VAE Visaginо atominė elektrinė

Information on the decision concerning the permissibility of construction of the Visaginas Nuclear Power Plant in terms of impact upon the environment

Title of the planned activity:
Construction and operation of the Visaginas Nuclear Power Plant up to 3400 MW

Organizer of the project:
UAB Visagino Atominė Elektrinė at Žvejų g. 14A, LT-09310 Vilnius, tel. (8-5) 278 2589.

Planned location of the project:
Utena County, Visaginas Municipality, area of the Ignalina Nuclear Power Plant.

Entity preparing the EIA documentation:
Pöyry Energy Oy (Finnish company), Tekniikantie 4A, P.O. Box 93, FI-02151, Espoo, Finland, tel. (+358) 103324346.
Lithuanian Energy Institute, Breslaujos g. 3, LT-4403, Kaunas, tel. (+8 37) 40 18 91.

Description of the project:
Construction of a nuclear power plant (NPP) is being planned. Summary electric power of the NPP will be up to 3400 MW. 2 to 5 nuclear reactors meeting modern requirements in terms of nuclear safety and technologies will be constructed (generation not earlier than III/III+). The operation will last approximately 60 years, decommissioning will take from 20 to 100 years. The EIA report contains an evaluation of all the key reactor technologies suitable for the NPP (boiling water reactor BWR, pressurized water reactor PWR and pressurized heavy water reactor PHWR), considers different suppliers and different power levels. Water from the Drūkšiai Lake will be used for the cooling purposes. The EIA report analyses three alternative water intake points (current point; point at the distance of approx. 2 km to the west from the current point; and a tunnel from the deep area of the lake) and two water discharge alternatives (current point in the middle of the lake; a bay in the southern part of the lake). No direct cooling will be required by the 3400 MW NPP, therefore, an indirect cooling system will be implemented. Three alternatives of indirect cooling are considered: wt, dry and hybrid cooling methods. The EIA report examines two potential sites for the construction of the Visaginas NPP: the first site is to the east from the Ignalina NPP, while the second one to the west from the power distribution facilities of the NPP.

Measures to avoid/mitigate the negative impact upon the environment:

- The reactors, buildings and other structures, systems and components relevant to safety will be designed, constructed and operated in such a way that they remain safe under the action of external factors, both environmental and human, the parameters of which will be evaluated based on the IAEA safety standards NS-R-3 "Site Evaluation for Nuclear Installations";
- During the construction of the plant, in order to reduce noise due to increased traffic intensity and construction works, the schedule of works will be adjusted so as to carry out the noisiest works in the daytime and on workdays. Where necessary noise barriers will be erected in the settlements at the main roads;
- An ecological protective zone will be set up between the shore of the Drūkšių Lake and the Visaginas NPP, where construction will be limited, the noise in the period of April-June will be restricted, and a bridge for the safe movement of small animals between the shores of the cooling channel will be erected. The zone will be separated by a protective fence;
- The lake water temperature monitoring system will be implemented. It will help ensure compliance with the permissible levels of heating up of the Drūkšiai Lake water in the NPP operation period. If necessary the thermal load of the lake will be adjusted: the indirect heating system will be switched on and/or the thermal power of the plant will be reduced. It is anticipated that the thermal energy generated by the Visaginas NPP will be used for the heating of living buildings or other facilities;
- Wastewater will be treated by the mechanical, chemical or biological means. A wastewater and surface water quality control plan will be drawn up;
- Pollution of groundwater will be limited by directing the drainage from all the installations to the drainage system, measures will be taken to lower the groundwater level around the underground structures in order to protect the groundwater from potential pollution;
- Control over the radiological pollution sources and radionuclide emissions will be implemented by applying different technical means e.g. protective barriers limiting radionuclide emissions into the environment;
- The environmental monitoring system of the NPP will be designed in such a way that it fully complies with the provisions of the Lithuanian laws and regulations, Article 35 of EURATOM, the IAEA safety standards, and Lithuania's obligations under the UN Conventions.

Conclusions by the EIA stakeholders:
The Utena Public Health Centre, the Fire Safety and Rescue Department under the Ministry of Interior, Utena territorial office of the Cultural Heritage Department under the Ministry of Culture, Utena County Governor's Administration, Visaginas Municipal Administration, Ignalina District Municipal Administration, Zarasai District Municipal Administration and the Centre for Radiation Safety have approved of the EIA Report and the project. The Lithuanian State Nuclear Safety Inspectorate and the State Protected Areas Authority approved of the EIA Report and (with qualifications) of the project.

Public information about the EIA of the project:

- A notice of the start of the EIA process for the construction of the Visaginas NPP up to 3400 MW was published in the newspapers Lietuvos Rytas on 30-07-2007, Respublika on 30-07-2007, Lietuvos Žinios on 30-07-2007, Valstiečių Laikraštis on 31-07-2007, Kauno Diena on 30-07-2007, Verslo Žinios on 30-07-2007, Zarasų Kraštas 31-07-2007, Mūsų Ignalina 31-07-2007 and V Kazdy Dom on 03-08-2007.
- A notice of the opportunity to get conversant with the EIA Report and to attend its public presentations was published in Lietuvos Rytas on 27-08-2008, Respublika on 27-08-2008, Lietuvos Žinios on 27-08-2008, Valstiečių Laikraštis on 27-08-2008, Kauno Diena on 27-08-2008, 15 min on 27-08-2008, Verslo Žinios on 27-08-2008, Zarasų Kraštas 29-08-2008, Mūsų Ignalina 29-08-2008 and V Kazdy Dom on 29-08-2008. The public presentations took place on 23-09-2008 at the Visaginas Municipal Administration and on 24-09-2008 in the conference hall of AB Lietuvos Energy in Vilnius. Prior to and during the presentations no well-grounded proposals concerning the NPP's environmental impact assessment were received from the members of the public. At the meetings, the project, the preparers of the EIA report, the purposes and procedures of the EIA, the content of the EIA report, potential impact in the construction and operation phase and the conclusions of the EIA report were presented; questions of participants in the meetings were answered.
- On completion of the public discussion, well-grounded proposals were received from the Chairman of Atgaja Society on 06-10-2008 and the CEE Bankwatch Network's Coordinator for Lithuania on 08-10-2008; the preparer of the EIA report took these proposals into account. On 24-03-2009 the proposals were discussed at the Ministry of Environment, attended by the authors of the proposals, representatives of the EIA stakeholders, the preparer of the EIA documentation and the customer of the project.

Decision of the competent authority and conditions set in the decision:
Based on the EIA report submitted to it, the competent authority – the Ministry of Environment adopted a decision, by its letter No. 3504 of 21 April 2009, to permit the construction of the Visaginas NPP on the following conditions:

- A detailed evaluation of Sites 1 and 2 must be made according to the IAEA safety standard NS-R-3 "Site Evaluation for Nuclear Installations". The evaluation of the sites' seismic hazard must be made according to the IAEA safety guidelines DS422 "Evaluation of Seismic Hazards for Nuclear Installations". A seismic monitoring system must be implemented at the plant.
- Prior to drawing up the technical specifications for the selection of the reactor technology, a feasibility study on the use of the near-surface repositories for short-lived radioactive waste of very low, low and intermediate activity (intended for the Ignalina NPP's waste) for the disposal of radioactive waste to be generated at the Visaginas NPP. Based on the results of the study, requirements for the treatment of radioactive waste must be set out in the technical specifications. Facilities for the treatment of radioactive waste to be generated at the Visaginas NPP and for the storage of the radioactive waste and spent fuel will have to be designed and constructed according to the legal acts.
- The following limit criteria must be stated in the technical specifications for the selection of the reactor technology: 1) the total annual effective dose for residents from the operations of all nuclear energy facilities causing exposure to radiation – maximum 0.2 mSv; 2) the residents' exposure to radiation during design emergency – less than 10 mSv; 3) the frequency of emergencies with considerable damage to the active zone (severe emergencies) – maximum 10-5 event per year of reactor operation; 4) limit level of activity of the emitted radionuclides in case of serious emergencies – 100 TBq C-s 137; 5) frequency of major emissions – maximum 10-6 per year of reactor operation. These criteria will be used in the preparation of the safety assessment report according to the legal acts.
- An ecological protection zone of the Drūkšių Lake must be set up in the detailed plan for the territory of the Visaginas NPP;
- As part of preparation of the technical design for the Visaginas NPP, a natural management plan for great crested newts (Triturus cristatus) and fire-bellied toads (Bombina bombina) must be prepared and the technical measures to mitigate the impact must be provided for.
- The size of the sanitary protection zone of the Visaginas NPP must be determined as part of preparation of the technical design and legalised according to the procedure established by legal acts.
- The technical design for the Visaginas NPP must be prepared according to the established procedure; the design must include an environmental protection part. Environmental monitoring measures must be provided for in the technical design taking account of the relevant needs of neighbouring countries.
- Prior to commencement of operation of the Visaginas NPP, the rules for the use and maintenance of the Drūkšiai Lake must be prepared and approved according to the Model Rules for the Use and Maintenance of Ponds (LAND 2-95).
- The thermal load of the Drūkšiai Lake as a result of direct cooling during the operation of the NPP must not exceed 3160 MW. Furthermore, compliance with the permissible limits of the lake water heat-up must be ensured. Water for the cooling must be taken from the current intake or the western point and must be discharged at the current discharge point.
- In the Visaginas NPP design and operation process, residents (including those of the neighbouring countries) must be kept informed about the NPP operations, the environmental monitoring data etc. in order to demonstrate that the activities do not produce a negative impact upon the environment and human health and to avoid a negative image of the facility and the related negative effect on the attractiveness of the area.

Main motives underlying the decision:
The Ministry of Environment, having examined the EIA report, the conclusions on the EIA stakeholders concerning permissibility of the activity, and comments received from the parties to the cross-border EIA procedures, states that:

- Nuclear reactors meeting modern requirements in terms of nuclear safety and technologies will be constructed (generation not earlier than III/III+).made according to the IAEA safety guidelines DS422 "Evaluation of Seismic Hazards for Nuclear Installations". A seismic monitoring system must be implemented at the plant.
- All the reactor technologies that have been considered are suitable in terms of the impact upon the environment and human health.
- The total radiological impact upon the environment and humans, resulting from the existing and projected nuclear energy facilities in the territory of the NPP being designed and the Ignalina NPP, will comply with the provisions of the legal acts provided that the impact mitigating and compensatory measures are implemented.
- The thermal load of the Drūkšių Lake will be limited by technical, administrative and organisational measures in order to reduce the negative impact upon the lake's ecosystem.

More detailed information on the decision concerning the permissibility of the project in the selected location is available at the offices of: UAB Visagino Atominė Elektrinė at Žvejų g. 14A, Vilnius, tel. (8-5) 278 2589 or the Ministry of Environment at Jakšto g. 4/9, Vilnius, tel. (8-5) 266 3654.