

Nuclear security of nuclear fuel cycle facilities: mains threats and scenarios approach.

Under the topic for technical session appendix:

“Nuclear security of nuclear fuel cycle facilities: emerging technologies and associated challenges and complex threats.”

One of the objectives pursued within the regulatory function is to ensure that nuclear materials are used only for peaceful purposes and prevent and deter unauthorized access to such materials that could cause hazardous situations or harm.

The Nuclear Regulatory Authority is the Argentine national body in charge of the regulatory affairs regarding radiological and nuclear safety, physical protection and security, safeguards and non-proliferation issues, and, in addition, its mission is to advise different State Branches in matters of its competence.

The aforementioned objective related to security is in charge of the Control of Safeguards and Physical Protection Division, and they fall within the Argentine Regulatory framework, under the regulations AR 10.13.1 and AR 10.13.2.

Regarding the nuclear industry and its facilities, the nuclear fuel cycle comprises several stages, which involve numerous industrial processes of varying complexity. Each of those stages face a variety of threats depending on which is its relative position in the nuclear fuel cycle.

While it is true that all nuclear facilities are designed to comply with strict standards of nuclear safety and security in order to protect the public and the environment against consequences of a nuclear accident or specifically malicious acts, it is important to consider that not all facilities have the same vulnerabilities or attractiveness, from the nuclear security perspective. Definition of threats associated to a nuclear facility devoted to energy production, as a nuclear power plant, could be significantly different to those threats definitions connected to a uranium enrichment facility, for example.

The aim of this paper is to discuss about the main threats faced by each of these stages and the main measures referred to physical protection and nuclear security. The way in which these measures should be implemented in order to prevent and mitigate possible theft and sabotage scenarios that facilities could face, focusing on the need to design adequate security systems according the activity carried out and taking into account defense in deep and gradual approach concepts.

Besides regulations and requirements, an important aspect in the success of physical protection measures, is the organizational commitment, which required a coordinated approach amongst security managers, operators, and regulators, in order to ensure an effective implementation and fulfill the regulatory requirements for which the system was designed. A short discussion about this subject will be also included in this work.

Gender

Female

State

Argentina

Primary author: Ms GORDILLO, Mariana Elizabeth (Autoridad Regulatoria Nuclear)

Co-author: Mr BOTIGLIERI, Eduardo (Autoridad Regulatoria Nuclear)

Presenters: Ms GORDILLO, Mariana Elizabeth (Autoridad Regulatoria Nuclear); Mr BOTIGLIERI, Eduardo (Autoridad Regulatoria Nuclear)

Track Classification: PP: Nuclear security of nuclear fuel cycle facilities: emerging technologies and associated challenges and complex threats