Webinar

What You Need to Know About Nuclear Power in the Climate Crisis –
Impacts of Climate Change on Nuclear Safety and Supply Security

June 3, 2020, 10-12 am CET

Report

Currently nuclear energy promoters are trying to make use the climate crisis for their goals by claiming that nuclear energy is a solution. But can nuclear energy contribute to a de-carbonized future? Rather the contrary: climate change poses new challenges and risks to the operation of nuclear power plants, increasing nuclear risk and challenging supply security. The **Joint Project – Nuclear Risk & Public Control** organized a webinar in which we presented our **new working paper "Impacts of Climate Change on Nuclear Safety and Supply Security"**.

25 participants from 12 countries (AT, BG, CH, CZ, DE, F, HU, NL, PL, SLO, UK, UKR) were interested and took part in the webinar.

Three presentations covered the topic from several angles:

- ***Climate change impacts on nuclear power plants*:** Oda Becker, independent expert for the risks of nuclear facilities, Hannover/DE, presented her findings on how climate change phenomena influence the risks posed by new and old NPP and takes a look at planned nuclear power plants.
- ***Hot Danube water for Paks:*** Eszter Mátyás from Energiaklub/HU and PhD student at CEU, shared her knowledge about climate development in Hungary in the recent decades and describe how the increasingly hot temperatures limit the operation of the nuclear power plant Paks.
- ***Operating and new nuclear power plants under pressure:*** Patricia Lorenz provided examples how water scarcity impacted the planning of new reactor units at Dukovany site in the Czech Republic, and on new water regulations that are under way for the Swiss NPP Beznau.

All three presentations can be downloaded from our website http://www.joint-project.org/.

Discussion:

Why do different NPPs have **different temperature limits for cooling water**? (30°C in Paks, 28°C in France, 25°C in Beznau, 20.5°C in Mühleberg…)

It depends on the differences in the ecosystem, some rivers where cooling water is taken from are cooler than others. It is also political decision. One problem is that the average temperature data on which the limits are based may be out of date.

The public should be involved in monitoring.

How do politicians and operators react on water scarcity – with **downsizing of reactor types**? Example of Dukovany-5: the planned reactor power was downsized from planned 1,800 to 1,200 MW in response to the restricted availability of cooling water– but is it true or are other motives driving this decision? Obviously, the nuclear establishment in the Czech Republic and certain political circles intend to buy the Rosatom reactor VVER-1200, the French EPR is not welcome.

Can the reactor builder resize their types to fit in a project? Yes, there is development project underway to downsize the 1,700 EPR to 1,100 MW. This new output for the EPR is being reduced mainly for technical reasons, not economic ones.

Public measuring of the Danube's temperature at Paks: Regular measurements of the Danube's temperature are needed. But local people cannot conduct regular measurement. During the webinar discussion the idea came up that Joint Project could establish a monitoring program, finance the equipment and some webcam for remote maintenance. If anyone is interested, please get into contact with Eszter Mátyás/Energiaklub.

The independence of the regulator in Hungary is not a given, any measure to enforce it is important. The temperature issue could – leading all the way to asking for a temporary stop of the operation of the existing 4 units – be a regulator reminder of the absurdity of the new units.

The questions of climate change impacts on nuclear safety and supply security should also be brought into the **taxonomy debate**. (For those who are not up-to-date with this debate, please find some information on the Joint Project's website http://www.joint-project.org/)

It may not be necessary to bring in new arguments in the debate pro/con nuclear, but to use more simple **slogans** instead of relying mainly on complex, fact-based arguments. This is what the pro-nuclear side does. Therefore we also need simple slogans, for example on the water issue. A slogan could be that the (Hungarian) regulators are not transparent, they forge water temperature measurements.

It was mentioned that shutting down of a reactor can be applied to mitigate some of the consequences of extreme weather events (EWE) on them (on reactors). **What consequences of EWE** (or consequences of what EWE) **shutting a reactor off would not be able to mitigate**? Normally, shutdown is the option for a known strong wind event. For an unexpected flooding event, shutdown in advance is not possible. The reactor core has to be cooled also after shutdown to prevent a core-melt accident.

Is the water temperature and amount of cooling water only an issue for old NPP or also for new ones?
Cooling is a topic for all NPPs, cooling by air is less efficient than by water; there is a difference in the amount of cooling water that is needed by old plants or new ones. In technical communities, the water issue for new NPPs is not such a big debate as in NGO communities. For old NPP it is a big issue because back-fitting measure or regularly shutdowns are expensive. For new (planned) NPP, measures to decrease the water consumption could be implemented but this increases the costs. As the case of Hungary presented, several options exist to solve cooling issues of the current four reactors of Paks and the future two reactors of Paks II, but these are highly dependent on the regulations and decisions made by the authorities and the government. Recent years have shown that not only the regulatory system is full of open to interpretation rules but the lack of political will also makes it difficult to achieve substantive changes. Greater transparency of the temperature monitoring procedures and the inclusion of the civil society and experts would improve the quality of the developments and could reduce the errors experienced so far.

Outlook

In 2020-2021, the Joint Project will hold a series of webinars which will be announced on our website.

More information on the Joint Project – Nuclear Risk & Public Control: http://www.joint-project.org/

The Joint Project is supported by
Federal Ministry Republic of Austria Climate Action, Environment, Energy, Mobility, Innovation and Technology