

AKE 11: Nuclear Energy and Security (Joint Session AKE-AGA)

Zeit: Mittwoch 16:45–18:15

Raum: S Aula

Hauptvortrag AKE 11.1 Mi 16:45 S Aula
Nuclear Power and Nuclear Safety Post Fukushima —
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On March 11, 2011, the second "major accident" in a civilian nuclear power plant after Chernobyl took place in Fukushima Dai-ichi. A major earthquake and resulting tsunami lead to a core melt in three reactors and the following relocation of more than 100.000 residents. But still, worldwide there are 450 nuclear reactors operational today. Safety checks like the EU-Stresstest took place after Fukushima and possibilities for optimization have been identified basically everywhere. Fukushima emphasized the importance of taking natural events more thoroughly into account and led to the implementation of additional safety equipment. But still, events from internal and external causes continue to happen frequently. In addition to these "conventional" safety problems, also other threats gain in importance. Besides the danger of terrorist attacks on nuclear facilities, also the deterioration of the institutional environment due to a military or economic crisis has to be taken into account. Thus, nuclear power remains to be a technology with the inherent potential for catastrophic accidents.

Hauptvortrag AKE 11.2 Mi 17:15 S Aula
Safeguards and Non-Proliferation experience from an IAEA perspective — •TARIQ RAUF — formerly IAEA, Head Verification and Security Policy, Vienna

The International Atomic Energy Agency (IAEA) has been implementing nuclear safeguards for more than half a century covering peaceful

nuclear activities. IAEA safeguards are implemented in States pursuant to legal authority from the IAEA Statute and bilateral, regional and international nuclear non-proliferation treaties and agreements; and are set of technical measures that allow the IAEA to independently verify a State's legal commitment not to divert nuclear material from peaceful nuclear activities to nuclear weapons or other nuclear explosive devices. In 1991, the IAEA safeguards system suffered a massive shock when it was discovered that Iraq was running an heretofore undetected parallel undeclared nuclear (weapon acquisition) programme. As a result, the IAEA safeguards system was strengthened based on a combination of expanded information and technical measures through the Additional Protocol (to safeguards agreements). Further challenges to the IAEA safeguards system came during 1992 through 2015, from the DPRK, Iran, Libya, South Korea and Syria. This presentation describes the structure and technical elements of safeguards, including implementation in high-priority cases.

Hauptvortrag AKE 11.3 Mi 17:45 S Aula
Civil Nuclear Power - The Cyber Security Perspective —
 •GUIDO GLUSCHKE — Institute for Security and Safety at the Brandenburg University of Applied Sciences, Potsdam, Germany

The talk will discuss the situation at nuclear facilities in the digital age. It will elaborate on the cyber-related challenges of the safety and security domains. Furthermore, the talk will introduce the concept of design basis threat which represents the IAEA methodology for risk treatment in terms of physical protection and will have a look how cyber fits into this model. Finally, some international initiatives on cyber security will be presented.