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Finland's comments on the Polish Nuclear Power Programme and the related Strategic Environmental Assessment

Finland received notification from the Polish Government concerning the Strategic Environmental Assessment (SEA) of the Polish Nuclear Power Programme on 8 August 2011. Finland replied on 16 August that it does wish to participate in the planning procedure for the Polish Nuclear Power Programme and the related Strategic Environmental Assessment, in accordance with Article 10 of the Protocol on Strategic Environmental Assessment to the UN/ECE Convention on Environmental Impact Assessment in a Transboundary Context.

Finland has received the draft programme and environmental report (SEA report), in English. In accordance with the Protocol on Strategic Environmental Assessment, Poland has submitted the draft programme and environmental report for statements and comments and for evaluation of the need for possible further consultation. According to Finland's Act on the Assessment of the Effects of Certain Plans and Programmes (SEA Act), the Ministry of the Environment is the competent authority for the Protocol on Strategic Environmental Assessment to the UN/ECE Convention on Environmental Impact Assessment in a Transboundary Context and therefore is in the position to coordinate Finland's reply.

During the public comment period from 27 September to 22 November 2011, there was an opportunity for the public and the authorities to comment on the material. The material was displayed at the Ministry of the Environment in Helsinki and on the Internet. Comments were received from three authorities, and from one NGO. A summary of the statements are presented.

The Ministry of Employment and the Economy points out as a general observation that power production and power consumption are quite well balanced today in Poland, but that the situation will change dramatically during the coming years when existing coal-condensing power stations will have to be decommissioned for environmental reasons. The Polish nuclear programme will reduce the use of those power stations. This, in turn, will lead to a reduction in CO₂ emissions, an increase most probably in the reliability of the power supply and an increase in self-sufficiency over the long term.

The Ministry notes that it seems to be clear that the Polish nuclear programme has a favourable effect on the functioning of the national and the European electricity markets.

The Ministry of Social Affairs and Health notes that it is important that the high level of nuclear safety requirements, which are mentioned in the SEA report and which, at the moment, are being drafted into a legal framework in Poland, will, in fact, be adopted into national legislation before the licensing process for the first nuclear power plant starts.

The Ministry of Social Affairs and Health states that the conclusions presented in the report that low slowly cumulating doses of radiation would be beneficial to human health are controversial (the so-called hormesis theory). In the SEA report no reference is made to the meta-analysis on the effects of indoor radon exposure, which was published in 2005 (Darby S et al. Radon in homes and risk of lung cancer: collaborative analysis of individual data from 13 European case-control studies. *BMJ* 2005; 330(7485):223.), and which lends support to the LNT (linear no-threshold) model. The LNT model was used as a basis for the central radiation protection principle ALARA (as low as reasonably achievable). This meta-analysis has had an essential effect on the statements from central risk assessors (e.g. International Commission on Radiological Protection (ICRP)). These statements have affected both the BSS regulations already published by the International Atomic Energy Association (IAEA) and the proposal from the European Commission on a BSS directive (the proposal was published on 29 September 2011 under the Euratom treaty). The results from the meta-analysis have been interpreted as supporting the conventional LNT model, which is criticized in the SEA report.

The Radiation and Nuclear Safety Authority (STUK) states that the reactor concepts described in the SEA report are provided with severe-accident management systems, which so limit the maximum effects of a release from a damaged reactor core that substantial environmental impacts from the release would not reach Finland, for example.

STUK considers it important that a high level of nuclear safety requirements is provided by national legislation. In addition to the regulations included in legislation, it is important to present detailed safety requirements for nuclear power plants clearly as national regulatory requirements. An independent nuclear safety regulator and solid know-how essentially contribute to the safety of nuclear power. The SEA report does not deal with this aspect. Furthermore, the entire nuclear fuel cycle plan, including low- and medium-level waste management, is not accounted for in the report.

STUK notes that the SEA report suggests four major options for a nuclear power plant site in Poland. It also identifies potential external natural threats to them (i.e. weather phenomena, river flooding, seismic phenomena). The site assessments were mostly made 20 years ago, but are supplemented where necessary. Some of the health effects presented in the SEA report are subject to controversy.

Greenpeace Nordic, Helsinki office is very surprised to see that Poland, as a country with a very good potential for renewable energy production and energy efficiency, still aims to start a new nuclear programme. Greenpeace considers that the SEA report does not seem like a very serious attempt to construct nuclear capacity. The report includes a number of conclusions that have been drawn so hastily or with such feeble argumentation that the whole paper seems to be more like a background briefing of a nuclear lobby than an objective assessment report. Greenpeace hopes that in the case that the programme is not abandoned altogether, at least the SEA report will be completely rewritten.

Greenpeace points out some problems associated with the SEA report that are especially relevant in the Finnish context:

- Final disposal of nuclear waste. No country in the world has a solution to the final disposal of nuclear waste.
- Preparedness for serious accidents. The assumptions made in the SEA report for serious beyond design basis accidents seem to be unrealistic. The report also seems to be giving too much importance to individual technical solutions.
- Risk of releases into the Baltic Sea. The SEA report fails to properly assess the harm that a leak of radioactive materials into the Baltic Sea would cause. The special conditions of the Baltic as a much smaller and shallower water reserve should also be taken into account.
- Costs of a nuclear power. The cost figures presented in the SEA report are quite unclear.

In its conclusion, Greenpeace proposes that Poland should drop investments into nuclear technology altogether. Greenpeace points out that Poland could easily achieve its climate objectives and guarantee a secure and affordable supply of clean energy without nuclear power plants.

The comments that were received are enclosed in their entirety.

On the basis of the comments received, and reflecting its own views, **the Ministry of the Environment** would like to state that it is of outmost importance that a high level of nuclear safety requirements is provided by national legislation. In addition to the regulations included in legislation, it is important to present detailed safety requirements for nuclear power plants as national regulatory requirements. An independent nuclear safety regulator and solid know-how essentially contribute to the safety of nuclear power.

The reactor concepts described in the SEA report are provided with severe-accident management systems, which are designed to limit the maximum effects of a release from a damaged reactor core. This should mean that substantial environmental impacts from a release would not reach Finland. The Ministry of the Environment notes that in the case that project proposals are developed, detailed assessments of the possible effects of severe accidents should be included in the environmental impact assessment (EIA). The possible effects of a severe accident on the Baltic Sea are of great interest to Finland and this should be clearly assessed and reported in the possible future EIA report. The outcome of the detailed assessments should be taken into account when possible siting decisions are made.

It is said in the SEA report that the assessment of the impacts from radioactive waste and spent fuel is not included in the scope of this study. A National Plan of Handling Radioactive Waste and Spent Nuclear Fuel will be developed later and then subject to strategic environmental assessment. The Ministry of the Environment finds this separation of these two issues (i.e. using nuclear power and handling radioactive waste) and the separate assessments of the impacts of these plans somewhat contrived. One of the most important issues regarding the safety of using nuclear power is securing safe management of radioactive waste and spent fuel.

One detail the Ministry of the Environment wants to point out is that in both the Polish Nuclear Power Programme and the SEA report it is stated that the annual dose of natural background radiation in Finland is 7 mSv. This is not correct. The natural background radiation dose in Finland is a little less than 1 mSv/year.

When the programme is adopted, Finland, in accordance with Article 11 of the Protocol on Strategic Environmental Assessment, would like to be informed and that the programme is made available together with a statement summarizing how the environmental considerations have been integrated into it, how the

comments received have been taken into account and the reasons for adopting it in the light of the reasonable alternatives considered.

Permanent Secretary



Hannele Pokka

Ministerial Adviser



Lasse Tallskog

Enclosures

Comments received

For information (without enclosures)

Ministry of Employment and the Economy in Finland
Ministry for Foreign Affairs in Finland
Ministry of Social Affairs and Health in Finland
Radiation and Nuclear Safety Authority (STUK)
Greenpeace Nordic, Helsinki office