Nuclear Security and a Blackout

A European-wide power and infrastructure breakdown ("Blackout") is hardly imaginable for many people, including most decision makers. Nevertheless, the warning signs were never as concrete as in recent months. The system instabilities have been increasing rapidly for years. And even the Association of European Transmission System Operators ENTSO-E stated in the investigation report on the Blackout in Turkey in 2015: "Although the electric supply should never be interrupted, there is, unfortunately, no collapse-free power system!"

While most regions in the world have had corresponding experience of how to deal with such major disturbances, Europe has not had this experience due to its excellent security of supply. Therefore it is also difficult to predict how long it will take until power can be restored. In such instances, these assessments last from several hours to several days. The knock-on effect would be devastating for our inverse infrastructure and society, so highly dependent on the power supply, because we do not expect and are not prepared for it.

Also for nuclear safety and security such an event will have a significant impact, since nuclear power plants are dependent on the power supply. Of course there are appropriate fallback arrangements and emergency generators. However, a multi-day emergency operation has rarely been well tested. In addition, emergency devices are susceptible to interference. Quite apart from the fact that no fuel supply will be possible, or the rotation of staff will not be easy.

For this crisis situation, few contingency plans exist which would have to work also "offline", given that telecommunication systems would also collapse soon because of the power outage.

The question for the nuclear-security community is: how far is this possible scenario on the radar of the system operators, and what precautions have been taken and exercised to safely handle even a multi-day power and infrastructure breakdown.

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Herbert Saurugg has been a career officer in the Cyber Defence Section of the Austrian Armed Forces until 2012. Since then he has been on leave and is engaged in raising awareness about the increasing systemic risks due to the rising interconnections and dependencies between many Critical Infrastructures, which is contributing to extreme events. He is known as an expert on the topic of blackout - a Europe-wide power and infrastructure breakdown, where he has initiated a civil society initiative to raise awareness and preparation among all stakeholders throughout Austrian society. He is also a founding member of the association Cyber Security Austria which is the master mind behind the European Cyber Security Challenge. As a result of his systemic reflections he is claiming for more efforts to raise awareness and resilience throughout our societies to face major extreme events in the foreseeable future. He is running a blog under www.saurugg.net