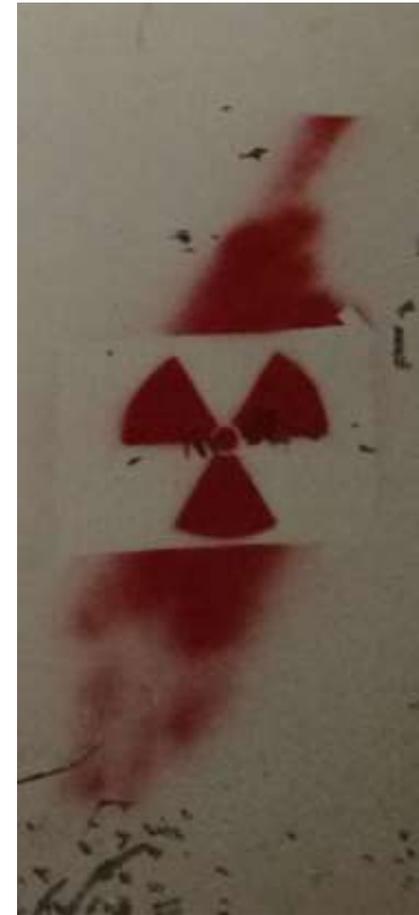


# Nuclear Power Plants Lifetime Extension – Examples of transboundary Environmental Impact Assessments

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# Transboundary Environmental Impact Assessment (EIA) for lifetime extension of Nuclear Power Plants (NPP)

- Until 2022, the following EIA lifetime extension procedures have been conducted/started in Europe:
  - Slovenia: Krško (2022 - )
  - Ukraine: Zaporizhka 1-6 and South Ukraine 1-3 (2015/2021 - )
  - Finland: Loviisa 1&2 (2021 - )
  - Belgium: Doel 1&2 (2021 - )
  - Ukraine: Rivne 1&2 (2017 - )
  - Hungary: Paks 1-4 (2005)
- But: In Europe, about 120 NPP are older than 30 years, for many lifetime extensions are planned
- In 2020, active complaint cases in Espoo Convention on 55 reactors at 16 sites

# Review of two aspects of the most recent EIA procedures

- Timing of the EIA procedure:
  - An Environmental Impact Assessment should be finished before the decisions on a lifetime extension is made. The results of the EIA have to be considered in this decision.
  - Is the EIA undertaken early enough to include the results in the decision? Is a formal procedure established to take the EIA results for a lifetime extension into account at all?
- How are questions of nuclear security (terror, sabotage) included in the EIA?

# Timing of the EIA procedures – early enough and will results be taken into account in the decision on the lifetime extension?

- **Example EIA Doel 1&2/Belgium:**
- Lifetime has been extended in 2015 until 2025 via the nuclear phase-out law; this law had to be annulled in 2020 due to ruling of the Constitutional Court, but the law's effect is maintained until a new law will be in force to ensure supply security. The EIA has to be completed until end of 2022.
- During the consultations of the Belgian and the Austrian side it was confirmed that the EIA results will be taken into account for the revised version of the nuclear phase-out law. But it remained unclear in which manner this will take place. Furthermore, it remained unclear how and when the EIA results (e.g. for safety upgrades) will be taken into account in the periodic safety review, especially before the amended nuclear phase-out law will be approved.
- **The EIA was not conducted early enough, and it is not clear how the EIA results will be taken into account.**

# Timing of the EIA procedures – early enough and will results be taken into account in the decision on the lifetime extension?

- **Example EIA Lifetime extension Rivne 1&2 :**
- Lifetime has been extended in 2010 for 20 years without an EIA
- Decision of ESPOO MOP in 2014 that an EIA needs to be conducted (before PSR of 2020)
- But: the latest decision on license amendment already took place after PSR in 2020. The EIA is still not finished, but the licensing procedures are completed.
- In December 2020, the Meeting of the Parties to the Espoo Convention asked Ukraine to revise its final decision on the lifetime extension of Rivne 1&2, taking due account of the outcomes of the EIA procedure.
- Debates during consultations of the Ukrainian and the Austrian side during the EIA could not clarify when and how EIA results will be taken into account.
- **The EIA results might not be taken into account at all.**

# Timing of the EIA procedures – early enough and will results be taken into account in the decision on the lifetime extension?

- Example **EIA Zaporishe (ZNPP):**
- EIA started in Austria in 2021 (in other countries already in 2015 with public consultations in 2017)
- ZNPP has 6 units; of those 5 already received a license for their lifetime extension (unit 1&2 in 2016, unit 3 in 2017, unit 4 in 2018 and unit 5 in 2021). ZNPP-6 is still in the 30 years operation period until 2026.
- **The results of the EIA will be reviewed by the responsible authorities, but it is not clear if this review will also include the already issued operation licenses for units 1-5**

# Timing of the EIA procedures – early enough and will results be taken into account in the decision on the lifetime extension?

- Good practice: **EIA Loviisa 1&2**, **EIA Krško** started early enough.

# Nuclear security

- Terrorist attacks and acts of sabotage can have significant impacts on nuclear facilities and cause severe accidents
- Since 9/11, the protection of the NPP against a deliberate crash of a large airliner should be considered
- Nuclear Threat Initiative (<https://www.nti.org/>) analyses security status of countries by giving scores for cyber security, insider threat prevention, and other security relevant topics.
- The IAEA supports states by undertaking and organizing advisory security assessment and peer-review missions through its International Physical Protection Advisory Service (IPPAS).
- Good Practice if the EIA Report explains that security arrangements exist and are further developed and practiced (EIA Loviisa 1&2), and if IPPAS missions have been conducted
- Bad Practice if the EIA Report does not focus at all on security issues (EIA of Ukrainian NPPs). To date, no IPPAS mission has been conducted in Ukraine.

# Conclusions

- Many/most old NPP never were subject to an EIA, some countries (e.g. France and Czech Republic) try to avoid conducting an EIA for their NPP lifetime extensions
- The quality of the EIA is also of importance:
- NGOs should ask for EIA for LTE early on to ensure that the EIA will be completed before lifetime extension permit has been granted.
- It is important to control that the results of the EIA will be taken into proper account in the decisions on the lifetime extension.
- It is up to the parties in an EIA on lifetime extension to demand that nuclear security questions are included seriously, since the parties of origin tend to avoid this.
- To make complaints to the Espoo Implementation Committee possible, it is important to collect documentations on those issues.