

National Progress Report: Czech Republic

March 31, 2016

Since the 2014 Nuclear Security Summit, Czech Republic has strengthened nuclear security implementation and built up the global nuclear security architecture by...

...Strengthening Nuclear and Other Radioactive Material Security

- The Czech Republic has in place highly developed systems of tracking, accounting for and control of high activity sources and nuclear materials.
- The Czech Republic is a signatory of the International Convention on the Suppression of Acts of Nuclear Terrorism, the Global Initiative to Combat Nuclear Terrorism, the Code of Conduct on the Safety and Security of Radioactive Sources and it also follows the Guidance on the Import and Export of Radioactive Sources.
- In this regard the Czech Republic pays attention especially to the management of high activity sources at the end of their life-cycle.
- Regulatory body of the Czech Republic in 2014 and 2015 has been involved in preparation of the new Atomic Act and also in a Regulation on physical protection of nuclear material and nuclear facilities which would cover the current nuclear security objectives based on the following documents: Nuclear Security Series (NSS) No. 20: Objective and Essential Elements of a States' Nuclear Security Regime (2013), recommendation NSS No. 13: Nuclear Security Recommendation on Physical Protection of Nuclear Material and Nuclear Facilities (2011) and Implementing Guides NSS No. 7: Nuclear Security Culture, NSS No. 8: Preventive and Protective Measures against Insider Threat, NSS No. 10: Development, Use and Maintenance of the Design Basis Threat, Technical Guidance NSS, No. 16: Identification of Vital Areas at Nuclear Facilities (2012) and NSS No. 17: Computer Security at Nuclear Facilities (2011). The new regulation will be covering in greater detail especially the new aspects of nuclear security, such as: vital area identification, trustworthiness check by National Security Agency, computer security at NPPs and air-born threat. Since 2012, the Czech Republic has participated in the newly established IAEA Nuclear Security Guidance Committee responsible for publishing Nuclear Security Series.
- The State Office for Nuclear Safety has been drafting for several years a new Atomic Act, which is now in the process of approval in the Chamber of Deputies of the Parliament of the Czech Republic. This new Act represents a complete and thorough overhaul of the Czech nuclear legislation and will address all contemporary nuclear topics and issues with special

regard to nuclear security, nuclear non-proliferation and physical protection of nuclear materials.

- During 2014, a permanent working group composed of representatives of central governmental authorities (Ministry of Trade and Industry, Ministry of Interior, Ministry of Defence, Presidium of the Police, Security Information Service, State Office for Nuclear Safety and Czech Power Company ČEZ) focused its efforts on developing and maintenance of the Design Basis Threat. As a result, the new DBT for Czech nuclear facilities and nuclear material led to re-evaluating of nuclear material transports in February 2015, now covering also airborne threats as well as cyber threats to computer based systems used for nuclear safety, nuclear security and nuclear material accountancy and control.
- In 2014, a complex research by the operator of both Czech NPPs - Dukovany and Temelin has been carried out. It covers intentional use of three types of aircrafts (business jet, fighter and transport plane) to perform air crash to object located at nuclear power plant site. Results of the study shows the vulnerability of the different objects towards the attack and what can be done to protect the object and to minimize the consequences of such attack.
- In 2014, there was a security exercise carried out at the NPP Dukovany. This exercise was aimed at verification of protocols and mechanisms for guarding of the outside perimeter of the NPP. It included cooperation and coordination of the Operator with the Czech Army and response units of the Police. The same exercise was conducted in 2015 at the second Czech NPP Temelin.
- *The Czech Republic participates in the GB on Strengthening Nuclear Security Implementation.*
- *The Czech Republic participates in the GB on Transport Security.*
- *The Czech Republic participates in the GB on Security of Radioactive Sources (HARS).*
- *The Czech Republic participates in the GB on The Czech Republic participates in the GB on Insider Threat Mitigation.*
- *The Czech Republic participates in the GB on Supporting Nuclear and Radiological Terrorism Preparedness and Response Capabilities.*

...Minimizing Nuclear and other Radioactive Materials

- The Czech Republic as a partner of the United States in the Global Threat Reduction Initiative finished the removal of all its highly enriched Uranium and became effectively a HEU-free country. The final shipment of 68kg of HEU from the Nuclear Research Institute in Řež to

Russia was completed at the turn of March 2013. Two previous shipments of fresh HEU from the Řež research reactor back to Russia were completed in 2004 and 2010 with weights of 6kg and 12kg respectively. Also a shipment of 80kg of spent HEU fuel from the Řež reactor was completed in 2007 and another transport of 14kg of fresh HEU from the training reactor at the Faculty of Nuclear Sciences and Physical Engineering of the Czech Technical University in Prague was completed in 2005. Another key component of this project was the conversion of the Czech research reactors from the use of nuclear weapons-usable HEU fuel to LEU fuel. This conversion was conducted in last years and both research reactors and the training reactor are now fully converted and operating with LEU fuel.

- The Czech Republic continues to provide technical support to countries repatriating the HEU stocks. Such assistance was provided to Belarus, Bulgaria, Hungary, Poland, Serbia, Ukraine and Vietnam.
- *The Czech Republic is a signatory of the statement on Minimizing and Eliminating the Use of highly Enriched Uranium in Civilian Applications.*

...Countering Nuclear Smuggling

- Security of Nuclear Materials in the Czech Republic goes above and beyond all IAEA's relevant nuclear security recommendations.
- The Czech Republic is also a member of the Incident and Trafficking Database operated by the IAEA.
- There are also several laboratories in the Czech Republic with a very high nuclear forensics capability, which are used for acquiring of analytical evidence for prosecution of cases where illicit trafficking, smuggling or unlicensed handling of nuclear materials is involved.
- The Czech Republic has a long standing partnership with Armenia focused on raising security and safety levels of the Metsamor NPP through implementation of ageing management systems and protocols and introduction of corrosion-erosion analysis for all main components.
- The Czech Republic also has in place an interagency cooperation mechanism, which integrates e.g. the Customs Administration, Police and State Office for Nuclear Safety and is focused on detection and capture of nuclear materials outside the scope of regulatory control.
- *The Czech Republic participates in the GB on Counter Nuclear Smuggling.*
- *The Czech Republic participates in the GB on Forensics in Nuclear Security.*
- *The Czech Republic participates in the GB on Statement on Nuclear Detection Architectures.*

...Supporting Multilateral Instruments

- The Czech Republic is a signatory of the International Convention on the Suppression of Acts of Nuclear Terrorism, the Global Initiative to Combat Nuclear Terrorism, the Code of Conduct on the Safety and Security of Radioactive Sources and it also follows the Guidance on the Import and Export of Radioactive Sources.
- In 2014, the Czech Republic continued cooperation with Global Threat Reduction Initiative (GTRI). Physical protection of some facilities with high-risk radioactive sources was improved within the framework of the GTRI Project.
- Physical Protection and Security Management Course was organised in cooperation with the GTRI and held in Prague in April 2014. The purpose of the course was to create a standardized basis for development and implementation of regulatory programmes, assessments and inspection planning, as well as an operator implementation and compliance program.
- *The Czech Republic participates in the GB on Nuclear Security Training & Support Centers/Centers of Excellence (NSSC/CoE).*
- *The Czech Republic supports the Joint Statement on the Low Enriched Uranium Bank in Kazakhstan.*
- *The Czech Republic participates in the GB on the UNSC Resolution 1540*

...Collaborating with International Organizations

- At the request of the Government of the Czech Republic, an Integrated Regulatory Review Service (IRRS) mission was carried out in 2013. The purpose of the peer review was to review the Czech regulatory framework for nuclear and radiation safety. As recommended by the IAEA Nuclear Safety Action Plan, the review compared the Czech regulatory framework for safety against IAEA safety standards as the international benchmark for safety. The IRRS mission confirmed that the Czech regulatory system for nuclear and radiation safety is robust and the State Office for Nuclear Safety, which is the national regulatory authority, is an effective and independent regulatory authority.
- The Czech Republic proudly contributes to the strengthening of safeguards and IAEA's capacities through the Member States Support Programme (MSSP), which is an ongoing IAEA's developmental programme focusing on R&D, testing of new equipment, training of personnel and general assistance based on budgetary needs of the IAEA.

- Under this programme the Czech Republic hosts on an annual basis, for over a decade, among other projects, the Comprehensive Inspection Exercise at Light Water Reactors (LWRs) which is dedicated to final examination of IAEA's inspector-candidates. In 2015 the demand for this exercise was such that two runs had to be organized, each of which was attended by 9 students and 3 instructors. The Czech Republic also hosts a Nuclear Materials Accounting in Action course, which was attended by 12 participants last year. But the most sought after course is the Technical visit to Uranium Mines which was attended last year by 21 Agency employees.
- In total over 350 IAEA employees completed these three courses. Over 80 inspector-candidates have passed the Comprehensive Inspection Exercise at LWRs, almost 200 participants took part in the Technical visit to Uranium Mines and the Nuclear Materials Accounting in Action course was completed by approx. 90 participants.
- The Czech Republic also actively participated in preparation of the Familiarization Workshop for Safeguards Practitioners on the "Safeguards Implementation Practices Guide on Establishing and Maintaining State Safeguards Infrastructure" which was held in IAEA in February 2016. This project was preceded by preparation of four guidebooks focusing on different aspects of safeguards, particularly on nuclear materials verification activities, collaboration and provision of information and establishing regulatory infrastructure. The Czech Republic took part in drafting of all of these guides since the beginning of this project in 2012.
- Outside the Czech MSSP, a workshop was organized by the State Office for Nuclear Safety and the IAEA for approx. 50 participants. It focused on synergy of nuclear safety and nuclear security, including practical implementation of new provision of Information Circulars (INFCIRC) 225/Rev. 5. Participants of this workshop represented utility as well as governmental authorities.
- Since 2014, the Czech Republic also hosted or participated in several seminars and training courses organized in cooperation with the IAEA. These courses usually had attendance of 20 to 25 participants from developing countries and were mostly funded by hosting organizations:
 1. „Sustainable Energy Development“ organized by the Czech Technical University
 2. “9th EERRI Research Reactor Group Fellowship Training Programme“ organized by the Czech Technical University, Department of Nuclear Reactors

3. „Advanced Digital I&C Modernization and Implementation Strategy“ organized by a company I&C Energo Ltd.

4. „Strengthening Member State's National Systems for Safety in Medical Exposure in Line with the Revised International Basic Safety Standards“, organized by the National Radiation Protection Institute.

- The Czech Republic also hosted a series of internships and short-term scientific fellowships for specialists from Armenia, Pakistan, Brazil, Tanzania, Monte Negro, China, Algeria, Nigeria, Argentina, Morocco, Jordan, Egypt, Syria, Slovakia, Kazakhstan and Uzbekistan.
- Two experts from the Czech Republic also attended an IAEA training course for new International Physical Protection Advisory Service (IPPAS) staff in Vienna in December 2014. One participant is from the Czech Regulatory Authority while the other one was from the Czech NPP Operator.
- Participation of Czech expert in IAEA IPPAS mission in Australia.