Computer and Information Security

Why is this important?

Reports of actual or attempted cyber-attacks are now virtually a daily occurrence. The nuclear industry has not been immune. There have been cases of random malware-based attacks at nuclear power plants, and of such facilities being specifically targeted.

The computer systems and networks supporting nuclear regimes include many non-standard information technology systems in terms of architecture, configuration or performance requirements. These systems can include specialized industrial control systems, access control systems, alarm and tracking systems, and information systems pertaining to nuclear safety and security and emergency response. Within this setting, the methods and paths for cyberattacks against nuclear and radiological facilities are multidimensional and continue to grow. Computer security is concerned with the protection of digital data and defending of systems and networks against malicious acts.

Staff responsible for nuclear security should know how to repel cyberattacks and limit the damage if systems are actually penetrated. The IAEA is doing what it can to help governments, organizations and individuals adapt to evolving technology-driven threats from skilled cyber-adversaries.

What do I need to know?

Computers play an essential role in all aspects of the management and safe and secure operation of nuclear facilities. Likewise computer-based information systems support competent authorities in the regulation and oversight of such facilities. It is vitally important that all such systems are properly secured against malicious computer-based actions. IAEA staff responsible for nuclear security should have an awareness of cyber threats, the potential consequence of a cyberattack, and security controls that are needed to guard against such attacks.

The multidimensional nature of an attack and the potential consequences for nuclear facility damage, nuclear security information loss and nuclear/radioactive material loss make the development of a robust computer and information security programme an essential component of an overall nuclear security plan.

The IAEA provides expertise and guidance at all stages for computer and information security programme development, including guidance and training to assist Member States in developing a comprehensive computer and information security programme. This includes, training inspectors or providing experts to conduct computer security assessments at nuclear facilities, and providing planning expertise in conducting computer security exercises as part of the nuclear security programme. The focus of these activities centres on computer and information security issues related to the protection of assets within nuclear/radiological facilities.

What actions are recommended?

Member States desiring capacity building services should send a request to the IAEA Division of Nuclear Security.

Member States should consult with the IAEA to develop an Integrated Nuclear Security Support Plan (INSSP) for building a sustainable nuclear security framework.

Member States should consult with the IAEA to assist in determining which capacity building services are available and recommended.
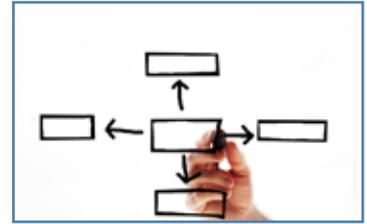
For a list of IAEA computer security training courses and workshops, check the current online IAEA Meeting Schedule.

Who should request this service?

This programme is intended for organizations with an interest in developing and strengthening computer and information security at nuclear/radiological facilities; this includes regulatory bodies and operating organizations.

Who conducts this service?

The capacity building team comprises senior international experts together with IAEA senior security officers. Training is based upon IAEA nuclear security requirements and implementing guides as well as good practices and lessons learned.

What is the duration of the average capacity building workshop or training exercise?

Workshops and training courses normally range from a few days to one-week sessions. The IAEA also offers self-paced e-learning classes through its Learning Management System portal.

Resources

IAEA Meeting Schedule http://www-pub.iaea.org/mtcd/meetings/PDFplus/current.pdf

Security of Nuclear Information (IAEA Nuclear Security Series No. 23-G)
http://www-pub.iaea.org/MTCD/Publications/PDF/Pub1677web-32045715.pdf

IAEA Learning Management System portal. elearning.iaea.org/m2/

Email: NuclearSecurity@iaea.org
Visit: the IAEA Nuclear Security Information Portal (NUSEC) at https://nusec.iaea.org

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