

BUSINESSSAFE

BusinessSafe is designed to aid businesses in protecting the safety and well-being of Florida's residents and visitors from threats. BusinessSafe provides private sector partners with open source information, analysis and resources to help protect their businesses and communities.

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BusinessSafe Highlight: Nuclear Reactors, Materials, and Waste Sector

Criminal Activity

The nuclear reactors, materials, and waste sector includes nuclear reactors, nuclear materials used in a variety of industries, and nuclear waste. The nuclear sector generates nearly 20% of the US's energy, produces medical materials which assist with diagnostics and treatments, assists with academic research, and more. The dependence on the nuclear sector as well as the materials used in its operation make the nuclear sector open to multiple potential vulnerabilities.

1. **Cyberattacks** – Nuclear facilities rely on both digital and analog systems to assist with processes and operations. Many nuclear facilities have implemented cybersecurity measures to limit network vulnerabilities and protect against intrusions, including ensuring certain critical functions are not connected to the internet. While these efforts lessen the potential impact of a cyber incident, cyberattacks can still occur. This could include, industrial sabotage, malware deployment, hacking, and ransomware.

[Major Cyberattack Breached Government Agency in Charge of Nuclear Weapons Stockpile](#)

[How Well Is the Nuclear Industry Protected from Cyber Threats?](#)

2. **Theft** – Nuclear materials and products are highly regulated and difficult to obtain outside of approved channels. Bad actors are willing to pay high prices for nuclear products, technology, and expertise on the obtained through theft or illegal means. The US has extensive protections in place to limit access to the nuclear supply chain and to protect nuclear materials and supplies, but some vulnerabilities remain.

[Pakistan's Nuclear Black-Market Nailed in US Indictment of 5 Men
Small Amount of Nuclear Material Stolen](#)

3. **Terrorism and Targeted Violence** – Malicious actors may seek to use nuclear materials to build explosive devices or to commit catastrophic acts by attacking nuclear facilities. While the US has some of the most secure nuclear facilities in the world, an incident or breach involving any of the nearly 440 nuclear power plants in the world could have a disastrous effect. In an effort to prevent this, nuclear facilities are heavily secure and regulated around the world by governments and international organizations.

[Belgium Fears Nuclear Plants Are Vulnerable](#)



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Other Threats and Hazards

The nuclear reactors, materials, and waste sector is resilient and one of the most regulated sectors in the US despite the hazards it faces. This sector is also vulnerable to natural disasters and hazards including hurricanes, tornadoes, climate change, drought, and aging infrastructure as well as logistical and supply issues.

1. **Environmental** – While nuclear reactors in the US are designed and regularly tested for their resilience to withstand beyond-basic-design events, the unpredictability of environmental disasters creates the potential for incidents to occur.
[Texas Power Plants Failed Because They Aren't Dressed for Winter](#)
[Fukushima: Powerful Earthquake Rocks Japan Weeks from Disaster Anniversary](#)
2. **Logistical Issues** – Aging parts and infrastructure increase the risk for technical errors that can lead to operation malfunctions, if they are not regularly maintained and modernized US nuclear facility operators are heavily reliant on material suppliers from outside the US to power operations. Disruptions to the materials supply chain could have damaging consequences to nuclear operations.
[Combating Corrosion in the World's Aging Nuclear Reactors](#)
[What's the Lifespan for a Nuclear Reactor?](#)

Resources

The Cybersecurity and Infrastructure Security Agency (CISA) provides a sector-specific plan for the industry that elaborates on policies and resources relating to the nuclear sector.

[2015 Nuclear Sector-Specific Plan](#)

The Department of Homeland Security (DHS) has an archived page on Nuclear Security that provides resources on standards that businesses can implement relating to the nuclear sector.

[Nuclear Security | Homeland Security](#)

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