government states that physical protection has been appropriately taken into consideration in the planning of operations and that the Radiation and Nuclear Safety

Authority will supervise the taking care of the arrangements in question by virtue of Section 55 of the Nuclear Energy Act.

4) A site has been reserved for the construction of a nuclear facility in a local detailed plan in accordance with the Land Use and Building Act (132/1999), and the applicant is in possession of the site required for the operation of the facility;

The application presents the siting of the encapsulation plant and disposal facility and the disposal repository at Olkiluoto. The areas related to the applicant's underground and above-ground operations are owned by Teollisuuden Voima Oyj (TVO). Posiva has signed a long-term lease with TVO and, accordingly, areas owned by TVO at Olkiluoto in Eurajoki are available when implementing the planned encapsulation plant, disposal facility and disposal repository.

The application states that the local plan for the disposal area at Olkiluoto was approved by the municipal council of Eurajoki in 2010. The local plan is legally valid.

In its statement, the Centre for Economic Development, Transport and the Environment in Southwest Finland confirms that the land use plan that entered into force on 5 May 2011 reserved the areas and building volumes for the construction of the encapsulation plant and disposal facility.

The Government states that the applicant is in possession of the site required for the operation of the encapsulation plant, disposal facility and disposal repository, and that the local plan in force in the area allows for the construction of the encapsulation plant, disposal facility and disposal repository.

5) The methods available to the applicant for arranging nuclear waste management, including final disposal of nuclear waste and decommissioning of the facility, are sufficient and appropriate;

The application presents the operation and decommissioning wastes generated by the operation of the encapsulation plant and disposal facility and the methods for arranging waste management. The decommissioning of the encapsulation plant is also presented.

According to the Radiation and Nuclear Safety Authority, Posiva has presented sufficient and appropriate arrangements for the construction licence stage and plans for the processing and disposal of the nuclear waste generated during the operation as well as plans for the decommissioning of the facility. The Radiation and Nuclear Safety Authority requires that Posiva present specified detailed plans concerning the repository for low and intermediate level waste and a specified estimate of the combined effects of the different nuclear waste types to be disposed of in the disposal facility before construction is started.

The Government states that the methods proposed by the applicant for the arrangement of nuclear waste management, the disposal of nuclear waste and the decommissioning of the nuclear facility are sufficient and appropriate.

6) The applicant's plans for arranging nuclear fuel management are sufficient and appropriate;

The application states that, after interim storage, Posiva will take care of the handling and disposal of spent nuclear fuel.

The Radiation and Nuclear Safety Authority states that it is not necessary to organise nuclear fuel management for the nuclear waste facility.

The Government states that the encapsulation plant and disposal facility are constructed for the disposal of spent nuclear fuel and no nuclear fuel management is required.

7) The applicant's arrangements for the implementation of control by the Radiation and Nuclear Safety Authority (STUK) as referred to in paragraph 3 of section 63 subsection 1, in Finland and abroad, and for the implementation of control as referred to in paragraph 4 of section 63 subsection 1 are sufficient;

The application states that, in order to demonstrate that the requirements of Section 63 of the Nuclear Energy Act are met, Posiva will submit a separate analysis to the Radiation and Nuclear Safety Authority when submitting the construction licence application.

In a decision, the Radiation and Nuclear Safety Authority has approved the analysis concerning the regulatory control opportunities provided to the Radiation and Nuclear Safety Authority that Posiva submitted together with its construction licence application. Posiva has completed personnel training concerning the practical activities required for the regulatory control exercised by the Radiation and Nuclear Safety Authority. According to the Radiation and Nuclear Safety Authority, Posiva's arrangements for the implementation of regulatory control are sufficient and appropriate.

The Government states that the applicant's arrangements are sufficient as regards the regulatory control referred to in Section 63 of the Nuclear Energy Act.

8) The applicant has the necessary expertise available;

In addition to its own personnel, Posiva has access to the expertise of the personnel employed by its owners as well as the expertise available through domestic and foreign partners and international networks. Posiva and its subcontractors have accrued experience of the requirements and methods related to the construction of a nuclear facility during the construction of the ONKALO facility.

The Radiation and Nuclear Safety Authority has assessed the competences of Posiva's personnel and the external expertise available to Posiva on the basis of inspections. The Radiation and Nuclear Safety Authority states that Posiva employs sufficient and extensive expertise concerning the construction of a nuclear waste facility.

The Government states that the applicant has the necessary expertise available.

9) The applicant has sufficient financial prerequisites to implement the project and carry on operations;

Posiva's financial prerequisites are taken care of by its owners, Teollisuuden Voima Oyj (TVO) and Fortum Power and Heat Oy (Fortum), both of which are responsible for arranging nuclear waste management. TVO is responsible for arranging nuclear waste management for the spent nuclear fuel from the Olkiluoto nuclear power plant, and for covering its costs. Correspondingly, Fortum is responsible for arranging nuclear waste management for the spent nuclear fuel from the Loviisa nuclear power plant, and for covering its costs. Posiva will become liable for the waste management of the operation and decommissioning waste from the encapsulation plant and disposal facility. Preparation for the management of these obligations is included in the nuclear waste management liabilities of TVO and Fortum.

According to the Radiation and Nuclear Safety Authority, Posiva's arrangements are sufficient and appropriate.

It is the considered opinion of the Government that the applicant has sufficient financial prerequisites to implement the project and carry on operations.

10) The applicant is otherwise considered to have the prerequisites to engage in operations safely and in accordance with Finland's international contractual obligations;

According to the application, a plan concerning emergency response arrangements is drawn up at the commissioning stage in preparation for accidents and the necessary radiation measurement equipment, communications equipment and alarm equipment are reserved at this time. The personnel is trained for emergency situations.

The rescue services department of the Ministry of the Interior considers it important to maintain close cooperation between the local rescue services, the parties that participate in rescue activities and the parties implementing the project, since the specific characteristics of the project – such as the underground location and the presence of hazardous substances – create exceptional conditions for the provision of rescue services.

It is the considered opinion of the Government that no aspects have arisen that would question the applicant's prerequisites for engaging in operations safely. Furthermore, the Government states that, in other respects too, the encapsulation plant, disposal facility and disposal repository can be taken care of in accordance with Finland's international contractual obligations.

The planned nuclear facility otherwise fulfils the principles laid down in Sections 5–7 of the Nuclear Energy Act.

The construction of a spent nuclear fuel encapsulation plant and disposal facility and a disposal repository for the nuclear waste generated during their operation is a part of the responsible and safe management of nuclear waste generated in Finland. It is in line with the overall good of society that the disposal facilities are constructed for

no more than the amount of spent nuclear fuel that may be generated in Finland during the duration of the operating licences currently in force for nuclear power plants, while taking into consideration the decisions in principle concerning the encapsulation plant and disposal facility.

No statements from authorities requested by the Ministry of Employment and the Economy have suggested that the project would not be in line with the overall good of society. On the other hand, some individual statements have either directly stated that the party opposes to the project or provided statements that may be understood to mean that the claimant finds that the project is not in line with the overall good of society. However, these statements contain no significant aspects that the Government and Parliament would not have been aware of when the decisions in principle were issued.

According to the statement by the Radiation and Nuclear Safety Authority, the prerequisites for granting a construction licence as referred to in Sections 18 and 19 of the Nuclear Energy Act and the principles set forth in Sections 5–7 of the Act are met. The spent fuel encapsulation plant and disposal facility proposed by Posiva can be constructed to be safe.

On the basis of the above, the Government states that the conditions for granting a construction licence are met.

Justification for the deadline for starting the construction of a nuclear facility

Taking into account the applicant's readiness to begin construction, which is apparent in the applicant's additional clarification dated 11 August 2015 and the supplementary information provided on 28 October 2015, the Government considers that the construction of the encapsulation plant and disposal facility should be started without delay. On the other hand, the deadline should not be so strict that it would limit the applicant's opportunities to schedule the construction to take place at the most beneficial time.

Validity and enforcement of the decision

By virtue of Section 31(2) of the Administrative Judicial Procedure Act (586/1996), the Government states that the decision can be enforced, since public interest requires that the execution is not delayed.

It is the considered opinion of the Government that the implementation of the project is in line with the overall good of society. The implementation of the project follows the Government's decision in principle from 1983 concerning the goals for research, analysis and planning in the field of nuclear waste management. It defines the goals and schedules for disposal, and it was supplemented in 2003 by a Ministry of Trade and Industry decision as regards the submission of the construction licence application.

Appeals

This decision may be appealed to the Supreme Administrative Court in writing. The decision may be appealed by the party who is bound by the decision or a party whose rights, liabilities or benefits are immediately affected by the decision. The decision may be appealed on the grounds of unlawfulness. The appeal letter must be delivered to the Registrar's Office of the Supreme Administrative Court within the appeal period. The appeal instructions can be found enclosed.

Fee

Posiva Oy has been charged a fee of EUR 58,900 for this decision; the fee has been set in the Government Decree concerning fees collected for Government Decisions related to the supervision of the use of nuclear energy (1474/2001).

Helsinki, 12 November 2015

Minister of Economic Affairs Olli Rehn

Chief Counsellor Jaana Avolahti