International Best Practices Workshop on the Role of Advanced Technologies in Effective Cybersecurity at Nuclear Facilities

03–05 February 2026 | Vienna, Austria

Day 1: Cybersecurity Fundamentals and the Role of Technologies

09:00 – 10:30 **Opening Session**

Welcome and introductory remarks

Workshop objectives and agenda

Keynote on cybersecurity challenges in the nuclear sector and the role of advanced technologies in mitigating them

10:30 – 10:45 Coffee Break

10:45 – 12:30 **Session 1: Understanding how technologies are enhancing adversary capabilities**

Key issues:

- What is the current state of adversarial use of artificial intelligence (AI) and other advanced technologies?
- How are cyber threats evolving in the operational technology (OT) environment of nuclear facilities?
- What are the most common attack vectors targeting control systems today?
- How can the nuclear sector improve threat intelligence sharing among operators, regulators, and states?

Case study on adversarial use of advanced technologies

Presentation on evolving cyber threats in the nuclear sector

Discussion on how emerging technologies bring new attack surfaces and other opportunities to threat actors

12:30 – 13:30 Lunch

13:30 – 15:00 **Session 2: Advanced technology overview – transformational technologies that will shape the future of cybersecurity**

Key issues:

- How can advanced technologies enhance anomaly detection and predictive cybersecurity in nuclear systems? To what extent can automation improve incident detection and response without reducing human oversight?
- What are the main limitations and risks of applying advanced and emerging technologies in critical infrastructure environments?
- How can we ensure trust, transparency, and explainability in technology-driven cybersecurity decisions?
- How can advanced technologies be effectively integrated with legacy systems in nuclear facilities?

Presentation on AI and other advanced technologies in support of cybersecurity

Presentation on a nuclear operator experience integrating advanced technologies in its cybersecurity arrangements

Discussion on benefits and limitations in nuclear settings

15:00 – 15:30 Coffee Break

15:30 – 17:00 **Breakout Groups**: Cybersecurity at nuclear facilities - Sharing of current practices and identifying remaining gaps

- How mature are current cybersecurity frameworks across participating organizations?
- What are the biggest capability gaps identified by operators and regulators?
- Are technologies the answer to our challenges?

17:00 – 17:30 Day 1 wrap-up: Key takeaways

17:30 – 19:00 Workshop Reception

Day 2: Applied Technologies and Case Studies

09:00 – 09:15 Review of Day 1 and Introduction of Day 2

09:15 – 10:30 **Session 3: Advanced cybersecurity strategies and defensive architectures relevant to nuclear environments**

Key issues:

- What are Zero Trust, SOAR, XDR?
- How can Zero Trust principles be realistically applied to air-gapped or segmented nuclear environments?
- What are the benefits and challenges of deploying SOAR and XDR tools in nuclear security operations?

Presentations by technology vendors

Discussion on how the nuclear sector could incentivize greater transparency and accountability from technology vendors and strengthen supply chain cybersecurity

10:30 – 11:00 Coffee Break

11:30 – 12:30 **Case Studies:** Technology integration at nuclear and other sensitive facilities

12:30 – 13:30 Lunch

13:30 – 15:00 **Panel Discussion** on lessons learned from recent technology integration efforts in nuclear or other critical sectors

- How do you balance modernization with security assurance during system upgrades?
- What interoperability issues arise when integrating modern architectures with legacy control systems?
- How can technologies enhance detection and response without over-automation risks?
- What role do digital twins and simulations play in testing cyber defenses?

15:00 – 15:30 Coffee Break

15:30 – 17:00 **Breakout Session** to discuss best practices for identifying and adopting a new technology

- How do you scan the market? How do you evaluate technical and operational compatibility?
- How do you ensure that a technology meets organizational and regulatory expectations?
- How do you select and contract a vendor? How do you roll out a new technology safely and effectively?

17:00 – 17:30 Day 2 Wrap-up: Key takeaways

17:30 – 19:30 **Vendor Session**: Technology demonstrations and one-to-one discussions with vendors

Day 3: Strategic Planning and Future Outlook

09:00 – 10:30 **Session 4: Cyber resiliency against current and future threats**

Key issues:

- What is the role of regulations and standards in technology selection and implementation?
- How can strengthened collaboration between regulators, operators, and vendors improve technology implementation?
- What measurable indicators can be used to track cybersecurity maturity? How do you measure the return on investment of a new technology?

Introduction to relevant cyber security standards

Presentation to share a regulatory experience

Discussion on assessing the performance of a cyber security programme and ensuring its continuous improvement

10:30 – 11:00 Coffee Break

11:00 – 12:30 **Session 5: Advanced technologies and the impact on workforce**

Key issues:

- How do advanced technologies reshape cybersecurity skills and roles?
- How can nuclear organizations provide timely training for evolving technologies?
- How can academic and training institutions support nuclear cybersecurity capacity building?

Presentation on identifying required skills and competencies for effectively adopting advanced technologies

Presentation on a nuclear operator experience building capacity and proper technology understanding

Discussion on measures to be taken to promote diversity in cybersecurity functions and to foster a cross-disciplinary collaboration between engineers and cybersecurity professionals

12:30 – 13:30 Lunch

13:30 – 15:00 **Session 6: Action Planning & Commitments**

Key issues:

- What specific actions can participants commit to following the workshop?
- How can participants ensure lessons from this workshop translate into operational improvements?
- What opportunities exist for follow-up projects, joint research, or funding?

Break-out groups to Identify next steps for implementation

Online polling to gather commitments and feedback

15:00 – 16:00 **Closing Session**

Takeaways and commitments identified across all sessions

Final remarks and closing

16:00 **Workshop end**