

**Environmental Impact Assessment for the Investment Proposal
Cernavoda NPP**

**Comment
on the Guidelines for the Scoping Stage
of the Units 3 and 4 from Cernavoda NPP**

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1. Energy Strategy

The **Letter** of the Romanian Ministry of Environment **to NUCLEARELECTRICA** specifies the topics for the EIA report. Neither this letter nor the attached checklist for the scoping stage of the EIA procedure does stipulate the proof of demand for this two power generating plants and the discussion of alternatives to nuclear power. This discussion concerns Austria because a NPP with 4 (or probably 5¹) reactors represents a much bigger risk in case of a common cause accident (e.g. earthquake) than a NPP with only two reactors.

Therefore Austria should express its interest in this issue. Information about the intended role of NPP Cernavoda 3 and 4 in the National Energy Strategy of Romania. Is there an expected demand in Romania itself or are the new capacities mainly planned for export of electricity?

Although it is a standard requirement for EIA reports to discuss the demand for new power generating capacities and the options to supply the demand, it is recommended to remind the Romanian side of this requirements.

2. Earthquake risk

Point 1, of the **Letter to NUCLEARELECTRICA** requires in e.) „the zone characterisation from seismic perspective“. Earthquake risk is one of the most discussed issues concerning Cernavoda NPP. It would be worth to ask, whether there is a new evaluation required, concerning either the site or the seismic qualification of the new units ?

3. Emissions during normal operation

Point 4. of the **Letter to NUCLEARELECTRICA** concerns the emissions during normal operation. These are not of high importance for Austria, but it could be useful to clarify whether Romania has considered the EU radiation protection targets:

Do the planned emissions during normal operation of the NPP Cernavoda consider that the emissions of all 4 units together must not cause an individual dose for a member of the population of more than 1 mSv/year, which is the dose limit valid in the European Union²?

Does the operation of 4 units at the same time imply improvements of filters for exhaust air and treatment of radioactive effluents - in particular concerning Tritium emissions?

4. Spent Fuel and Radioactive Waste Management

This issue is dealt with in Point 16 of the **Checklist** for the scoping stage. At present spent fuel is stored in an Interim Spent Fuel Storage (DICA), which is in operation since 2003 – As part of the National Radioactive Waste Management Strategy deposition in a final geological repository is planned -after a minimum of 50 years storage in Interim Spent Fuel Storage) . Concerning low and intermediate level radioactive waste (LILW) the situation is just similar. At present resins are stored in vaults and liquids in concrete tanks inside the Service Building- the national final surface disposal facility for LILW is planned to start operation in the year 2014. (This description is based on CITON 2006³, because the translation of the relevant part of the guidelines⁴ is misleading).

1 see point 88 of the Checklist for the scoping stage

2 Directive 96/29 Euratom of 13.5.1996

3 CITON 2006: Project Documentation Cernavoda NPP unit 3 and 4

4 point 16 of the Checklist for the scoping stage

To clarify this issue it is recommended to add the following questions:

Is treatment (conditioning and packaging) of LILW planned to be carried out at Cernavoda NPP site ? A sound spent fuel and radioactive waste management strategy should be a condition for the construction and operation of new NPPs.

According to point 16 of the **Checklist** the National Strategy for spent fuel and radioactive waste management is not yet approved by the government. Is there a procedure for the discussion and approval of this strategy ? When will it come into force ? Is the siting, planning and construction of final repositories for spent fuel and other radioactive waste part of the strategy? When shall the repository be available for deposition of spent fuel ?

5. Transports

This issue is treated in point 18 and 19 of the **Checklist**. Due to the operation of two more units at Cernavoda NPP transports of radioactive material will be doubled (fresh fuel to the NPP, spent fuel on-site and later to the geological repository, LILW transports to the treatment center and/or to the repository). It is recommended to specify the content of this issue: the frequency, inventory, properties and qualification of containers as well as the transport routes for spent fuel and radioactive waste should be discussed in the EIA documentation. ⁵

The increase of transports is of interest for neighbouring countries because transports in particular transports outside the NPP site, represent a security and a safety risk (attacks, traffic accidents).

6. Dismantling

Dismantling is dealt with in point 27 of the **Checklist**. The following questions are recommended in order to clarify this issue:

Does the comment to question 27 of the guidelines „*it is not case in this stage*“ mean, that decommissioning and dismantling as it is planned at the end of the plants lifetime will be subject of another EIA process before closure of the plant?

If dismantling of equipment or big components has to be done because of incidents during operation is there enough free space in the storage at the NPP?

7. Accidents

As it is said in the **Checklist** (point 41, 43, 76, 77, 78): it is possible that accidents could affect the environment and human health. On the last page of the Checklist downloaded from the website of the Romanian Ministry of Environment this is also confirmed by the answers to the two last questions:

*„Could the project affect the local, regional or global resources?
YES, IN CASE OF NUCLEAR ACCIDENT*

*Could the project affect the human health and welfare of population?
YES, IN CASE OF NUCLEAR ACCIDENT“*

⁵ point 18 of the Checklist for the scoping stage

In order to discuss the potential impact of accidents to other countries the BMLFUW should propose to include more information on this topic in the EIA documentation.

The severe accidents analysis should give an overview on the PSA results for Cernavoda unit 3 and 4:

- accident scenarios,
- core damage and core melt frequency,
- large release frequency
- source terms (instead of dose limits)

The **European Utility Requirements** for LWR Nuclear Power Plants confirm the requirement of the present of source terms instead of doses, in Volume 2 **Generic Nuclear Island Requirements**:

"The use of releases instead of doses for the design targets is justified by the following considerations:

*- The Plant Designer uses to assess the releases from the plant before computing doses
- there are large discrepancies between the methodologies used to compute doses from a given release. Setting the criteria on releases rather than on doses dramatically reduces the uncertainty."*¹⁶

To include the source terms in the presentation of the severe accident analysis is important in particular for the assessment of transboundary emissions and their impact to other countries.

In connection with the avoidance of accidents with large releases the EIA documentation should give information on the safety targets and status of the two new CANDU reactors and provide information which standards are considered, for example:

IAEA 2004: SAFETY STANDARDS SERIES No. NS-G-1.10, Design of reactor containment systems for nuclear power plants; Safety Guide, INTERNATIONAL ATOMIC ENERGY AGENCY, VIENNA, 2004

EUR 2001: European Utility Requirements for LWR Nuclear Power Plants (Generic Nuclear Island Requirements)

CNS 2005: Requirements for Design of Nuclear Power Plants, Canadian Nuclear Safety Commission, Pre-Consultation Draft– Issued For Trial Use and Comments, 2005