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Meeting of the Parties to the Convention on Environmental Impact Assessment in a Transboundary Context

Meeting of the Parties to the Convention on Environmental Impact Assessment in a Transboundary Context serving as the Meeting of the Parties to the Protocol on Strategic Environmental Assessment

Working Group on Environmental Impact Assessment and Strategic Environmental Assessment

Seventh meeting
Geneva, 28–30 May 2018
Item 4 of the provisional agenda
Application of the Convention to the lifetime extension of nuclear power plants

Draft terms of reference for possible guidance on the applicability of the Convention to the lifetime extension of nuclear power plants

Proposal by the ad hoc working group

Summary

At its seventh session (Minsk, 13–16 June 2017), the Meeting of the Parties to the Convention on Environmental Impact Assessment in a Transboundary Context tasked the Working Group on Environmental Impact Assessment and Strategic Environmental Assessment to discuss and consider adopting terms of reference for possible guidance on the applicability of the Convention with regard to decisions on the lifetime extension of nuclear power plants to be prepared by an ad hoc working group (see ECE/MP.EIA/23/Add.1-ECE/MP.EIA/SEA/7/Add.1, decision VII/3–III/3, annex I, item

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I.9). The Working Group was further requested to take into consideration the outcomes of a workshop to be organized by the ad hoc working group on the topic during the Working Group's seventh meeting.

Pursuant to those mandates, the present document contains terms of reference for possible guidance on the applicability of the Convention to the lifetime extension of nuclear power plants prepared by the ad hoc working group. The Working Group on Environmental Impact Assessment and Strategic Environmental Assessment is expected to discuss the terms of reference and to consider their adoption.

I. Mandate

1. The Meeting of the Parties to the Convention on Environmental Impact Assessment in a Transboundary Context (Espoo Convention) at its seventh session (Minsk, 13–16 June 2017) agreed on the establishment of an ad hoc working group to draft terms of reference for possible guidance on addressing the applicability of the Espoo Convention to decisions on the lifetime extension of nuclear power plants. The Parties also agreed that the ad hoc group should meet at least twice prior to the seventh meeting of the Working Group on Environmental Impact Assessment and Strategic Environmental Assessment and should organize a dedicated workshop at that meeting to discuss the outcomes of its work, with the presence at that workshop of the Implementation Committee under the Espoo Convention and its Protocol on Strategic Environmental Assessment, civil society and possibly the International Atomic Energy Agency (IAEA) and the Nuclear Energy Agency of the Organization for Economic Cooperation and Development. The Working Group was mandated to discuss and consider adopting the terms of reference at its seventh meeting taking into account the outcomes of the workshop. It was also requested to consider the subsequent extension of the ad hoc group to include international and non-governmental organizations (see ECE/MP.EIA/23-ECE/MP.EIA/SEA/7, para. 12; and ECE/MP.EIA/23/Add.1-ECE/MP.EIA/SEA/7/Add.1, decision VII/7–III/3, item I.9).

II. Background

2. At its sixth session (Geneva, 2–5 June 2014), the Meeting of the Parties to the Convention discussed whether the extension of the lifetime of a nuclear power plant was within the scope of the Espoo Convention.[1] The Implementation Committee, in its recommendations to the Meeting of the Parties concerning compliance with the Convention, had taken the general view that "the extension of the lifetime of a nuclear power plant, after expiration of the original licence, even in absence of any works is to be considered as a major change to an activity and consequently subject to the provisions of the Convention".[2] However, considering the various positions of the Parties on the topic, the compliance decision that the Meeting of the Parties adopted at that session (decision VI/2) in the end did not include a general statement on the extension of the lifetime of a nuclear power plant, limiting itself to a finding of non-compliance in relation to the Rivne nuclear power plant (see ECE/MP.EIA/20/Add.1-ECE/MP.EIA/SEA/4/Add.1, decision VI/2, paras. 68–71).

3. There is, therefore, still considerable legal uncertainty as to whether and in what circumstances lifetime extensions of nuclear power plants require a transboundary environmental impact assessment under the Espoo Convention. There are several cases of this nature pending before the Implementation Committee,[3] with a significant number of further cases envisaged in the next 10 years.

[1] This issue had already been addressed in a background note on the application of the Convention to nuclear-related activities prepared by the secretariat for a panel discussion on nuclear energy-related projects at the fifth session of the Meeting of the Parties to the Convention (Geneva, 20–23 June 2011) (see ECE/MP.EIA/2011/5, paras. 9–11).

[2] See ECE/MP.EIA/2014/L.3, draft decision VI/2, para. 5 (f); see also the Committee's findings and recommendations further to a Committee initiative concerning Ukraine with regard to the Rivne nuclear power plant (ECE/MP.EIA/IC/2014/2, annex, para. 65).

[3] The following cases are pending: the Netherlands, Borselle nuclear power plant (EIA/IC/INFO/15); Belgium, Doel nuclear power plant reactors 1 and 2 and Tihange nuclear power plant reactor 1 (EIA/IC/INFO/18); Czechia, four reactors at the Dukovany nuclear power plant (EIA/IC/INFO/19);

III. State of play

4. Following the first meeting of the ad hoc working group (Luxembourg, 27–28 November 2017), in December 2017 and February 2018 its Co-Chairs circulated updated versions of the document containing elements of terms of reference for the possible guidance. Comments received from a number of Parties to the Convention represented in the ad hoc group have been reflected in the updated versions. In the second meeting of the ad hoc working group (Brussels, 20–21 February 2018) the paper was further discussed, strictly focusing on the content of the draft terms of reference. The answers to the application of the Convention as regards the extension of lifetime of nuclear power plants will have to be given in possible future guidance itself. The current draft terms of reference will be the basis of discussion at the workshop taking place at the meeting of the Working Group in May 2018. Along with the outcomes of that workshop, they will be submitted to the Working Group, which will then discuss and consider the adoption of the terms of reference.

IV. Relevant criteria for determining the applicability of the Convention

5. There are several stages before the requirement to notify under article 3 of the Espoo Convention is established. As a first step, the cumulative criteria of a "proposed activity" as defined by article 1, paragraph (v), of the Convention have to be fulfilled. A "proposed activity" must be:

(a) an "activity" or a "major change to an activity";

(b) "subject to a decision";

(c) "of a competent authority";

(d) "in accordance with an applicable national procedure".

6. When a lifetime extension is regarded as a "proposed activity", a transboundary procedure in accordance with the Convention will only be required if a second set of cumulative criteria are fulfilled (see article 2, paras. 2 to 5, and article 3, para. 1, of the Convention). According to these criteria, the lifetime extension must be:

(a) "likely to cause";

(b) "significant";

(c) "adverse";

(d) "transboundary impact".

7. These criteria should only be analysed with regard to their specific relevance in the context of lifetime extensions of nuclear power plants.

V. Topics to be considered

8. The topics in this section highlight six areas that should be explored further when developing possible guidance for the applicability of the Espoo Convention to decisions on

Ukraine, several reactors at the South Ukraine, Khmelnitskyi and Zaporizhzhya nuclear power plants (EIA/IC/INFO/20).

the lifetime extension of nuclear power plants. A short introduction for each topic will explain the reasons for and the aspects of the respective topic that could be important with regard to the criteria listed under section IV above. The introductions will be followed by a list of points of discussion related to the topics.[4]

9. As set out in the mandate for the ad hoc working group and as discussed in the group's meetings in Luxembourg and in Brussels, the intention is that the discussion on a possible future guidance should be limited by the scope of the Espoo Convention in relation to the lifetime extension of a nuclear power plant.

Topic 1
Extension of an existing licence or issuance of a new licence by a competent authority in the case of a time-limited licence

10. In several countries time-limited licences are foreseen for the operation of nuclear power plants. If the time limit runs out the operator may ask for an extension of his licence or for the existing licence to be reissued for an extended period of time. Possible future guidance should reflect whether and under what circumstances the continued operation subject to a time extended licence or a new licence will meet the criteria of a proposed activity as defined in article 1, paragraph (v), of the Convention (see para. 5 above).

Points of discussion

- Is the continued operation of a nuclear power plant subject to a time-extended licence a new "activity" or a "major change" to an existing activity according to article 1, paragraph (v), of the Convention?
- Practical relevance of the above distinction:
  - Classification as a "major change" could perhaps offer more flexibility in a case-by-case examination of lifetime extensions of nuclear power plants (e.g., a short extension might possibly be regarded as a "minor change").
- How can "major" be defined with regard to the extension of the lifetime of a nuclear power plant?
- Does it make a difference whether the licence providing for lifetime extension modifies the original licence or whether it extends the lifetime of the facility only, leaving the technical or operating conditions untouched?
- The scope of this topic covers cases in which the former time-limited licence has not expired yet. How should cases be handled in which the operator asks for a time-extended licence after the validity period of the original licence has expired? Is the later operation in the latter cases necessarily a new activity which will require a transboundary procedure according to the Espoo Convention if the other criteria (e.g., likelihood to cause significant adverse transboundary impact) are met?
- Is there an agreed technical definition for "lifetime extension" and "long-term operation"[a] and how could this definition help to clarify the applicability of the

[4] Note: the order and numbering of the topics and the points of discussion does not indicate any form of hierarchy between them.

Convention in possible guidance?

[a] According to the European Commission's Joint Research Centre in its presentation at the first meeting of the ad hoc working group, no specific definition for "lifetime extension" could be found. For "long-term operation" the Joint Research Centre referred to an IAEA definition: "operation beyond an established time frame set forth by, for example, licence term, design, standards, licence and/or regulations". (See, for example, *Plant Life Management Models for Long Term Operation of Nuclear Power Plants*, IAEA Nuclear Energy Series No. NP-T-3.18 (Vienna, International Atomic Energy Agency, 2015), available from https://www-pub.iaea.org/books/iaeabooks/10520/Plant-Life-Management-Models-for-Long-Term-Operation-of-Nuclear-Power-Plants).

Topic 2
Are there particular factors or preconditions, such as "physical works", for identifying a "proposed activity"?

11. The definition of "proposed activity" in article 1, paragraph (v), of the Convention does not mention particular factors such as "physical works" as a specified precondition for a proposed activity.[5] A possible future guidance on lifetime extensions for nuclear power plants should include consideration of whether factors like "physical works" could be a relevant criterion to identify a "proposed activity" within the scope of the Convention.

12. Attention should also be given to the fact that "physical works" is not a legally defined term. "Physical works" may include different categories of activities only some of which might be relevant with regard to the applicability of the Convention to the lifetime extension of nuclear power plants. Others may not (e.g., because they may have no influence on the operation of a facility). If the inclusion of a requirement regarding "physical works" was found relevant, then the possible guidance should analyse different types of "physical works" and their significance with regard to the application of the Convention.

[5] The definition of "proposed activity" in article 1, paragraph (v), of the Espoo Convention is different from the definition of "project" in Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment (EIA Directive). With regard to the definition of "proposed activity" of the Espoo Convention, the Implementation Committee took the view that "the extension of the lifetime of a nuclear power plant, after expiration of the original licence, even in absence of any works, is to be considered as a major change to an activity and consequently subject to the provisions of the Convention" (see para. 2 above). However, according to article 1, paragraph 2 (a), of the EIA Directive "project" means: "the execution of constructive works or other installations or schemes; [and] other interventions in the natural surroundings and landscape including those involving the extraction of mineral resources". The European Court of Justice in its rulings came to the conclusion that the extension of a licence "in the absence of any works or interventions involving alterations to the physical aspect of the site" is not a project under the EIA Directive (see Case C-275/09, *Brussels Hoofdstedelijk Gewest v. Vlaamse Gewest*, E.C.R. [2011] I-1753, para. 30).

Points of discussion

- Are there reasons to assume that a "proposed activity" will require physical works or other particular factors, although not mentioned explicitly in article 1, paragraph (v), of the Convention?
- If proposed activities have to be accompanied by physical works, how should physical works relevant in terms of the Convention be distinguished (e.g., by quantitative and qualitative criteria) from others which could be disregarded? In this context, do physical works also include measures for the improvement of nuclear safety (i.e., safety upgrades)? If not, how should measures for safety improvement be distinguished from other works such as a power upgrade?
- Does it make a difference whether physical works will be performed before the operation continues or sometime after the extension?
- Are there any other possible factors or preconditions?

Topic 3
Lifetime extension by a specific domestic law

13. The term "competent authority" is defined in article 1, paragraph (ix), of the Convention as an authority responsible for performing the tasks covered by the Convention or entrusted by a Party with decision-making powers. In some countries the lifetime of a nuclear power plant has not been extended by an administrative decision of a competent authority but by a specific domestic law.

Points of discussion

- Is a national parliament a "competent authority" in the meaning of article 1, paragraphs (v) and (ix), of the Convention?
- If a national parliament adopts a specific domestic law extending the lifetime of a certain nuclear power plant, what conditions will have to be met to assume that the decision is taken "in accordance with an applicable national procedure" (article 1, para. (v), of the Convention)?
- Does it make a difference whether the underlying licence is limited or unlimited?
  - In some countries, for example, the operating period of a nuclear power plant with an unlimited time licence is reduced by a specific domestic law. Later, this law is amended in order to allow for an extended operating period.
- Does it make a difference whether the law providing for a lifetime extension modifies the underlying licence (i.e., its period of validity) or whether it extends the lifetime of the facility directly leaving the operating licence untouched?

Topic 4
Likelihood of lifetime extension to cause significant adverse transboundary impact

14. As noted above (see in particular para. 6), the extension of the lifetime of an existing nuclear power plant would only require a transboundary procedure in accordance with the Espoo Convention if the resultant operation of that nuclear power plant was likely to cause significant adverse transboundary impact. Therefore, possible guidance should consider how to determine if a lifetime extension is likely to have this effect. When exploring the likelihood of significant adverse transboundary impact, attention should also be given to the different types of possible lifetime extensions. In some cases, a continued operation under the same conditions (i.e., with no significant technical changes or updates) will be allowed, while in other cases lifetime extension will only be permitted if accompanied by measures to improve nuclear safety. It should be made clear whether and how these differences could be reflected in the assessment.

Points of discussion

- Can the extension of the lifetime of a nuclear power plant be regarded as a factor that is likely to cause significant adverse transboundary impact (noting the definition of "impact" in article 1, paragraph (vii), of the Convention)?
  - The extended operation of a nuclear power plant might result, e.g., in
    - Malfunction by ageing components.
    - The risk of an accident.
    - An increase in the time of exposure to extreme natural hazards that could alone or in combination with human failure or malevolent human acts lead to the release of radioactive substances into the environment.
    - Increased generation of both radioactive waste and spent nuclear fuel.
  - Should the guidance also consider how to address changes in the environment and/or changes in environmental standards when assessing the possible significant adverse transboundary impact of the lifetime extension of an existing nuclear power plant?
- Could a specific process (e.g., "screening") be recommended in order to assess whether lifetime extension will be likely to cause significant adverse transboundary impact? What kind of assessment will be required for this "screening"?
- Does it make a difference whether lifetime extension will be accompanied by measures to improve nuclear safety or measures to reduce the environmental impact? Will measures to improve safety have to be assessed with regard to their possible impact on the environment (beyond radiological aspects)?
- Does the duration of the lifetime extension make a difference?
  - For instance, the likelihood of a significant adverse transboundary impact could perhaps be lower if the nuclear power plant will only be allowed to operate for an additional short period of time.
- Does it make a difference whether the nuclear power plant in question was constructed before the Espoo Convention existed/was in force for a given Party and never subject to a transboundary environmental impact assessment

procedure (including public participation)[a] according to the Convention?

- If the Party of origin concludes that no significant adverse transboundary impact is likely to occur, how can that conclusion be demonstrated without conducting a transboundary environmental impact assessment? Could that be demonstrated by the specific process ("screening") mentioned above?

[a] Transboundary involvement of the public is an issue also discussed under the United Nations Economic Commission for Europe Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (Aarhus Convention).

Topic 5
Periodic safety review[6]

15. According to the respective national legislation there are different ways of proceeding once a periodic safety review of a nuclear power plant has been carried out. In some countries the operator needs a permission from the competent authority to continue the operation of the installation following its periodic safety review. Depending on the findings of the periodic safety review, the permission may include an obligation for the operator to carry out nuclear safety improvements of the installation before continuing its operation or in parallel to its continued operation. A periodic safety review could also be used in support of the decision-making process for a licence extension or renewal (if required by the national legal framework). Possible guidance should also consider these cases.

Points of discussion

- Does a permission granted by the competent authority to continue operation after a periodic safety review has been carried out fulfil the characteristics of a "decision" as set out in article 1, paragraph (v), of the Convention?
- Could the term "decision" in article 1, paragraph (v), of the Convention also include decisions to allow or not allow a continued operation of an installation following its periodic safety review?
- Even if the national law does not foresee a formal permission to continue the operation of an installation after a periodic safety review has been carried out, the competent authority will have to examine the findings of the periodic safety review and consider if continued operation will be acceptable. Could the conclusion of this assessment be regarded a "decision" according to article 1,

[6] A periodic safety review after a certain period of operation of a nuclear power plant is for instance mandatory in the European Union under the Euratom Nuclear Safety Directive (Directive 2009/71/EURATOM establishing a Community framework for the nuclear safety of nuclear installations and its amendment, Directive 2014/87/Euratom). A periodic safety review is a comprehensive safety review of all the important aspects of safety carried out at regular intervals, typically every 10 years. (See also *Periodic Safety Review for Nuclear Power Plants: Specific Safety Guide*, IAEA Safety Standards Series No. SSG-25 (Vienna, International Atomic Energy Agency, 2013), available from https://www.iaea.org/publications/8911/periodic-safety-review-for-nuclear-power-plants.) The operating licence exists independently of the periodic safety review.

paragraph (v), of the Convention?

- See article 2, paragraph 3, of the Convention: "an environmental impact assessment is undertaken prior to a decision to authorize or undertake a proposed activity listed in Appendix I".

- Do the same principles apply for a permission to continue operation following an outage?
- How can a distinction be drawn between usual maintenance works and works related to a periodic safety review?

Topic 6
Operation beyond the designed (minimum) lifetime

16. At the time of their construction, many nuclear power plants were typically designed for a (minimum) lifetime of 30 or 40 years. In some countries, according to their national law, a review will be carried out when the operation of a nuclear power plant comes to the end of its designed (minimum) lifetime. To continue the operation following this date, a permission by the competent authority may be required, for example following a periodic safety review. Depending on the findings of the review, the permission may include an obligation for the operator to carry out nuclear safety improvements of the installation.

Points of discussion

- The situation described above, i.e., the review of a nuclear power plant in order to explore whether continued operation beyond its designed (minimum) lifetime will be possible, could be similar to the cases discussed under topic 5 (periodic safety review). Are there any differences that would justify a different approach?
- Would it be helpful for possible guidance to include a definition/a common understanding of the term "designed lifetime"?[a]

[a] See the different existing definitions from various organizations, such as IAEA ("Design life": "The period of time during which a facility or component is expected to perform according to the technical specifications to which it was produced", *IAEA Safety Glossary: Terminology Used in Nuclear Safety and Radiation Protection*, 2007 Edition (Vienna, International Atomic Energy Agency, 2007), available from http://www-ns.iaea.org/standards/safety-glossary.asp).