

Kakhova dam: No immediate danger but ‘increased risk’ of nuclear catastrophe after dam blown up, Ukraine says

The worst-case scenario is that falling water levels threaten the cooling facilities at the largest nuclear power plant in Europe, leading to dangerous overheating



Aftermath of the breach at Kakhovka Dam (Photo: Twitter/AP)



By Kieron Monks

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Ukrainian officials have been warning of potentially devastating consequences if the **Kakhovka Dam** burst since last year, and accusing Russia of planning deliberate sabotage. In October, **President Volodymyr Zelensky** accused Russian forces of mining the facility despite the risk of “**catastrophe on a grand scale**”.

Russia and Ukraine blamed each other in the aftermath of the breach this morning, which caused widespread flooding in the towns of the Kherson region and could threaten water supply.

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The nightmare scenario is that falling water levels threaten the cooling facilities at Zaporizhzhia Nuclear Power Plant (ZNPP), the largest on the continent with the power to serve four million homes, increasing the risk of nuclear fuel overheating and potentially exploding.



(Image: inews)

But Ukraine’s energy authority Energoatom said that water levels at the plant were “sufficient” for its needs with monitoring ongoing.

That judgement was echoed by nuclear watchdog the International Atomic Energy Agency (IAEA), which said there “no immediate nuclear safety risk at the plant”.

But the IAEA hinted at emergency measures in a statement reporting that plant management is “making all efforts to pump as much water into its cooling channels and related systems as possible. In addition, non-essential consumers of water are being stopped at ZNPP to reduce the consumption of water”.



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resource is not damaged.

ZNPP has been occupied by Russian forces since the early days of the war, with Ukrainian scientists initially kept at their control, before the plant went into “cold shutdown” in September 2022.

The UN has previously [raised concerns about fighting](#) around the ZNPP. Ukrainian officials

recently claimed that [relocation of staff](#) from the plant could be dangerous.

Dr Jacopo Buongiorno, a professor of nuclear engineering at MIT and a member of the American Nuclear Society Rapid Response Taskforce on Ukraine, suggests that risks following the Khakovka Dam breach have been “exaggerated”.

“There is a theoretical concern that the plant could run out of water...but the scenario has been known for many months, has been studied in detail, and the folks at the site are prepared for it,” he told **i**.


“The reactor site has been shut down for more than six months. So the amount of heat that has to be dissipated is actually very low. A single fire hose would be enough to dissipate heat for the entire station – and there are multiple backup (water sources)”.

<https://twitter.com/spectatorindex/status/1666040315164385280>

Dr Buongiorno added that the plant itself is structurally sound and operated by experienced professionals, who stay in close communication with colleagues abroad.

There remains a potential risk of Russia deciding to create a nuclear emergency at the ZNPP or another of Ukraine’s power plants, Dr Buongiorno suggests, but adds that “both sides know the risks”.

Ukraine is heavily dependent on nuclear energy, which accounts for around half of its electricity needs, according to the World Nuclear Association. There are four nuclear power plants in total, including the ZNPP, with plans to add new reactors to the other three.

Ukraine was also the site of what is considered the worst ever civil nuclear disaster in history, the meltdown at the **Chernobyl plant in 1986**, which spread radiation across the country and beyond. 

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