Chornobyl @40: Rethinking nuclear safety

Forty years after the Chornobyl disaster, we know more than the world was allowed to know in 1986. Declassified Soviet archives show that the catastrophe did not begin on the night of April 26. Warning signs had been recorded years earlier. Incidents at the plant were documented. Internal reports identified serious safety deficiencies and described the facility as dangerous. These warnings were known - and ignored.

The explosion at Reactor No 4 did not occur in isolation. It happened in a system where critical risks had already been identified.

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Forty years ago, the Chornobyl disaster shattered the illusion that nuclear risk could be contained once systems fail. The explosion at Reactor No 4 did not end that night – it became a decades-long disaster. Radioactive contamination spread across more than 200,000 square kilometres of Europe, and over 300,000 people were forced from their homes, and entire areas remain uninhabitable to this day. Chornobyl was not only a technological failure. It was a systemic failure of governance, transparency, and responsibility. Forty years later, this lesson is no longer confined to history. Ukraine today relies on nuclear energy for more than half of its electricity, making it both a pillar of resilience and, in the current security environment, a point of vulnerability.

Some of these risks have re-emerged in a different form since the start of Russia's full-scale invasion of Ukraine.

It is in this context that the situation at the Zaporizhzhia Nuclear Power Plant must be understood. Europe's largest nuclear facility has been operating under the control of the armed forces of the Russian Federation for more than two years – a reality that fundamentally challenges the assumptions on which nuclear safety systems were built.

This has not been a theoretical risk. It has meant prolonged operational uncertainty, the presence of military assets on-site, and repeated disruptions to external power supply – a critical lifeline for reactor cooling. What was once considered unthinkable has become an operational reality.

The experience of Zaporizhzhia has made one thing clear: nuclear safety frameworks were designed for a different world – one in which operators remain in control, infrastructure is protected, and rules are respected. That world can no longer be taken for granted.

In such circumstances, safety is no longer determined solely by engineering standards or regulatory compliance. It becomes inseparable from the political and security environment in which a facility operates – and from the stability of that environment. This shift has been visible elsewhere as well.

In the early days of the full-scale invasion, Russian forces occupied the Chornobyl Nuclear Power Plant. Their presence in highly contaminated areas, including the Red Forest – one of the most radioactive zones on the planet – raised immediate concerns. More recently, a Shahed-type drone strike targeted the protective structures built over Reactor No 4 at the Chornobyl Nuclear Power Plant.

A system designed to safely contain radioactive material for decades was compromised in a single attack. The fact that such a strike could occur at all reveals a level of disregard for nuclear safety that goes beyond negligence – it reflects a deliberate erosion of the norms that protect us all.

Taken together, these developments point to a broader conclusion. Nuclear safety can no longer be understood solely through engineering or regulation. It is shaped as much by geopolitics, institutional resilience, and the strength of international norms as by technology itself.

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The writer is the ambassador of Ukraine to Kenya.