

The signing NGOs endorse this statement of Greenpeace:

Name, Organisation

Introduction and procedure

An environmental impact assessment is currently underway for extending the lifetime of the two reactors Doel-4 and Tihange-3. In 2025 both reactors should be shut down after 40 years of operation, now they should be in operation for 10 years longer. However, these 10 years are only calculated from the first industrial power generation after 2025; the planned latest switch-off date is 12/31/2037.

The Doel-4 and Tihange-3 reactors were put into operation before the EIA legislation came into force. The life extension EIAs are thus the first EIAs to be carried out for these two reactors. Therefore, the changes in the environment since commissioning, such as the sharp increase in population density, should also be taken into account.

Since a serious accident in Doel-4 or Tihange-3 could affect large parts of Europe, it would be appropriate to hold a Europe-wide public hearing as part of the EIA.

Alternatives

Although the EIA report explains that any combination of energy forms that can ensure sufficient capacity and a high degree of operational reliability could theoretically be considered as an alternative, alternatives were not examined, but a political decision was made to extend the service life. The justification for extending the service life of Doel-4 and Tihange-3 is factually incorrect, because illogical conclusions are drawn from the current situation ¹.

The political goal pursued with the lifetime extension, namely guaranteeing the security of the power supply, is also not secured, since the old reactors are also threatened by downtimes due to security-related events, just like in France.

In the period when there could be bottlenecks in the energy supply (2025 to 2027), the nuclear power plants would be switched off. They would only be connected to the grid again when additional offshore capacities are already connected or almost connected to the grid.

In addition, according to Elia, an increase in flexible capacity is required, but Doel-4 and Tihange-3 cannot meet this. However, an extension of the service life of Doel-4 and Tihange-3 would hinder the desired expansion of renewable energies.

A technically well-founded review of the possible alternatives through renewable energies must be carried out and their potential environmental impact evaluated comparatively instead of presenting a political decision based on illogical conclusions to extend the life of the reactors Doel-4 and Tihange-3 as without alternative and negating their environmental impact.

Nuclear waste

It is fundamentally problematic to approve a lifetime extension without the safe disposal of the nuclear waste, including its final storage, being assured. After all, the lifetime extension would result in around 810 additional spent fuel elements, which corresponds to an increase of 7.8% compared to the amount without lifetime extension. For these additional fuel elements, a more than 1.2 km long tunnel is required in a future repository. So this is not a negligible amount. This makes the complicated search for and construction of a repository even more difficult.

¹to rely on its own old nuclear power plants threatened with failure because of the failures of the French nuclear power plants; to become dependent on uranium to achieve fuel independence

The planning of a repository for high-level waste in Belgium is also at a very early stage. It is by no means certain that operations will actually start in 2080 or that a repository will be found at all. The interim storage facilities and canisters should be checked to see whether they offer sufficient safety for the long period up to 2080 or, if necessary, beyond.

Weaknesses of the reactor type in long-term operation

The quality of the materials used in Doel-4 and Tihange-3 degrades through physical aging, which can lead to component failure. A precautionary replacement of components as part of aging management can reduce the risks. However, the scope of the exchange is determined in consultation between the operator and the supervisory authorities and is dominated by economic considerations. Experience also shows that unexpected damage can occur over longer periods of operation. In addition, not all components can be replaced, for example the reactor pressure vessel. Overall, the risks increase with the operating time due to aging effects.

The security concept of Doel-4 and Tihange-3 is also outdated compared to current security requirements and regulations. The EIA report claims that the systems largely meet the new requirements, which is not true in any way compared to international requirements. Overall, the EIA report makes it clear that the safety requirements for the lifetime extension are to be reduced, which automatically leads to an increase in risk.

Due to the retrofits carried out so far, Doel-4 and Tihange-3 do not reach the safety level of new plants, design deficits relate to the area of beyond design basis accidents. Instead of technical upgrades, only measures by the operating team have been introduced so far. **To prevent a massive radioactive release, the operating team would have to try to prevent a serious accident under adverse conditions and essentially with mobile devices.** Note: In Sweden, reactors of the same type have been retrofitted with an independent core cooling system.

The most important safety goal for new nuclear power plants is the exclusion of core meltdown accidents with early and high releases. So far, this safety requirement has not been met for Doel-4 and Tihange-3. This fundamental safety objective must be met by new nuclear power plants. In the case of existing plants, on the other hand, it is conceded that the implementation of the requirements may not be "reasonably feasible". It therefore remains the task of the supervisory authority to check to what extent the planned measures are sufficient to meet the requirements for the necessary protection of the population. **The population and politicians have a right to know what deficits Doel-4 and Tihange-3 have compared to the current security requirements. Furthermore, they should receive information about which upgrades would be technically possible but should not be carried out for economic reasons.**

Unlike in France, where the current safety targets are used as the standard for retrofitting to extend the life of the old reactors in the 900 MW class, no attempt is made in Belgium to meet these requirements as part of the planned life extension.

As recommended by WENRA, Doel-4 and Tihange-3 should be checked for the lifetime extension as part of the PSR to determine the extent to which they meet the applicable safety targets for new reactors. Only on this basis can the supervisory authority decide whether continued operation for Doel-4 and Tihange-3 can be approved or whether the risk to the population is too great.

Dangers from natural events

Possible effects of natural hazards must be checked as part of the periodic safety reviews that take place every 10 years. If necessary, the results of the review should lead to an adjustment of the design basis of the plant and be included in the assessment of beyond design basis accidents. However, it is not clear

from the EIA documents whether this process is to be carried out as part of the life extension for Doel-4 and Tihange-3. On the contrary, the wording suggests that a reassessment will not be carried out.

With regard to extreme impacts, the negative changes caused by climate change are mentioned, but at the same time the reassessment after the 2011 stress test is considered sufficient for the period up to 2037. If the flood protection system in Tihange fails, the area will be flooded, the safety systems will fail and the operating team will have to use mobile equipment from boats to prevent a core meltdown accident. A dyke breach can also lead to a dangerous situation.

In view of the existing and increasing danger from extreme natural events, the risks must be reassessed, which also takes climate change into account appropriately, instead of relying on the supposed existing safety reserves.

Dangers from terrorist and military actions

Terrorist attacks and acts of sabotage can have a significant impact on nuclear facilities and cause serious accidents - including for Doel-4 and Tihange-3. This applies in particular to the threat situation in Belgium presented. Yet they are hardly mentioned in the EIA document. Such events have been discussed to some extent in comparable EIA documents.

Although the Doel-4 and Tihange-3 plants are better protected than even older plants, their level of protection shows deficits compared to the level of protection expected today. In addition, the requirements in Belgium for such protection do not meet the currently required requirements.

The special threat situation in Belgium and the insufficient protection of the Doel-4 and Tihange-3 plants against terrorist attacks and acts of sabotage should play a decisive role in an assessment of the risk for the population by extending the operating hours.

Impact of a serious accident on Belgium and neighboring countries

The accidents calculated in the EIA documents (design basis accidents and beyond design basis accidents) can lead to intervention measures such as staying indoors or the administration of potassium iodide tablets having to be ordered in Belgium. Furthermore, both the design basis and the beyond design basis accident can lead to agricultural measures having to start.

However, it must be taken into account that these calculated accidents are by no means the worst possible accidents. A possible accident was calculated for both reactors in the flexRISK project. These results show that large parts of Europe could become contaminated. Areas northeast of the relevant nuclear power plants have the highest weather-related probability of being contaminated by a severe accident. Such an accident could even result in areas in and around Belgium having to be resettled.

The transboundary impacts for a major accident should be calculated in the EIA process, regardless of the estimated probability of occurrence, as long as it is physically possible in order to clarify the risk. The results of the flexRisk project determined the massive impact of such an accident for Belgium and Europe.