

Government Decision on Fortum Power and Heat Oy's application for a licence referred to in section 20 of the Nuclear Energy Act (990/1987) to operate a disposal facility for low- and intermediate-level waste until the end of 2090.

Adopted in Helsinki on 30 March 2023

Application

Only the Finnish-language licence is authentic

In its application of 18 March 2022, Fortum Power and Heat Oy (hereinafter also "the applicant" or "Fortum") has requested a licence referred to in section 20 of the Nuclear Energy Act (990/1987) to operate a disposal facility for low- and medium-level waste located in the city of Loviisa on the island of Hästholmen in the existing power plant site until the end of 2090.

The applicant proposes that, under the operating licence, the licensee may possess, handle, store and dispose

- a maximum of 50,000 m³ of low- and intermediate-level waste generated in connection with and as a result of the operations of the nuclear facilities in the Loviisa power plant site or other radioactive waste with properties equal to such waste,
- a maximum of 2,000 m³ of radioactive waste with an activity concentration equivalent to low- and intermediate level waste originating elsewhere in Finland, and
- a maximum of 50,000 m³ of waste with very low-level activity, generated in the dismantling of the buildings in the decommissioning of the nuclear power plant.

In its application, the applicant has provided the following information on the nuclear facility: the disposal facility for low- and intermediate-level waste is a nuclear facility within the meaning of the Nuclear Energy Act. The disposal facility is located in the plant site of the Loviisa nuclear power plant, and it is used in connection with the nuclear power plant and integrated into the power plant's operations. The halls of the disposal facility for low- and intermediate-level waste have been excavated for the purpose and are located at a depth of approximately 110 metres.

The disposal facility will allow for the disposal of all the radioactive waste, excluding spent nuclear fuel, generated during the operation and decommissioning of Loviisa nuclear power plant. The plan is also to dispose small amounts of radioactive waste generated elsewhere in Finland at the disposal facility.

The disposal facility has been built in stages, starting in the 1990s. The first phase of construction of the disposal facility was completed in 1997. The first phase of construction included the excavation of two maintenance waste halls (MWH1 and MWH2) and one hall for solidified waste. The disposal facility was expanded in 2010–2012 by building a third maintenance waste hall (MWH3).

The first two maintenance waste halls and the solidified waste hall are now being used for their intended purposes at the disposal facility. The third maintenance waste hall (MWH3) is currently being used as a long-term interim storage for nuclear waste. The plan is also to excavate new halls for the disposal of the radioactive waste generated in the decommissioning of Loviisa power plant, incorporating it into the existing disposal facility.

The disposal facility will be closed permanently once the radioactive waste generated in the decommissioning of Loviisa power plant has been disposed there, i.e., by the end of 2090 at the latest.

The applicant has appended to the application for an operating licence the information referred to in section 34 of the Nuclear Energy Decree (161/1988).

In its application for an operating licence, the applicant has requested that the Government, when granting the licence, shall decide pursuant to section 122, subsection 3 of the Administrative Judicial Procedure Act (808/2019) that the decision be enforced regardless of a possible appeal, given that enforcement of the decision should not be postponed due to the public interest.

In practice, the applicant justifies their request with the implementation of the National Programme for the Management of Spent Fuel and Radioactive Waste (National Programme), the first phase of which would be the disposal of nuclear waste and radioactive waste of VTT Technical Research Centre of Finland Ltd in accordance with a contract made between the companies.

Current operating licence

By decision of 2 April 1998 (1/812/1997), the Government has granted Imatran Voima Oy (now Fortum Power and Heat Oy) a licence referred to in section 20 of the Nuclear Energy Act

1. to use the disposal facilities to be constructed at the power plant site located in the 12th district of the City of Loviisa on the island of Hästholmen for the disposal of the low- and intermediate level waste resulting from the operation of nuclear power plant units Loviisa 1 and Loviisa 2 and from the storage of spent nuclear fuel, and also, if necessary, small amounts of waste resulting from other operations outside the Loviisa power plant site, until 31 December 2055.

The licence also covered the second phase of the disposal facility for solidified waste described in the application documents, or more precisely, getting the hall ready for use.

The name of Imatran Voima Oy was changed in 1999 to Fortum Power and Heat Oy. In connection with the name change, the licences of Imatran Voima Oy were deemed to have transferred to Fortum Power and Heat Oy. Fortum Power and Heat Oy is a subsidiary wholly owned by Fortum Oyj (“Fortum Corporation”).

Fortum Power and Heat Oy also holds a licence (19/A43774/2012, 5.2.2013) granted by the Radiation and Nuclear Safety Authority under section 41 of the Nuclear Energy Decree for the handling and interim storage of low- and intermediate-level waste in maintenance waste hall MWH3. The licence is valid until the end of 2055 or until the company has taken the measures required to fulfil licence condition 2. According to licence condition 2, converting maintenance waste hall MWH3 into disposal purposes will require a change in the operating licence of the disposal facility for low- and intermediate-level waste. Making that change also requires re-evaluating the need for an environmental impact assessment procedure.

Upon the company’s application, the Ministry of Economic Affairs and Employment has provided a binding advance ruling on the licence procedure required for the expansion of the disposal facility for low- and intermediate-level waste (VN/17832/2021, 15.12.2021).

In its decision, the Ministry considered that the expansion of the disposal facility will not require a Government Decision-in-Principle procedure in accordance with section 11 of the Nuclear Energy Act, nor a licence for the construction of a nuclear facility having considerable general significance in accordance with section 18 of the Act.

However, the Ministry’s decision does require that a licence to operate a nuclear facility in accordance with section 20 of the Nuclear Energy Act be obtained for the proposed activity so that the licence will also cover the disposal of the decommissioning waste resulting from the dismantling of Loviisa power plant and of nuclear waste and radioactive waste generated elsewhere in Finland. The company has applied for the licence referred to in the binding advance ruling, and

this decision concerns the application for that licence.

In its decision, the Ministry of Economic Affairs and Employment considered that the transitional provisions of section 84, subsections 3 and 6 of the Nuclear Energy Act were applicable to the expansion of the disposal facility for low- and intermediate-level waste in question. The construction of the disposal facility was carried out under the operating licence for the Loviisa 2 power plant unit (31/814/82 KTM). The construction began in February 1993, which is less than five years after the entry into force of the Nuclear Energy Act.

Applicable provisions

According to section 16, subsection 1 of the Nuclear Energy Act, a licence to operate a nuclear facility is granted by the Government. A licence to operate a nuclear facility under section 20 of the Act may be granted if:

1. the nuclear facility and its operation 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, and environmental protection;
2. the methods available to the applicant for arranging nuclear waste management, including disposal of nuclear waste and decommissioning of the facility, are sufficient and appropriate;
3. the applicant has sufficient expertise available and, in particular, the competence of the operating staff and the operating organisation of the nuclear facility are appropriate;
4. the applicant is otherwise considered to have the financial and other prerequisites to engage in operations safely and in accordance with Finland's international contractual obligations; and

the nuclear facility and the operation thereof otherwise fulfils the principles laid down in sections 5–7 of the Nuclear Energy Act.

According to section 5 of the Nuclear Energy Act, the use of nuclear energy, taking into account its various effects, shall be in line with the overall good of society. Furthermore, according to section 6 of the Nuclear Energy Act, the use of nuclear energy must be safe and it shall not cause harm to people or damage to the environment or property.

According to section 6a of the Nuclear Energy Act, nuclear waste generated in connection with or as a result of use of nuclear energy in Finland shall be handled, stored and permanently disposed of in Finland. Another prerequisite for

the use of nuclear energy prescribed in section 7 of the Nuclear Energy Act is that there are adequate security and emergency arrangements and other arrangements to limit nuclear damage and to protect the use of nuclear energy against activities that endanger nuclear or radiation safety.

A public notice shall be given on the licence application in accordance with section 23 of the Nuclear Energy Act. According to section 23 of the Nuclear Energy Act, a statement on the licence application shall be requested from the Radiation and Nuclear Safety Authority and the Ministry of the Environment and, in addition to these authorities, under section 37 of the Nuclear Energy Decree, at least from the Ministry of the Interior and from the Regional State Administrative Agency and the Centre for Economic Development, Transport and the Environment, within the jurisdiction of which the municipality and the neighbouring municipalities of the nuclear facility are located. The Radiation and Nuclear Safety Authority shall include in its statement a proposal for licence conditions which are necessary in order to implement the safety requirements in accordance with chapter 2a of the Nuclear Energy Act.

In addition, according to section 23a of the Nuclear Energy Act, the Ministry of Economic Affairs and Employment shall reserve the public an opportunity to express their opinions in writing in the matter related to the licence. The applicant shall be reserved an opportunity to submit an explanation on the opinions expressed on the application as well as on the statements requested under said section.

According to section 24 of the Nuclear Energy Act, the licence is granted for a fixed term. When considering the length of the term, particular attention shall be given to the estimated duration of the operations and ensuring safety. According to section 25 of the Nuclear Energy Act, the licence shall include the conditions that are necessary in order to implement the general principles referred to in chapter 2. The licensing authority shall also observe the proposals related to safety presented in the statement of the Radiation and Nuclear Safety Authority referred to in section 23. Provisions on the content of the licence are laid down in section 38 of the Nuclear Energy Decree.

According to section 25 of the Nuclear Energy Act, the licence shall include the measures presented by the licence applicant for preventing or reducing significant detrimental environmental impacts in the case of a project governed by the Act on Environmental Impact Assessment Procedure (252/2017, hereinafter also referred to as “the EIA Act”). Provisions on the obligation of the licensing authority to include in the licence decision the competent authority’s reasoned conclusion and to take the documents of the assessment procedure into consideration in the decision-making are laid down in section 25 of the Nuclear Energy Act and section 26 of the EIA Act.

Provisions on the licencing authority's obligation to ensure that the competent authority's reasoned conclusion is up to date are laid down in section 27 of the EIA Act.

According to section 26 of the EIA Act, the licence decision shall contain a reasoned conclusion, and appropriate consideration shall be given in the decision to the results of the public consultations concerning the assessment report and possible results of public consultations on transboundary impacts referred to in section 29. It shall be stated in the decision how the assessment report, reasoned conclusion and possible documents pertaining to the public consultations on transboundary impacts referred to in section 29 have been taken into account. According to section 27 of the EIA Act, the licencing authority shall ensure that the reasoned conclusion is up to date when the licence matter is decided on.

Environmental impact assessment procedure and the competent authority's reasoned conclusion

Fortum Power and Heat Oy carried out the environmental impact assessment (EIA) procedure in 2020–2022. In the EIA procedure, the company submitted an environmental impact assessment programme to the Ministry of Economic Affairs and Employment, which acts as the competent authority, in the summer of 2020, and the environmental impact assessment report was submitted in September 2021. The EIA procedure also included consultations in accordance with the Convention on Environmental Impact Assessment in a Transboundary Context (Espoo-Convention, Treaty 67/1997). The company discussed three options in the EIA procedure.

In option 1 (VE1), the company would continue to operate both units of the Loviisa power plant for a maximum of approximately 20 years after the currently valid operating licences. The use of the buildings and storage facilities necessary for the management of nuclear fuel and nuclear waste, and the operation of the disposal facility for low- and intermediate-level waste, would also continue, with the necessary expansions. The operations carried out at the nuclear power plant could also include the handling, interim storage and disposal of small amounts of radioactive waste generated elsewhere in Finland.

In option 0 (VE0), the nuclear power plant would be decommissioned after the expiry of the currently valid operating licences; that is, in 2027 and 2030. The use of the buildings and storage facilities necessary for the management of the nuclear waste at the nuclear power plant units and the operation of the disposal facility for low- and intermediate-level waste would continue until they became unnecessary and were decommissioned.

Option 0+ (VE0+) is the same as option VE0 in all other respects, except that it would also allow the handling, interim storage and disposal of small amounts of radioactive waste generated elsewhere in Finland at the nuclear power plant.

The Ministry of Economic Affairs and Employment issued a reasoned conclusion to the company on 10 January 2022 (VN/20577/2021). Based on an evaluation by the Ministry of Economic Affairs and Employment, the reasoned conclusion is still up to date. The environmental impact of the expansion of the disposal facility for low- and intermediate-level waste was discussed in chapters 4.3 and 4.4 of the reasoned conclusion.

Reasoned conclusion

The reasoned conclusion of the competent authority is based on the content requirements for the assessment report specified in section 19 of the Act on the Environmental Impact Assessment Procedure (252/2017) and section 4 of the Decree on the Environmental Impact Assessment Procedure (277/2017), the project description and surveys discussed in the assessment report, the survey results and their analysis, as well as the content of statements and opinions submitted.

The competent authority's reasoned conclusion must be included in the licence decision in accordance with section 26 of the EIA Act. The licence decision must indicate how the assessment report and the reasoned conclusion have been taken into consideration.

In the opinion of the Ministry of Economic Affairs and Employment, the options presented do not pose the kind of harmful environmental impacts that would be impossible to accept, prevent or mitigate to an acceptable level. The Ministry considered the impacts of the options individually on the basis of the licences required under the Nuclear Energy Act. In all options, the disposal facility for low- and intermediate-level waste will need a new operating licence that is separate from the operating licences of the power plant units. As a result, its impact has been discussed separately.

The report provides an adequate comparison of the different options. Overall, the environmental impacts of extended operations (VE1) are larger than those resulting from decommissioning (VE0 or VE0+), as the nuclear power plant must be ultimately decommissioned, even if its operations are extended for now. However, the assessment of environmental impacts of the options must also take into account the project's energy-economic significance, which is high nationally.

The handling, storage and disposal of waste generated elsewhere in Finland do not pose significant environmental impacts. However, the management of such waste

would have a positive impact on the national management of radioactive waste overall, as it would contribute to the sustainable and safe disposal of radioactive waste, regardless of its place of origin. The maximum amount of such waste handled at the Loviisa power plant is estimated to be 2,000 m³. The figure is small compared to the waste generated at the nuclear power plant.

The low- and intermediate-level nuclear waste generated during the operation and decommissioning of the nuclear power plant will be disposed of at the disposal facility for low- and intermediate-level waste. It has been estimated that the current capacity of the disposal facility will be sufficient for the disposal of the low- and intermediate-level waste generated during the proposed extended operation of the power plant. The disposal facility for low- and intermediate-level waste is planned to be expanded so that it can also be used for the disposal of decommissioning waste. The expansion is included in every option presented in the assessment report.

In the case of extended operation of the power plant units, the disposal facility for low- and intermediate-level waste would be closed by 2090. If the power plant units are decommissioned after the currently valid operating licences, the disposal facility would be closed by 2065. Before the decommissioning, the disposal facility for low- and intermediate-level waste, including the necessary auxiliary functions, would be made independent, as would be the other waste management functions. Making independent refers to the separation of the necessary functions such as cooling and air conditioning from the systems of the power plant units, so that the parts of the facility to be made independent can operate without the power plant units.

The most significant environmental impacts of expanding the disposal facility for low- and intermediate-level waste are the impact of bedrock excavation to the bedrock and groundwater as well as the blasted rock generated by the excavation and noise caused by crushing the blasted rock. The amount of waste generated elsewhere in Finland is small compared to the amount of waste generated at the power plant, and disposing the waste at the disposal facility has no significant impact on its operations.

The impact of expanding the disposal facility for low- and intermediate-level waste has been assessed to be minor and negative on soil and bedrock. However, the need for additional excavation is large in terms of volume. The estimated volume of the expansion of the disposal facility, which is located at a depth of more than 100 metres, is approximately 71,000 m³. The overall volume will thus be approximately 188,000 m³. According to the report, the expansion of the disposal facility will be designed in such a manner that it will not cause any harm to the existing disposal halls.

The expansion of the disposal facility for low- and intermediate-level waste will temporarily increase the amount of seepage water. The explosives used during excavation may affect the quality of groundwater locally. According to the assessment, the impact on groundwater is minor and negative. The Ministry of Economic Affairs and Employment emphasises the importance of further project planning addressing any local impacts on groundwater caused by the expansion, taking into account the safety significance of the waste.

The excavation work, crushing of blasted rock, and transportation will cause noise nuisance. The loudest noise is caused by any crushing of blasted rock above ground. Such noise may carry to the holiday homes on nearby islands and the mainland. According to the report, the impacts of noise are minor and negative. Taking into account the several years of expansion work and the location of holiday homes, it is important to mitigate the noise nuisance caused by the expansion of the disposal facility. The noisiest work should be timed appropriately to mitigate the nuisance.

The plan of utilisation for the blasted rock generated by the expansion of the disposal facility for low- and intermediate-level waste is to primarily use it as backfill material when the disposal facility is closed. It can also be used for landscaping after the dismantling stage, or possibly for earthworks outside the power plant site. According to estimates, the work will result in approximately 100,000 m³ of blasted rock. Its utilisation is considered to promote the circular economy, which is why the impact is assessed as being minor and positive. The Ministry of Economic Affairs and Employment finds that the amount of blasted rock is large, and it is therefore important to carefully plan its use.

The assessment report also discusses other impacts of the project options. These have been assessed as being of minor or no significance. The negative impact that expanding the disposal facility has on the quality of surface waters, vibration, air quality, traffic, waste and its treatment, as well as on people's comfort and living conditions, is minor. The expansion is not considered to cause any other environmental impacts.

Consideration of the assessment report and reasoned conclusion

The applicant has carefully taken into consideration the reasoned conclusion drawn up by the competent authority in its application. The company states that, as regards the expansion of the disposal facility, there are no such comments in the reasoned conclusion that would give rise to making changes to the company's existing plans proposed in the assessment report. However, the company states that it will take account of any noise nuisance caused by the excavation work, crushing of blasted rock and transportation, and will seek to mitigate such harm by various measures.

As part of the licence preparation, the Ministry has separately taken the statement dated 28/02/2022 into account as submitted by the Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology of Republic of Austria, as well as the attached opinion prepared by the Environment Agency Austria, in addition to the statement of the Ministry of Environment of the Republic of Lithuania dated 07/02/2022, as these arrived after the reasoned conclusion had been issued. Chapter 2 of the expert opinion received from Austria dealt with the management of nuclear waste generated during the operation and decommissioning of the Loviisa nuclear power plant. The expert opinion put forward that the questions put to Finland had been adequately answered and no recommendations were made in this regard. Lithuania stated that there was no need to continue the consultation.

Statements and opinions submitted

In accordance with section 23 of the Nuclear Energy Act, the operating licence application was submitted for information by means of a public notice together with the company's licence application for the Loviisa nuclear power plant. The Ministry also requested that public notice be made regarding the application by publishing a municipal announcement on electronic notice boards in the City of Loviisa, municipality of Myrskylä, municipality of Pyhtää, the City of Porvoo, municipality of Lapinjärvi, and City of Kouvola.

Public notice of the pending application for an operating licence has also been published in the following newspapers: Helsingin Sanomat, Hufvudstadsbladet, Kymen Sanomat, Uusimaa, Loviisan Sanomat, Östnyland, Itäväylä and Nya Östis. The Ministry also requested the Ministry of the Environment to deliver the licence application and translations of its relevant parts to each EU Member State that participated in the EIA procedure.

With the delivery, the Ministry requested that statements and opinions be provided on the application, and subsequently received 21 statements and opinions. The Ministry of Finance, the Finnish Environment Institute (SYKE) and Confederation of Finnish Industries (EK) announced that they will not issue a statement on the matter.

In response to the Ministry's request, statements on the application were provided by the Ministry of the Environment; Ministry of Social Affairs and Health; Ministry of the Interior; Ministry of Defence; Radiation and Nuclear Safety Authority, including its Advisory Committee on Nuclear Safety; Regional State Administrative Agency for Southern Finland; Centre for Economic Development, Transport and the Environment for Uusimaa; Helsinki-Uusimaa Regional Council; Finnish Safety and Chemicals Agency (Tukes); Eastern Uusimaa Emergency Services Department; Geological Survey of Finland; VTT Technical Research Centre of Finland Ltd; Fingrid

Oyj; City of Loviisa; City of Porvoo; municipality of Lapinjärvi; Technology Industries of Finland; the Federation of Finnish Enterprises; STTK ry, Natur och Miljö r.f.; and Finnish Association for Nature Conservation.

The following organisations did not issue a statement: the Ministry for Foreign Affairs, Ministry of Transport and Communications, Ministry of Agriculture and Forestry, Eastern Uusimaa Police Department, City of Kouvola, municipality of Myrskylä, the municipality of Pyhtää, Porvoo Museum, Fennovoima Oy, Teollisuuden Voima Oyj, Posiva Oy, AKAVA ry, Finnish Energy Industries (ET), Central Union of Agricultural Producers and Forest Owners (MTK), Central Organisation of Finnish Trade Unions (SAK), Greenpeace, and WWF. No opinions were submitted by private individuals.

The Ministry also requested a statement from the Ownership Steering Department of the Prime Minister's Office regarding the company's financial prerequisites for safe operation in accordance with Finland's obligations, based on international conventions and agreements. The statements and opinions are available to the organisation responsible for the project and others on the Ministry's website.

The Radiation and Nuclear Safety Authority states that the conditions for granting an operating licence to the disposal facility for low- and intermediate-level waste in Loviisa are met. In the opinion of the Radiation and Nuclear Safety Authority (hereinafter also referred to as "STUK"), the operating licence can be granted for the fixed term proposed by Fortum, provided that the licence condition proposed by STUK concerning the expansion of the facility is set in the operating licence. Furthermore, during the operation of the disposal facility, Fortum must carry out periodic safety review of the facility at least every 15 years (section 7e of the Nuclear Energy Act 990/1987).

STUK's statement is based on the safety review issued by STUK at the end of 2021 (STUK 5/A42215/2021, 17.12.2021, 'periodic safety review'), which STUK has evaluated to be still up to date. The safety review is carried out to assess the safety of the operation of the disposal facility for low- and intermediate-level waste if it continues in its current form. According to STUK's review, the safety status of the disposal facility for low- and intermediate-level waste is good in terms of operational and long-term safety, and the licensee has the necessary procedures and resources in place to continue safe operation.

STUK has discussed the expansion of the disposal facility separately in its statement. STUK finds that the expansion of the disposal facility for low- and intermediate-level waste will be significant in terms of the amount and activity concentration of the waste to be disposed of. In its statement, STUK also refers to STUK's decision (2/A42215/2018, 3/A42215/2019, 9.12.2019, 'safety case of the disposal facility'),

according to which the long-term safety requirements of the existing part of the disposal facility are met and that the planned expansion of the disposal facility can be carried out in such a way that the long-term safety requirements are met. Fortum will assess the safety of the disposal of waste generated elsewhere in Finland separately before starting the disposal of the waste batches in question, and deliver the assessment to STUK for approval.

In STUK's opinion, however, the documentation concerning the expansion of the disposal facility does not describe the plans and schedules for the expansion and the operation of the expanded facility in sufficient detail for STUK to be able to assess at this stage whether the expansion of the disposal facility complies with the requirements. In STUK's opinion, expanding the disposal facility requires that the plans for the expansion are reviewed and approved separately before starting implementation of the expansion.

The safety of expanding the disposal facility must also be assessed again separately on the basis of the final expansion plans. The plans can be submitted to STUK in accordance with the usual procedures well in advance of the construction of the new halls. Nuclear waste and radioactive waste generated elsewhere in Finland may also be disposed in the disposal facility, as long as the safety of the disposal of new types of waste has been separately assessed.

In its statement, STUK also refers to their statement on the Loviisa power plant (STUK 2/A42213/2022, 25.1.2023) with regard to the areas of safety management that span the entire company. First and foremost, these include security and emergency response arrangements, nuclear liability, and safeguards for non-proliferation of nuclear weapons.

In its statement, the *Advisory Committee on Nuclear Safety* states that, in its opinion, the conditions for granting an operating licence for the disposal facility for low- and intermediate-level waste in Loviisa are met. The Advisory Committee supports STUK's proposal for setting a licence condition concerning the expansion of the disposal facility. In like manner to STUK, the Advisory Committee notes that its previous statement on the periodic safety review of the disposal facility for low- and intermediate-level waste in Loviisa is still up to date. The comments made in the previous statement have been duly clarified.

In its statement, the *Ownership Steering Department of the Prime Minister's Office* states that the State's ownership of Fortum Corporation (51.25 per cent) is an effort to ensure sufficient electricity production in Finland under all circumstances. The State ensures that the company is able to carry out the above duty of ensuring security of supply without disturbances and that its long-term operational and investment capacity in the Finnish energy market is secured.

Over the past five years, Fortum Corporation has invested approximately EUR 325 million in the Loviisa nuclear power plant. The company has estimated that the investments related to extending the operations and service life to 2050 will total roughly one billion euros, which means investing tens of millions of euros per year, assuming that the investments are distributed evenly. According to Fortum Corporation's most recently published financial results information, the company has updated its investment outlook for 2022. At present, the company expects its investments in continuous operations, excluding corporate acquisitions, to amount to approximately EUR 550 million in 2022.

In the opinion of the Government Ownership Steering Department and based on currently known facts, Fortum Corporation's ability to generate results and cash flow from continuous operations is sufficient to operate the Loviisa nuclear power plant and to make the necessary investments. From the point of view of indebtedness, the company has the financial resources needed to carry out the operation of the Loviisa nuclear power plant and to finance the necessary investments.

Fortum's significant short-term uncertainty was related to the September negotiations on the stabilisation package for Uniper. On 19 December 2022, Fortum announced that Fortum, the German State and Uniper have signed agreements on the final terms of Uniper's stabilisation package. Uniper's Extraordinary General Meeting took decisions on the stabilisation package. As a result, the German State acquired all of Fortum's shares in Uniper and Uniper repaid the EUR 4 billion shareholder loan granted by Fortum. From the EUR 4 billion guarantee granted by Fortum, EUR 3 billion will be released by the end of 2022 and the remaining EUR 1 billion by the end of Q2/2023. The necessary official approvals have been obtained for the final implementation of the stabilisation package.

Financial provision for the cost of nuclear waste management and the decommissioning of nuclear facilities is ensured through the National Nuclear Waste Management Fund. According to the Nuclear Energy Act, Fortum has a financial provision obligation that Fortum must meet in full by making payments to the National Nuclear Waste Management Fund. The authorities will decide Fortum's fund target for a year in connection with determining the annual assessed liability under the financial provision obligation. Fortum has paid and will pay fund contributions to the National Nuclear Waste Management Fund in accordance with these decisions.

The Ministry of the Environment is in favour of granting the operating licence applied for the disposal facility for low- and intermediate-level waste in Loviisa.

The Ministry of the Environment considers it justified that low- and intermediate-level waste generated elsewhere in Finland, such as the radioactive waste generated

by the State, industry, universities, research institutes and hospitals and by dismantling the research reactor of VTT Technical Research Centre of Finland, could also be disposed of at the disposal facility for low- and intermediate-level waste.

The *Ministry of Social Affairs and Health's* opinion on the licence application for the extended operation of the disposal facility for low- and intermediate-level waste is favourable, provided that the Radiation and Nuclear Safety Authority (STUK) issues a positive safety review on both licence applications. The Ministry of Social Affairs and Health finds it positive that Fortum Power and Heat Oy is ready to provide services on market terms for the handling, storage and disposal of radioactive waste under the Radiation Act.

The Ministry of the Interior states that it has no comment to make on the matter.

The Ministry of Defence is in favour of granting the operating licence applied for and supports the approval of the operating licence application. The Ministry of Defence points out, however, that although the risks assessments of the disposal facility for low- and intermediate-level waste have been carried out meticulously, there is no experience of the actual risks of disposal. This affects the reliability of the risk assessment.

The environmental healthcare unit of the basic services, legal protection and permits division of the *Regional State Administrative Agency for Southern Finland* considers there to be no obstacles to the approval of the operating licence application. The environmental healthcare unit considers it appropriate that the disposal facility will also be prepared to receive, handle, store and dispose of small amounts of radioactive waste generated elsewhere in Finland.

The *Centre for Economic Development, Transport and the Environment for Uusimaa* did not make any comments on the disposal facility for low- and intermediate-level waste in its statement.

The Helsinki-Uusimaa Regional Council is in favour of extending the operating licence in accordance with the application.

The Finnish Safety and Chemicals Agency Tukes sees no obstacles to granting the operating licence from the perspective of chemical safety legislation (Act 390/2005, Decree 685/2015). The operation of the disposal facility for low- and intermediate-level waste does not involve the use of chemicals that are subject to supervision by the Finnish Safety and Chemicals Agency Tukes.

Geological Survey of Finland GTK is in favour of extending the operation of the disposal facility for low- and intermediate-level waste, as proposed in the operating

licence application. The licence application has been carefully prepared, and no geology-related issues were raised that would prevent the continuation of use.

VTT Technical Research Centre of Finland Ltd states that strong grounds exist for granting the operating licence on the basis of the national programme for the management of radioactive waste. A conditional agreement has already been made between Fortum and VTT Technical Research Centre of Finland Ltd on the reception of the decommissioning waste of FiR 1 and Otakaari 3 at the Loviisa power plant. The disposal facility for low- and intermediate waste of Loviisa power plant may also be the future location of the radioactive waste generated at the VTT Centre for Nuclear Safety.

VTT considers it very positive that Fortum is taking efforts to advance the national programme for the management of low- and intermediate-level waste by applying for a licence that will also enable it to possess, handle, store and dispose of waste generated elsewhere in Finland. VTT estimates that the amount for which Fortum is applying for a licence for this purpose will be sufficient for several decades.

VTT states that, with regard to the waste to be disposed of, it would be necessary to specify the conditions to be imposed on special types of waste falling under the system of nuclear safeguards.

The *Eastern Uusimaa Emergency Services Department* sees no obstacles to the approval of the operating licence. According to the operating licence application, the safety, security and emergency arrangements for the disposal facility will be integrated into the functions of the nuclear power plant, on which the Emergency Services Department has no complaints. The modifications arising from the disposal facility and the safety requirements during construction must be taken into account in regular cooperation between the Emergency Services Department and Fortum. Sites undergoing modifications are supervised in accordance with the Emergency Services Department's supervision plan. Any modifications affecting emergency response and rescue operations shall be updated in the applicable sections of the external emergency plan for the site.

Fingrid Oyj did not make any comments on the disposal facility for low- and intermediate-level waste in its statement.

The City of Loviisa sees no obstacles to extended operations and states that no obstacles or new negative impacts were raised in the EIA procedure. The City of Loviisa does not have other zoning needs or plans for the area, nor does it see any zoning or land use problems arising from the extension of operations.

The Environmental Health Division of the City of Porvoo considers there to be no obstacles to granting an operating licence for the disposal facility for low- and intermediate-level waste.

The Municipality of Lapinjärvi had no comments on the operating licence application.

In their statement, the *Technology Industries of Finland* states that, as a result of the extension of the operating licence for the Loviisa nuclear power plant, the decommissioning and dismantling of the nuclear facility will be postponed, in which case the operation of the disposal facility for low- and intermediate-level waste must be continued. The Federation of Finnish Technology Industries is in favour of extending the operating licence for the disposal facility for low- and intermediate-level waste in Loviisa until the end of 2090.

According to the *Finnish Association for Nature Conservation*, the operating licence application must be rejected and returned to the drawing board because the information provided on the project is incomplete; the authority does not have a real understanding of the long-term effects of nuclear waste and the bioaccumulation of radioactive substances. Furthermore, the starting points of the licencing of nuclear waste are unsustainable and subpar by international comparison.

According to *Natur och Miljö rf*, Fortum's operating licence application to extend the service life of the disposal facility for low- and intermediate-level waste until 2090 raises questions about the operations that Fortum intends to carry out in the area between 2050 and 2090.

The Federation of Finnish Enterprises is in favour of extending the operating licence in accordance with the application. As a result of extending the operating licence for the power plant, it is also worthwhile to extend the operating licence for the disposal facility for waste in accordance with the application.

The Finnish Confederation of Professionals STTK welcomes the licence application for the disposal of low- and intermediate-level waste in light of Finland's high level of nuclear energy safety and expertise in the management of nuclear waste. The environmental impact assessment procedure for the project has also not given rise to any evidence that would prevent granting the requested extension to the operating licence.

Applicant's response

In its explanation pursuant to section 23a of the Nuclear Energy Act, the applicant notes that most of the statements and opinions take a positive view on the company's application. With regard to STUK's statement, Fortum finds that the licence condition proposed by STUK is in line with the company's understanding of how the expansion of the disposal facility for low- and intermediate-level waste is intended to be carried out. In addition, Fortum states that it has taken measures to meet the requirements set out in STUK's decision on periodic safety review within the time limits given, which STUK has supervised as part of their continuous supervision.

Regarding the risks of disposal and the reliability of the risk assessment, Fortum states that the long-term safety of the disposal facility has been assessed in a safety case. According to the international definition, safety case refers to all technological and scientific materials, analyses, observations, trials, tests and other evidence used to justify the reliability of the assessments made of the long-term safety of disposal.

During the operation of the disposal facility, periodic safety review will be carried out every 15 years, including a long-term safety case in which the latest available research data and up-to-date methods is applied. As a result, the reliability of risk assessments will continue to improve during the operation of the disposal facility.

The safety case for the disposal facility in the Loviisa power plant site has been prepared in accordance with the Nuclear Energy Act and Decree and the safety regulations and detailed safety requirements issued by STUK, and the approach corresponds with the practice for safety cases adopted by the international scientific community. STUK has assessed the safety case by assigning the assessment work to an international expert group, and has approved the safety case.

Fortum notes that any future changes to the disposal facility that will have an effect on emergency response and rescue operations will be communicated to the Eastern Uusimaa Emergency Services Department well in advance in the context of regular cooperation between the emergency services department and Fortum, so that the impacts of the changes can be taken into account and the external emergency plan updated accordingly as needed. With regard to nuclear safeguards, the company states that it has taken into account the nuclear use items mentioned by VTT in its licence application in a manner it considers sufficient.

With regard to the statement by the Ownership Steering Department of the Prime Minister's Office, the company states that the EUR 3 billion guarantee was released as expected by the end of 2022. The remaining EUR 1 billion of the guarantee is still expected to be released by the end of Q2/2023.

Through more than 20 years of operation of the disposal facility in the Loviisa power

plant site and the research and development work that preceded it, Fortum's personnel have accumulated considerable expertise in the disposal of nuclear waste, including its safety and safety assessment. Fortum maintains the expertise in the disposal of nuclear waste and its safety. Personnel development is carried out with a long-term, systematic and proactive approach, and the operations are based on high quality, a high-standard safety culture and continuous improvement.

In its response, the company also takes a position on the activities taking place at the power plant site between 2050 and 2090, and on the opinions related to the legality of the licence and the EIA processes. Once production ends at the power plant, the nuclear power plant will be decommissioned and dismantled in stages, the spent nuclear fuel will be transported out of the area for disposal in Olkiluoto, Eurajoki; the other radioactive waste will be disposed of at the plant site; and the plant site's disposal facility in question will be closed. The company states with justification that the licence and EIA processes have proceeded in accordance with the law.

Opinion of the Commission in accordance with Article 37 of the Euratom Treaty

Under Article 37 of the Euratom Treaty (97/C385/02), each Member State shall provide the Commission with such general data related to any plan for the disposal of radioactive waste in whatever forms will make it possible to determine whether the implementation of such plan is liable to result in the radioactive contamination of the water, soil or airspace of another Member State.

General information related to the plan for the disposal of low- and intermediate-level waste in a disposal facility in Loviisa, Finland was submitted to the Commission for the first time in 1997, and the Commission issued its opinion on the plan that same year. At that time, the information submitted and the Commission Opinion did not take a position on the possible effects of the radioactive waste generated by the dismantling of the power plant.

In autumn 2022, the Ministry of Economic Affairs and Employment, as the competent authority in Finland referred to in the Euratom Treaty, provided additional information prepared by the company on the plans for a disposal facility for low- and intermediate-level waste. The plan took into account the nuclear waste generated during the extended lifetime of the Loviisa power plant, the nuclear waste generated by the dismantling of the nuclear power plant, and a small amount of nuclear waste and radioactive waste generated elsewhere in Finland. The activities and decisions of the licensee and of the Radiation and Nuclear Safety Authority STUK as the body responsible for its supervision, in connection with the implementation of this licence decision, shall take into account the Commission Opinion issued under Article 37 of the Euratom Treaty.

Decision

By virtue of the Nuclear Energy Act of 11 December 1987 (990/1987) and the Nuclear Energy Decree of 12 February 1988 (161/1988), the Government has decided to grant Fortum Power and Heat Oy the licence referred to in section 20 of the Nuclear Energy Act

1. to operate the disposal facility for low- and intermediate-level waste located in the Loviisa power plant site until 31 December 2090.

Terms of the licence

Pursuant to the licence granted by this decision:

1. The licensee may possess, handle, store and dispose of a maximum of 50,000 m³ of low- and intermediate-level waste generated in the Loviisa power plant site. The waste may be generated in connection with and as a result of the operations of the nuclear facilities or may be other radioactive waste with properties equal to such waste.
2. The licensee may possess, handle, store and dispose of a maximum of 2000 m³ of nuclear waste and radioactive waste generated elsewhere in Finland with properties equal to the waste referred to in licence condition 1, for which the licensee or the State of Finland has a waste management obligation pursuant to the Nuclear Energy Act or the Radiation Act.
3. The licensee may possess, handle, store and dispose of a maximum of 50,000 m³ of very low-level waste generated by the dismantling of buildings in the decommissioning of the nuclear facilities at the Loviisa power plant site.
4. The licensee must not store or dispose of nuclear fuel at the disposal facility for low- and intermediate-level waste.
5. The implementation of the expansion of the disposal facility for low- and intermediate-level waste must not be started until STUK has approved the plans for the expansion and the safety case concerning the safety of the disposal facility after its closure.
6. The licensee must take into account the Commission Opinion referred to in Article 37 of the Euratom Treaty in the operation of the disposal facility for low- and intermediate-level waste. The Commission Opinion must be taken into account in the actions before implementing the expansion of the disposal facility

for the purpose of the disposal of decommissioning waste, no later than by the end of 2055.

7. The licensee shall carry out the disposal of low- and intermediate-level waste and the closure of the disposal facility during the period of validity of the operating licence in accordance with section 33 of the Nuclear Energy Act or, if the operation of the disposal facility is continuing, apply for a new operating licence.

Grounds for the decision

This licence shall be in force until 31 December 2090, in accordance with the application. The period of validity granted for the licence is longer than the time frame needed, according to Fortum's plan, to implement the disposal of the low- and intermediate-level nuclear waste generated in the operation and decommissioning of Loviisa nuclear power plant and to permanently close the disposal facility.

The disposal facility for low- and intermediate-level waste can be closed when all the low- and intermediate-level nuclear waste generated at the Loviisa power plant has been disposed of. This will require transporting the spent nuclear fuel stored at the Loviisa power plant for disposal to Olkiluoto in Eurajoki. After that, the storage facility for spent nuclear fuel and the parts of the plant supporting it can be decommissioned and the decommissioning waste can be disposed of. The longer period of validity of the licence is justified due to the uncertainty of the current schedules related to the disposal of spent nuclear fuel. STUK is also of the opinion that the period of validity of the licence is justified.

According to licence condition 7, the licensee shall carry out the disposal of low- and intermediate-level waste and the closure of the disposal facility during the period of validity of the operating licence, in accordance with section 33 of the Nuclear Energy Act. If the disposal activities are planned to continue after the expiry of the licence, the licensee shall apply for a new operating licence for those activities.

The following is stated regarding the fulfilment of the prerequisites for granting the operating licence laid down in section 20 of the Nuclear Energy Act:

- 1. The nuclear facility and its operation meet the safety requirements laid down in this Act, and appropriate account has been taken of the safety of workers and the population, and environmental protection.**

The Radiation and Nuclear Safety Authority STUK states that the disposal facility meets the nuclear and radiation safety requirements set for it. In STUK's opinion, Fortum has carried out the safety assessment appropriately

and did not find any significant deficiencies in the fulfilment of the safety requirements set for the operation of the disposal facility upon review of the materials.

In STUK's opinion, however, the plans for the expansion of the disposal facility for low- and intermediate-level waste are not sufficiently detailed to confirm their compliance with the safety requirements. For this reason, STUK has proposed that the following licence condition be set: Fortum must not start the implementation of the expansion of the disposal facility for low- and intermediate-level waste until STUK has approved the plans for the expansion and the safety case concerning the safety of the disposal facility after its closure. This matter has been addressed in licence condition 5.

The licensee must take into account the Commission Opinion referred to in Article 37 of the Euratom Treaty in the operation of the disposal facility for low- and intermediate-level waste. The Commission Opinion must be taken into account in the actions before implementing the expansion of the disposal facility for the purpose of the disposal of decommissioning waste, no later than by the end of 2055. That is when the disposal facility will move on to the next stage of its life cycle, on which the Commission did not take a position in its opinion of 1997. This matter has been addressed in licence condition 6.

The basic services, legal protection and permits division of the Regional State Administrative Agency for Southern Finland considers there to be no obstacles to the approval of the operating licence application from the environmental health perspective.

The Ministry of the Environment is in favour of granting the operating licence applied for the disposal facility for low- and intermediate-level waste in Loviisa.

The security and emergency arrangements of the disposal facility are discussed in more detail below in the context of fulfilling the general principles laid down in the Nuclear Energy Act.

In view of the above-mentioned, the Government finds that the disposal facility for low- and intermediate-level waste and its operation 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, as well as environmental protection.

2. The methods available to the applicant for arranging nuclear waste management, including disposal of nuclear waste and decommissioning of the facility, are sufficient and appropriate.

Fortum Power and Heat Oy has arranged the nuclear waste management of the Loviisa nuclear power plant in such a manner that the company itself takes care of the handling and storage of the spent nuclear fuel used at the power plant site and of low- and intermediate-level waste. The company's nuclear power plant's currently valid operating licence covers these activities. In addition, the company itself will take care of the planning of the decommissioning of the nuclear power plant and the disposal of low- and intermediate-level waste at the power plant site.

The company will take care of the planning and implementation of the disposal of spent nuclear fuel through Posiva Oy, a company founded in 1995 which it owns together with Teollisuuden Voima Oyj. Posiva Oy has submitted an operating licence application for the encapsulation plant and the disposal facility of spent nuclear fuel to the Government in 2021. The Government will decide on Posiva's application separately at a later date.

This decision applies to the disposal facility for low- and intermediate-level waste located at Fortum Power and Heat Oy's power plant site. Pursuant to this decision, the licensee may possess, handle, store and dispose of a maximum of 50,000 m³ of low- and intermediate-level nuclear waste generated in the Loviisa power plant site. The waste may be generated in connection with and as a result of the operations of the nuclear facilities, including the disposal facility for low- and intermediate-level waste, or the waste may be other radioactive waste with properties equal to above mentioned nuclear waste (licence condition 1).

The abovementioned nuclear waste and radioactive waste may be, for example, low- and intermediate-level nuclear waste generated in connection with or as a result of the operation and decommissioning of the nuclear facilities located at the power plant site, other radioactive waste with an activity concentration equal to such waste located at the plant site, or decommissioned radiation sources. The small amounts of low- and intermediate-level waste generated during the encapsulation of spent nuclear fuel generated by the Loviisa power plant can also be considered to have been generated as a result of the operation of the Loviisa nuclear power plant, even if the place where the waste originated is actually outside the power plant site.

The abovementioned amount of 50,000 m³ is based on an estimate of the total amount of waste to be disposed of if the operation of the nuclear power plant units ends in 2050. It has not been considered necessary to divide the total amount of waste into smaller amounts per hall; this will make the operation of the disposal facility more flexible in the future. Furthermore, the activity concentration limits for waste have been abolished for the purposes of this decision. Where necessary, STUK may still impose hall-specific restrictions under section 55 of the Nuclear Energy Act. According to the company, a reasonable margin has been included in the estimated

amount of waste, taking into account the waste volumes, the long time span of operations and the related uncertainties. The increased safety margin is acceptable considering the abovementioned facts.

The licensee may (licence condition 2) possess, handle, store and dispose of a maximum of 2000 m³ of nuclear waste and radioactive waste generated elsewhere in Finland with properties equal to the waste referred to in licence condition 1 for which the licensee or the State of Finland has a waste management obligation pursuant to the Nuclear Energy Act or the Radiation Act.

According to the company's estimate, the amount of nuclear waste and radioactive waste generated elsewhere in Finland and disposed of at the disposal facility will be clearly lower than the abovementioned amount of waste, and thus it can be considered the maximum amount. This maximum amount is negligible compared to the amount of waste in licence condition 1: less than 5 %. The amount of waste also corresponds to the amount that the licensee may possess, handle and store in accordance with the operating licence of the Loviisa nuclear power plant in the buildings and storage facilities of the nuclear power plant units necessary for the management of nuclear fuel and nuclear waste.

With regard to waste generated elsewhere in Finland than in the nuclear facilities located in the Loviisa power plant site, the requirement is that the waste management obligation is or has been transferred to the licensee or to the State of Finland. The purpose of transferring the waste management obligation is to ensure that the appropriate waste management measures will be taken right up until the release from supervision or disposal of the waste.

According to section 9 of the Nuclear Energy Act, a licensee whose operations generate or have generated nuclear waste (party with a waste management obligation) shall be responsible for all nuclear waste management measures and their appropriate preparation, as well as for their costs (waste management obligation). A corresponding operator's waste management obligation is also imposed in the Radiation Act.

According to section 30 of the Nuclear Energy Act, the Ministry of Economic Affairs and Employment may, on request, transfer the waste management obligation to the transferee in part or in full if the transfer of the obligation does not endanger the implementation of the nuclear waste management. In such a case, it is also appropriate to decide in more detail on the practical arrangements related to the transfer of the waste management obligation, such as at which stage of the approval process the nuclear waste transported to the power plant site will be transferred under the company's waste management obligation.

The waste generated elsewhere may consist of, for example, radioactive waste generated by the State, industry, universities, research institutes and hospitals; waste generated by the operation of VTT's FiR 1 research reactor, Otakaari 3 research laboratory and the new VTT Centre for Nuclear Safety located in Espoo; and, in due course, the waste generated by the decommissioning of the latter. The company has made a conditional agreement with VTT on the reception of the decommissioning waste of FiR1 and Otakaari 3 at the Loviisa power plant, provided that the Government grants the necessary licences for the operation and no obstacles arise to prevent the disposal of the waste. No agreements have yet been made regarding other wastes, so the disposal of VTT's nuclear waste and other radioactive waste in the disposal facility for low- and intermediate waste in Loviisa can be seen as the first step in the National Programme implemented by the company.

The Ministry of Social Affairs and Health and the environmental healthcare unit of the Regional State Administrative Agency for Southern Finland consider it appropriate that the disposal facility will also be prepared to receive, handle, store and dispose of small amounts of radioactive waste generated elsewhere in Finland.

It is the Government's opinion that it is important for the overall good of society that the National Programme for the Management of Spent Fuel and Radioactive Waste are implemented in a safe and appropriate manner. In practice, the challenging aspect with regard to the National Programme has been that some individual waste batches do not fall within the scope of the licensee's current licence conditions. Within the scope of licence condition 2, the licensee has the opportunity, at its discretion, to agree on business transactions related to the National Programme carried out in Finland. Any other licence procedures governed by the Nuclear Energy Act or the Radiation Act must be taken into account when carrying out such transactions.

According to licence condition 3, the licensee may possess, handle, store and dispose of up to a maximum of 50,000 m³ of very low-level waste generated by the dismantling of buildings in the decommissioning of the nuclear facilities at the Loviisa power plant site. The licence condition takes into account all the nuclear facilities to be dismantled in the power plant site. Where possible, waste will be utilised as back-fill material alongside blasted rock in the disposal facility when it is closed.

According to licence condition 4, the licensee must not store or dispose of nuclear fuel at the disposal facility for low- and intermediate-level waste. The Loviisa power plant site has separate storage facilities for storing nuclear fuel. The spent nuclear fuel generated at the Loviisa power plant is planned to be transported for disposal to Posiva Oy's encapsulation plant and disposal facility in Olkiluoto, Eurajoki.

On the basis of this decision, small amounts of other nuclear material may, in derogation from the previous operating licence, be disposed of at the disposal facility for low- and intermediate-level waste in Loviisa. The change is justified, as nuclear

waste and other radioactive waste may also contain nuclear materials. For example, waste products containing small amounts of uranium are stored at the Loviisa power plant, and their disposal has not been possible due to an overly restrictive licence condition. In addition, nuclear waste and radioactive waste brought to the power plant site from elsewhere in Finland may contain small amounts of nuclear materials. It should also be noted that some decommissioned equipment and parts are disposed of as nuclear use items if rendering them practicably irrecoverable has not been seen as feasible. From STUK's point of view, there are no obstacles to the disposal of small amounts of nuclear materials, as long as Fortum will ensure that it also fulfils the obligations arising from nuclear safeguards with regard to the disposal of the waste in question.

The Ministry of Economic Affairs and Employment decides that the licence applicant's waste management obligation has expired, on application, when the conditions laid down in section 32 of the Nuclear Energy Act are met. In the case of the Loviisa nuclear power plant, this means the time when the nuclear power plant has been decommissioned and the disposal of nuclear waste has been carried out in a manner approved by the Radiation and Nuclear Safety Authority. When the waste management obligation of a party responsible for waste management has expired under section 32, the ownership of the nuclear waste is transferred to the State, which shall then be responsible for the nuclear waste.

In its statement, the Radiation and Nuclear Safety Authority has noted that Fortum meets the requirement set for nuclear waste management arrangements. Fortum has at its disposal the methods needed to implement nuclear waste management. Fortum has also drawn up preliminary plans for the handling and disposal of decommissioning waste.

In light of this, the Government states that the methods available to the applicant for arranging nuclear waste management, including the disposal of nuclear waste and the decommissioning of the nuclear facility, are sufficient and appropriate.

3. The applicant has sufficient expertise available and, in particular, the competence of the operating staff and the operating organisation of the nuclear facility are appropriate.

In its statement, the Radiation and Nuclear Safety Authority states that Fortum meets the requirements set for it. STUK notes, however, that it is important for Fortum to monitor the sufficiency of the human resources allocated to the operation, monitoring and research activities of the disposal facility in order to ensure sufficient competence in the operation and development of the disposal facility. STUK monitors how the abovementioned is organised and the development of resources and adequacy of expertise as part of continuous supervision.

In light of this, the Government states that the applicant has sufficient expertise available and that in particular the competence of the operating staff of the disposal facility for low- and intermediate-level waste and the operating organisation of the disposal facility are appropriate.

4. The applicant is otherwise considered to have the financial and other prerequisites to engage in operations safely and in accordance with Finland's international contractual obligations.

The Radiation and Nuclear Safety Authority states in its statement that it does not have the authority and competence to assess whether the licensee has the financial means to carry out the operation. In its statement and the documents appended therein, STUK has assessed the licensee's ability to carry out the operation safely and, with regard to matters under STUK's supervision, in accordance with Finland's obligations based on international conventions and agreements. No obstacles to carrying out the operation described in the application safely and in accordance with Finland's obligations based on international conventions and agreements in its statement have been identified by STUK in its statement.

In its statement, the Ownership Steering Department of the Prime Minister's Office states that, based on the facts currently available, Fortum Corporation has the financial resources needed to carry out the operation of the Loviisa nuclear power plant and to finance the necessary investments. Fortum is also prepared for the cost of nuclear waste management and has paid contributions to the National Nuclear Waste Management Fund in accordance with the decisions of competent authorities.

Based on the reports submitted to it, the Ministry of Economic Affairs and Employment has stated that the applicant has arranged a financial provision for the cost of nuclear waste management for the Loviisa nuclear power plant in accordance with chapter 7 of the Nuclear Energy Act.

In light of this, the Government states that the applicant is estimated to have the financial and other means necessary for safe operation, as referred to in the application, in accordance with Finland's obligations based on international conventions and agreements.

Fulfilment of the general principles laid down in the Nuclear Energy Act

Continuing the operation of the disposal facility for low- and intermediate-level waste located in the Loviisa power plant site and expanding the disposal facility so that the waste generated in connection with the decommissioning of the power plant can also be disposed of there is appropriate and timely,

and thus also in line with the overall good of society. STUK's oversight work also has not revealed any facts on the basis of which the licensee and the disposal facility would not fulfil the principles laid down in section 5 of the Nuclear Energy Act.

In view of the above, the Government states that granting the operating licence is in line with the overall good of society.

Furthermore, STUK's oversight work has not revealed any facts on the basis of which the licensee and the disposal facility would not fulfil the principles laid down in sections 6 and 6a of the Nuclear Energy Act. In STUK's opinion, the operation of the disposal facility for low- and intermediate-level waste can be continued safely. The radioactive waste generated during the operation of the Loviisa power plant as well as radioactive waste generated elsewhere in Finland can be disposed of at the disposal facility, as long as the safety of the disposal of new types of waste has been assessed separately.

In STUK's opinion, however, the plans for the expansion of the disposal facility for low- and intermediate-level waste currently are not sufficiently detailed to confirm their compliance with the safety requirements. For this reason, STUK has proposed a licence condition concerning the plans for the expansion of the disposal facility and a safety case concerning the safety of the disposal facility after its closure. STUK supervises the construction of the expansion of the disposal facility and the commissioning of the facility in accordance with its usual supervision procedures.

Taking into account the above, the Government states that granting the operating licence to the disposal facility for low- and intermediate-level waste is not in conflict with the principle of safe use of nuclear energy laid down in section 6 of the Nuclear Energy Act. Granting the operating licence is also not in conflict with the principles of the management of nuclear waste laid down in section 6a of the Nuclear Energy Act.

STUK's oversight work has not revealed any facts on the basis of which the licensee and the disposal facility would not fulfil the principles laid down in section 7 of the Nuclear Energy Act. STUK notes that the security and emergency arrangements of the disposal facility are included in the arrangements for the Loviisa power plant. According to STUK's statement on the Loviisa power plant (STUK 2/A42213/2022, 25.1.2023), security and emergency arrangements for the Loviisa power plant are in place in the manner referred to in the Nuclear Energy Act and Decree, as well as in the regulations STUK Y/3/2020 and STUK Y/2/2018. The emergency arrangements for the Loviisa nuclear power plant also meet the requirements for emergency arrangements laid down in the Radiation Act (859/2018) and the Government Decree on Ionizing Radiation (1034/2018).

According to STUK's statement (STUK 2/A42213/2022, 25.1.2023), the nuclear facility operator has arranged indemnification regarding liability in the event of nuclear damage in the manner provided in the Nuclear Energy Act. In addition, the control necessary to prevent the proliferation of nuclear weapons has been arranged appropriately. There are no obstacles to the disposal of small amounts of nuclear materials, as long as Fortum will ensure that it also fulfils the obligations arising from nuclear safeguards with regard to the disposal of the waste in question.

The Eastern Uusimaa Emergency Services Department states that any modifications affecting emergency response and rescue operations at the disposal facility shall be updated in the applicable sections of the external emergency plan for the site.

Taking into consideration the above, the Government states that the security arrangements, emergency arrangements and other arrangements for Fortum Power and Heat Oy's disposal facility for low- and intermediate-level waste for limiting nuclear damage and for protecting the use of nuclear energy against activities that could endanger nuclear or radiation safety are sufficient.

Based on the above, the Government concludes that all the prerequisites for granting the operating licence have been met.

STUK supervises, under sections 55 and 63 of the Nuclear Energy Act, that the operation of the disposal facility for low- and intermediate-level waste in Loviisa complies with the licence conditions and approved plans, as well as with the Nuclear Energy Act and the provisions and regulations issued thereunder.

Replaced decisions

This decision, when it becomes final, replaces the operating licence granted by the Government on 2 April 1998 to Imatran Voima Oy, and subsequently transferred to Fortum Power and Heat Oy, for the disposal facility for low- and intermediate-level waste located in the Loviisa power plant site.

With this decision, the licence granted by the Radiation and Nuclear Safety Authority under section 41 of the Nuclear Energy Decree (19/A43774/2012, 5.2.2013) for the handling and interim storage of low- and intermediate-level waste in the third maintenance waste hall (MWH3) expires as the licence conditions 1 and 2 of that licence are met.

Entry into force and enforcement of the decision

The decision shall become final when the time allowed for lodging an appeal ends,

unless a request for extension of time to lodge an appeal is made.

This decision can be enforced even though not final.

The Government notes that, according to section 122(3)(3) of the Administrative Judicial Procedure Act (808/2019), a decision that is not final may be enforced if enforcement of the decision cannot be postponed due to a public interest.

The Government considers that enforcing the decision before it becomes final is necessary for the public interest. In its assessment of the matter, the Government has particularly taken into account the objectives of the National Programme for the Management of Spent Fuel and Radioactive Waste. In accordance with the objectives of the National Programme, the radioactive waste from VTT's FiR 1 research reactor and radioactive materials research laboratory (Otakaari 3) is disposed of in the disposal facility for low- and intermediate-level waste located at the Loviisa power plant site in accordance with a commercial contract concluded between the companies. The operation of the disposal facility must continue without interruption.

Starting the dismantling of the FiR 1 research reactor and finishing the dismantling of the research laboratory require that the radioactive decommissioning waste is transported from the Otaniemi campus area for storage and disposal at the Loviisa power plant site. According to section 7g of the Nuclear Energy Act, dismantling of the FiR 1 research reactor and any other measures taken in the decommissioning of the facility must not be postponed without due cause.

Not enforcing the decision would, at the very least, cause a delay in the reception and disposal of decommissioning waste at the Loviisa power plant site. This would mean that the obligations of VTT as a licensee and its waste management obligation as the party responsible for waste management under section 9 of the Nuclear Energy Act would continue in full. As a licensee, VTT must ensure the safety of the shut-down FiR 1 research reactor and keep its systems and organisation up and running. It should be noted that the human resources of the FiR 1 research reactor are scarce and that competence retention may pose challenges if the implementation of the decommissioning is delayed. A delay in the implementation of the decommissioning of the FiR 1 research reactor would also cause significant additional costs.

In light of this, the Government considers that, due to public interest, the decision can be enforced even though not final. Carrying out the decommissioning of the research reactor on schedule and consequently implementing the National Programme in an appropriate manner are necessary for the public interest.

Request for review

A party dissatisfied with this decision may request for a review by lodging a written appeal with the Supreme Administrative Court. Any person to whom a decision is addressed or whose right, obligation or interest is directly affected by a decision may appeal against the decision. An appeal can be made on the basis of the decision being unlawful. The appeal document must be submitted to the registry of the Supreme Administrative Court within the time allowed for appeal. The appeal instructions are enclosed.

Fee

This decision is provided against a fee charged to Fortum Power and Heat Oy when the application was submitted, in the amount of EUR 84,100 determined in accordance with the Decree on Fees for Control of Nuclear Energy (1474/2001).

Helsinki, 30 March 2023

Tuula Haatainen
Minister of Employment

Linda Kumpula
Senior Specialist

APPENDIX

Instructions for appeal

DISTRIBUTION

Fortum Power and Heat Oy
Radiation and Nuclear Safety Authority
Ministry of the Interior
Ministry of the Environment
Ministry of Social Affairs and Health
Ministry for Foreign Affairs

Ministry of Defence
Regional State Administrative Agency for Southern Finland
Centre for Economic Development, Transport and the Environment
for Uusimaa
City of Loviisa
City of Kouvola
Municipality of Lapinjärvi
Municipality of Myrskylä
City of Porvoo
Municipality of Pyhtää

APPEAL INSTRUCTIONS

Appellate authority

Written appeals against this decision can be lodged with the Supreme Administrative Court. An appeal can be made on the basis of the decision being unlawful. The appeal document must be addressed to the appellate authority and submitted to the registry of the Supreme Administrative Court within the time allowed for appeal.

Time allowed for appeal

Appeals must be submitted within 30 days of receiving notification of the decision. The date of receiving notification is not included in the time limit for appeal. If the deadline for appeal falls on a public holiday, Saturday, Independence Day, 1 May, Christmas Eve or Midsummer Eve, the time limit for appeal shall be extended to the following working day.

Ordinary service is carried out with a letter delivered to the addressee by post. The addressee is considered to have been informed of the matter on the seventh day after the sending of the letter, unless otherwise proven. In the case of standard electronic service, the addressee is considered to have been informed of the matter on the third day after the sending of the message, unless otherwise proven.

In the case of substituted service, the decision is considered to have been served on the third day after the date indicated on the certificate of service or acknowledgement of receipt. An authority is considered to have been informed of the matter on the date the letter arrives.

Contents of appeal

The appeal document must specify

- the appealed decision
- the appealed parts of the decision, the demanded amendments, and the grounds for the appeal
- the basis of the right of appeal if the decision appealed against is not directed at the appellant
- the name, municipality of residence and telephone number of the appellant
- the postal address and any other address to which documents relating to the proceedings may be sent.

Should the appellant's right to be heard be vested in a legal representative, an attorney or a licensed legal counsel, or the appeal have been drawn up by someone else, the appeal document must indicate said person's name and domicile.

The Administrative Court must be informed without delay of any changes of contact details during the pendency of the appeal.

Appendices to the appeal

The following must be attached to the appeal document:

- the appealed decision in the original or as a copy, accompanied with appeal instructions
- the certificate of service or other evidence of the beginning of the time allowed for appeal
- the documents provided in support of the appeal, unless they have already been delivered to the authority
- for an attorney, a power of attorney, unless the attorney is an attorney-at-law, a public legal aid attorney or a licensed legal counsel.

Submitting the appeal

The appeal may be delivered in person, by post as a pre-paid postal item, by means of electronic data transmission, or by means of an agent or courier. Sending the appeal document by post or electronically is at the sender's own risk.

The appeal must arrive at the appellate authority within the office hours before the end of the 30 days' time allowed for appeal. An electronic document must arrive at the Administrative Court so that it is available to the Court in a reception device or data system for processing the message on the last day of the time allowed for appeal before 16.15.

The office hours of the Supreme Administrative Court are from Monday to Friday, 8:00–16:15.

Appeals can also be filed via the e-service of administrative and special courts at <https://asio-inti2.oikeus.fi/hallintotuomioistuimet>

Contact details for the Supreme Administrative Court:

Postal address: P.O. Box 180, FI-00131 Helsinki
Street address: Paasivuorenkatu 3, FI-00530 Helsinki
Switchboard: +358 29 5640200
Fax: +358 29 5640382
email: korkein.hallinto-oikeus@oikeus.fi

Court fee

Proceedings in the Supreme Administrative Court are subject to a court fee under the Act on Court Fees (1455/2015). The amount of the fee is EUR 530. The Act on Court Fees lays down separate provisions on cases where no fee is charged.