

Action at sea: transport security exercise conducted off the coast of Sweden

As in an action movie, ships, helicopters and uniformed people set the scene off the coast of Sweden on 6 May 2015 when national authorities conducted an exercise on security while transporting spent nuclear fuel.

The exercise was part of a joint project with the IAEA to test and evaluate a new IAEA guide on planning, conducting and evaluating transport security exercises. The test subject and model was the security framework of Sweden's national nuclear transport system, which regularly ships used fuel from power plants along the coast to the country's interim storage facility for spent nuclear fuel.

"In addition to supporting the IAEA in the development of the exercise guide, the field exercise provided an excellent opportunity for training in a realistic situation not only for the regulatory authority, the coastguard and the police counterterrorist unit, but also for the company responsible for transport operations," said Tommy Nielsen, the Exercise Director from the Swedish Radiation Safety Authority. "This exercise was also a chance for Sweden to further improve its national transport security system."

The IAEA reviewed Sweden's nuclear transport security system in 2011 and provided advice on implementing international standards and IAEA guidance on the physical protection of nuclear and other radioactive material and associated facilities, including good practices, recommendations for improvement and follow-up activities. Sweden subsequently became closely involved with the IAEA in the development of the exercise guide.

A scenario at sea

The field exercise was a full-scale, comprehensive scenario involving national authorities overseeing the M/S Sigrid, a purpose-built vessel carrying a shipment of fake spent



A helicopter helped to regain control of the vessel during the field exercise.
(Photo: Swedish Police)

nuclear fuel from the Forsmark nuclear power plant. The scenario unfolded as the vessel headed south to an interim storage facility and was intercepted by an unidentified armed group, which took control of the vessel and forced the crew to comply with their instructions.

The authorities jumped into action. Relying on their prepared plans and extensive training, personnel from the Swedish Radiation Safety Authority, the national police force, the coastguard and the Swedish Nuclear Fuel and Waste Management Company worked together to regain control of the vessel. Their plans were carefully designed on the basis of national regulations and training, as well as IAEA nuclear transport security guidelines and preparatory exercises. The transport security strategy also relied on results from a tabletop, discussion-based exercise involving around 100 participants and observers held in February 2015 as part of the exercise preparations.

With close coordination and quick thinking, the authorities successfully overcame the attacking group and recovered control of the vessel.

"To be able to exercise under realistic conditions is of critical importance for my personnel," said Göran Kessell, Superintendent of the Swedish police. "The cooperation with the coastguard and the support from other stakeholders was key for us to plan our operation and to successfully regain control of the vessel on the open sea."

Throughout the day, real-time progress updates from the field were sent to observers from the IAEA and 15 countries who gathered in a nearby facility onshore to follow and discuss the exercise. The more than 40 international participants had a chance to learn about these types of exercises, to see the resources involved, and to hear first-hand accounts of the exercise and its preparation.

"Events such as this exercise help raise security standards across States and

contribute towards a consistent, safe and secure approach to the transport of nuclear material. We welcome the chance to learn and share good practices in an international forum. The United Kingdom is grateful to Sweden and the IAEA for the opportunity to observe the exercise,” said Steve Skelton, Principal Inspector of the United Kingdom Office for Nuclear Regulation.

A timely and handy exercise guide

Results from the pilot exercise, which was held from 5 to 7 May 2015, will

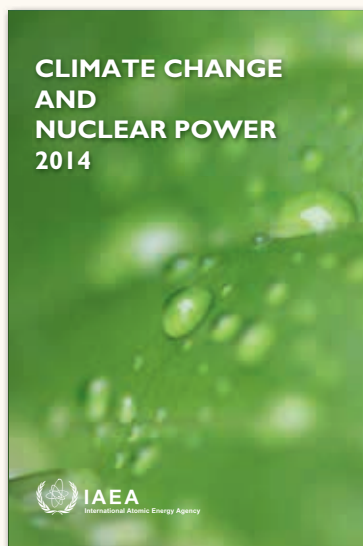
be used to improve the IAEA guide, complementing the results of the tabletop exercise and the input from experts from several Member States and other partner organizations. The guide will provide comprehensive information to help States to properly test, validate and implement their national nuclear transport security plans and arrangements, including interagency coordination, in line with international instruments and IAEA guidance.

“The transport security exercise guide will be an important tool for the IAEA to assist States, upon request, in the

practical implementation of IAEA transport security recommendations and guidance,” said Khammar Mrabit, Director of the IAEA’s Division of Nuclear Security. “Tabletop exercises and field exercises should be utilized to test and validate transport security plans. No plan is better than the one that is exercised and tested. The Agency is ready to continue assisting States in this regard.”

— *By Stig Isaksson and Nicole Jawerth*

Publications alert



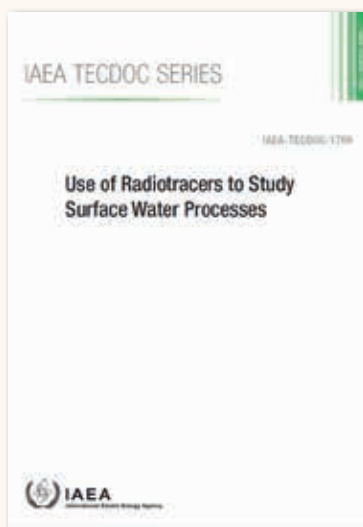
The 2014 Climate Change and Nuclear Power

report provides a comprehensive examination and analysis of the role of nuclear power in mitigating global climate change and how it contributes to meeting other developmental and environmental challenges. It discusses the environmental benefits of using nuclear energy to help reduce local and regional air pollution, and considers climate change adaptation measures, such as seawater desalination or hedging against hydropower fluctuations.

The report also examines broader issues, such as cost, safety, waste management and recent technology developments. In addition it presents the 2014 nuclear power projections of the IAEA and explores emerging issues that will affect the relationship between climate change and nuclear power in the coming decades.

The 2015 edition will be published in the last quarter of this year.

www-pub.iaea.org/books/IAEABooks/10771/Climate-Change-and-Nuclear-Power-2014



Use of Radiotracers to Study Surface Water Processes

is a key reference for all those concerned directly or indirectly with surface water processes. It provides a knowledge base for conducting radiotracer studies in marine environments. Radioactive tracers, or radiotracers, are chemical compounds in which one or more atoms have been replaced by a radioisotope. They can be extremely useful in studying natural and anthropogenic processes, such as climate change, that modify water flux and quality and have a direct impact on human lives. The publication describes in detail radiotracer technology, as well as methodologies, study design, measurement and analysis related to radiotracers. The publication also provides guidance on training in the use of radiotracers and includes environmental case histories from five Member States — Australia, Brazil, France, the Republic of Korea and Sweden — which provide information on conducting studies involving the use of radioactive tracers.

www-pub.iaea.org/books/IAEABooks/10689/Use-of-Radiotracers-to-Study-Surface-Water-Processes