

Nuclear Terrorism: “Most Immediate and Extreme Threat to Global Security”

Terrorist organisations have shown a keen interest in nuclear facilities and weapons-usable nuclear material. No doubt they could manufacture nuclear explosive devices. The only hope is to prevent them from accessing fissile material.

“Try to assume for a moment”, the US Senator said to several invited representatives of weapons laboratories, “you are a relatively informed terrorist group with access to some nuclear scientists. Could you build, off-the-shelf, a nuclear device?” They came back several months later and said: “We built one”. Because the explosive information by itself did not have the desired effect among his colleagues in Congress, the senator had the bomb brought into the US Capitol. That made an impression.

The senator’s name was Joe Biden, who now is the 46th president of the United States of America. He told this anecdote, which remains little known to this day, at an expert conference in 2004.¹ Five years later, he took the oath as US Vice-President. Joe Biden’s concerns strongly influenced Barack Obama’s policies. Only three months into his first term, the new president forcefully called for a world without nuclear weapons in a speech delivered in Prague, and now considered historic: “We must ensure that terrorists never acquire a nuclear weapon. This is the most immediate and extreme threat to global security.”²

¹ Arms Control Association, et al., “The Paul C. Warnke Conference on the Past, Present & Future of Arms Control”, 28 January 2004.

² Barack Obama, “Remarks By President Barack Obama In Prague As Delivered”, 5 April 2009, see obamawhitehouse.archives.gov/the-press-office/remarks-president-barack-obama-prague-delivered.

Will, Ability, and Fissile Material

To build a nuclear explosive device, thereby making the threat real, a terrorist group would need three things: the will, the ability, and the fissile material. So far, at least three terrorist organisations have demonstrated their interest in nuclear weapons. The Japanese doomsday cult Aum Shinrikyo actively searched for blueprints and material. Al Qaida employed a sort of “nuclear affairs manager” and started to carry out tests with conventional explosives. Two members of the so-called Islamic State (IS) installed a surveillance camera in front of the apartment of the director of a Belgian nuclear research centre. When they wound up in the crosshairs of investigators, they blew themselves up in an attack on Brussels airport in March 2016.

Where there's a will, there's a way. As early as in the 1960s, two young physicists proved it possible to develop the blueprint for an operational nuclear bomb without having any access to classified information. Finally, by making a simple request to the right people, Joe Biden provided the proof that all the ingredients for a nuclear explosive device can be bought in retail stores. Hence, there is no doubt about the basic feasibility of building a bomb outside military structures.

The hope remains that terrorists will always and everywhere be kept from accessing nuclear fissile material, i.e. highly enriched uranium, or fissile plutonium. However, abundant amounts of weapons-grade uranium can today be found in research reactors of various countries, including Belgium, the country that the IS bombers targeted, Germany, France, Italy, or the Netherlands. France carries out dozens of shipments of weapons-usable plutonium every year, on public roads and over distances of thousands of kilometres.

Nuclear Power Plants: Pre-deployed Weapons for the Enemy?

But determined perpetrators, be they terrorists or adversaries in military conflicts, do not even need to build the bomb to achieve their goals of stoking fear, terror, and immeasurable suffering. There is also another option, a second, more direct nuclear option. Any civilian nuclear power plant in their crosshairs can become a weapon with the

radioactive impact of a nuclear device.³ In 1986, the destruction caused by the exploding reactor in Chernobyl was in no way comparable to the devastation wreaked by the bombs detonated in Hiroshima and Nagasaki in 1945. But Chernobyl's fallout scattered 200 times more radioactivity across the European continent than both bombs combined spread over Japan. This contamination caused the areas surrounding the stricken reactor to become uninhabitable and resulted in the radioactive contamination of a continent that lingers to this day. Since the first days of the full-scale Russian invasion of Ukraine in February 2022, and all-the-more since the beginning of the unprecedented military occupation of the Zaporizhzhia nuclear power plant, a Damocles sword hangs over Europe. Extensive fighting has taken place in the immediate vicinity of the plant and several direct hits have been reported. (See Factsheet "Nuclear Power and War").

Nuclear Facilities Have Been Targets in the Past

A US-American database lists 80 military or terrorist attacks on nuclear facilities in the period from 1961 to 2014.⁴ Since then, numerous unidentified drones have been flown over nuclear facilities in France and the US. In 2014, an insider sabotage-act at a Belgian nuclear power plant destroyed a turbine. The culprit or culprits have never been identified. The number of suspects was merely reduced to 30 of the plant's employees. No arrest was ever made. Early 2022, the Federal Prosecutor's Office terminated the investigation.

On several occasions, the environmental organisation Greenpeace demonstrated that the security systems at French nuclear power plants can also be outwitted from outside. In Cattenom, they boldly set off fireworks directly next to the unprotected storage pool for highly radioactive spent fuel.

A "successful" attack on a nuclear power plant in densely populated Europe could have radiological and economic consequences far beyond those experienced after Chernobyl or

³ Bennett Ramberg, "Nuclear Power Plants As Weapons For the Enemy: An Unrecognized Military Peril", 1985, see foreignaffairs.com/reviews/capsule-review/1985-06-01/nuclear-power-plants-weapons-enemy-unrecognized-military-peril, accessed on 24 November 2020.

⁴ START, "Nuclear Facility Attack Database (NuFad)", see start.umd.edu/data-tools/nuclearfacility-attack-database, accessed on 24 November 2020.

Fukushima. So far, no terrorist or military attacks on wind turbines or solar panels have been reported.

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