

## Transboundary consultation LTO Doel 4 and Tihange 3

EPA Question (mail of 5 April 2023)

“Having reviewed the documents provided and taking into consideration previous transboundary consultations on the extension of life of NPPs in Belgium, the EPA has suggested that the following should be considered to enable the EPA and members of the public to evaluate potential transboundary effects:

- The environmental impact report should be available in English (Évaluation de l'impact environnemental; Dans le cadre du report de la désactivation des centrales nucléaires Doel 4 et Tihange 3); and
- The technical report or non-technical summary does not make reference to potential doses to the public in Ireland from an emergency exposure situation, it only makes references to dose to the UK; the dose to members of the Irish public could also be considered.

Once the consultation opens the EPA will submit a formal response during the consultation period."

Belgium Answer (18 April 2023)

"It is correct that the technical report and non-technical summary of the environmental impact assessment only contain numbers for both design and beyond-design based accidents for neighbouring countries of Belgium. These numbers represent the potential doses and deposition levels for emergency exposure situations linked to these accident scenarios for The Netherlands, Germany, Luxembourg, France, and the UK.

It is important to note that the reported values are the maximum values for a full year of real meteorological conditions (based on ECMWF data) with starting time of the release every hour of that meteorological year (2020). Additionally, conservative estimates have been made on release conditions and release duration. These factors result in very conservative estimates of potential doses and deposition levels. Consequently, the actual impact of the accident scenarios considered will likely be much lower. Figure 22 provides some insight into how much lower the impact could be. It shows the distribution of the maximum time-integrated concentration, which is directly proportional to the dose from the radioactive cloud, including inhalation of an accident at Doel 4 on France, for the over 8700 meteorological conditions considered. In 99% of meteorological conditions in 2020, the time-integrated concentration (and consequently the impact) is at least three times less than the value reported, and in 95% of cases, this is even more than 9 times less.

Second, the impact on neighbouring countries, even under very conservative assumptions as explained above, is very limited. For example, potential doses (including the equivalent thyroid dose) in the UK, which is considerably closer to Belgium than Ireland, are far below any intervention levels and even far below the 1 mSv/year effective dose limit for planned exposures for the public (i.e. in non-emergency exposure situations). Additionally, deposition levels in the UK are low, and only in the case of a Loss of Coolant Accident scenario at Doel 4 could deposition of I-131 cause the need for countermeasures for the food chain under these very conservative conditions.

Because of the distance between Belgium and Ireland and the degree of conservatism in the calculations, the potential impact (doses and deposition levels) on the UK can be considered very conservative estimates for the impact on Ireland. The potential dose, including the thyroid dose, is low and far below any intervention levels for emergency exposure situations and even far below the effective dose limit of

1 mSv/year for planned exposure situations. Furthermore, it is extremely unlikely that food (and feed) production in Ireland would be affected."