

Questions/comments of Romanian Party on the bilateral consultations between Romania and Ukraine in accordance with the art.5 of the Espoo Convention

Romanian authorities kindly ask you to provide answers/additional informations on the following identified matters for the activities of Zaporizhzhya NPP (ZNPP) and South-Ukrainian NPP (SUNPP):

The documentation submitted by the Ukrainian Party (Report and Non-Technical Summary) are not updated. These refers to an existing situation/configuration of the NPPs at the level of the year 2014.

I. Aspects regarding the impact on Human health:

Have you assessed the changes in the state of the environment (e.g. new Natura 2000 sites, etc.), the changes in the density of population as well the possible effect on human health, climate change and temperature increase.

How you assessed the seismic hazard (probabilistic assessment)?

II. Biodiversity aspects

In accordance with the Habitats Directive, we consider it necessary to include in the technical documentation information on species of wild flora and fauna and natural habitats potentially affected by the activities of the two nuclear power plants, or possible measures for nature protection, especially transboundary measures.

III. Cumulative impact

Please describe the cumulative impact generated by the operation of the two nuclear power plants, as well as that of Khmelnytsky, located on the territory of Ukraine, at a distance closer to our country; possible measures for wild flora and fauna species and natural habitats in case of risk situation (accidents).

We request the analysis of the cumulative impact on the environment and the population:

- as a result of the normal operation of all Zaporizhzhya NPP units, as well as subsequent closure,
- in case of damage to all 6 reactors, either as a result of chain accidents or as a result of terrorist actions.

IV. Aspects regarding impact on water

An assessment was undertaken in the case of ZNPP and SUNPP NPP's regarding the contamination of rivers and groundwater by radionuclides through direct discharge of contaminated water into the environment following a major accident or through the air? / How does the EIA Reports address the contamination of rivers and groundwater by radionuclides through direct discharge of contaminated water into the environment following a major accident?

The EIA documentation does not provide information suggesting that the projects works has an impact of the hydrological regime. The proposed projects does not provide any information on a potentially significant negative impact on shadow aquifers/ groundwater and surface waters located in the surveillance zone (30 km) and/or in the area of influence on the territory of Romania, located on 450 km away from the CNE site.

The documentation does not present complete information on increasing the groundwater level (GWL) due to the anthropogenic causes. Because it was recorded an increase of the groundwater level before the construction of CNP from 0.8 to 1.6 m and the EIA documentation states that this level is currently oscillator (variability of the GWL), we **proposes as measures included in the final decision for the project that the groundwater level (GWL) continue to be regularly monitored.**

The project does not aim to increase the SUNPP capacity; to modify the water flows needed for technological processes, works interventions on Tashlyk cooling pond and on Olexandrina storage reservoir and Bakshala reservoir. Having in view that the proposed project does not provide information on a potentially significant negative impact on aquifers or surface waters in the surveillance zone (30 km) and / or in the area of influence on the territory of Romania, which is 250 km away from the CNE site.

V. Aspect on monitoring

Implement and maintain a permanent exchange of information on the results of the radiological monitoring carried out in the area of influence of the aforementioned nuclear power plant at the level of the competent authorities.

Please detail the measures taken for a promptly and efficient information of the Romanian population and authorities regarding the results of radiological monitoring in the bordering area, during normal and abnormal NPPs operation.

Permanent monitoring of exposure levels by specific determination of beta and gamma radioactivity in air, water and soil samples, agro-food products, vegetation, milk, fish etc. in the controlled area to prevent any accidental exposure potential that may include the territory of Romania (graphically referenced on the map of accompanying documentation), especially for SUNPP.

Continuous monitoring of the exposure levels in the environmental factors due to the existing radioactive waste deposit with possible impact on the environment and the public, in the conditions of starting nuclear activities at ZNPP and SUNPP.

Please, include a separate section on the monitoring of soil contamination and potential effects on agricultural crops taking into account that only periodic monitoring of the radionuclide composition of soil and vegetation is specified; it is necessary to include detailed information on the impact of the operation of the concerned nuclear power plants on soil and crops (even if this aspect involves extending the project's control surface - eg 30 km for the South-Ukrainian NPP nuclear power plant) as well as analyzing / assessing the risks of soil contamination on agricultural crops.

VI. Aspect on nuclear accidents

What was the size of the area around the NPP's for which the population density has assessed in order to take into account the radiological impact of a major accident and to prepare accordingly the emergency measures?

How did you address the crash of on aircraft (heavy or light aircraft) on the Zaporizhzhya and South-Ukrainian NPP's?

We kindly request for the presentation risks associated with the operation of the NPPs and also after the closing those, on the environment, as a result of terrorist acts.

As is well known following the Fukushima accident, The European Union has launched stress tests for nuclear power plants, including Ukraine. We believe that it is necessary to state what measures have been implemented as a result of these tests and whether additional measures are envisaged with the extension of the lifetime of two nuclear power plants.

What are the responsibilities of the authorization holder, the competent authorities and the competent organizations in the event of a nuclear accident? In the event of a nuclear accident, is it necessary to cooperate with the neighboring countries, what are the mechanisms and means of intervention for such a situation?

Please describe the list of design extension conditions and of the severe accidents considered in the safety analyses for the respective nuclear power plants, as included in the documentation submitted for evaluation to the Ukrainian nuclear regulatory authority in the licensing process for the extension of the operation period of the NPPs);

- the accident scenarios and analysis assumptions for the potential severe nuclear accidents analyzed and the estimation of the source terms and associated probabilities of occurrence;

this information is requested mainly for evaluation of the needs for emergency planning and preparedness.)

VII. Aspect on radioactive waste management

How do you manage the radioactive waste and spent fuel from NPP's?

Please make a short presentation on how the responsibilities regarding the radioactive waste management are shared between the different institutions involved in this process. Who is in charge with the disposal of the radioactive waste and spent nuclear fuel?

Please detail the financing scheme for the radioactive waste and spent nuclear fuel management activities, including their final disposal.

Taking into account the prolongation of operation life-time for all reactor Units of Zaporizhzhya NPP (as it mentioned in the Report Development of the materials for assessment of environmental impact in the course of Zaporozhye NPP operation), we kindly ask you to detail:

a) the measures envisaged in order to ensure the availability of storage capacity for the radioactive waste and spent nuclear fuel resulted from the operation, refurbishing and decommissioning activities;

b) how will be assessed the physical state and the operational safety of the storage facilities (given the fact that the Dry Spent Fuel Storage has been designed for 50 years and there is the option to extend the storage period to 100 years).

Also, please describe the incineration plant operation, in terms of types and volumes of waste to be processed annually and how the resulted ash is stored.

VIII. In terms of preparedness and response to emergency situations, we request additional information on the following issues:

- description of interfaces that exist or will exist with the interested parties and/or potentially affected in case of emergency situations recorded during the re-technologization activities and we refer here for the special case of events with possible transboundary impact, in the context of the associated state of the U.E.

- description of the measures taken to ensure a high level of nuclear safety, taking into account the existence of conflict outbreaks near ZNPP.

Taking into consideration that the documentation submitted concerns the extension of plant lifetime of the nuclear units of mentioned NPPs, then it is impossible for parameters defining process and safety performance not to change as a result of aging. This involves accepting records of intimate processes concerning the behavior of materials under environmental conditions subject to controllable dynamics (e.g., wear, cyclical stresses) and uncontrollable dynamics (e.g., degradation of mechanical behavior, degradation of electrical behavior, degradation of composite materials, corrosion, electro-erosion, erosion). Also, the impact of these structural changes will cause univocal changes in functional parameters impacting on nuclear safety (e.g., low purification degree, high content of fission products in the reactor coolant, increased deviations to trigger protective devices, reduced accuracy of process transducers). All this has to be quantified by PLIM-type specialized programs (Plan Life Management), which are not mentioned in the documentation.

IX. NGO's

Also, please find attached the comments submitted by the concerned public on these activities, namely the proposals from Greenpeace Central and Eastern Europe (Greenpeace Romania, Slovakia, Hungary) and Bankwatch Romania, to be taken into consideration, according to Art. 3 (8) and article 4 (2) of the Espoo Convention.