

United States-Japan Nuclear Security Working Group

2014 Nuclear Security Summit Fact Sheet

The United States and Japan established a bilateral Nuclear Security Working Group (NSWG) in 2011 in response to a shared desire to demonstrate leadership in strengthening nuclear security worldwide and in support of the Nuclear Security Summit process. This group developed a Roadmap containing tangible actions in support of shared objectives and goals. When taken together, these goals constitute a layered approach to nuclear security including: reducing quantities of nuclear material and/or its attractiveness, reducing the vulnerability of material to theft or diversion, and strengthening response and forensics capabilities. Achievements outlined in the nine goals of the NSWG Roadmap below have benefited both countries' nuclear security expertise, strengthened our nuclear security posture, and have fundamentally reduced the threat that terrorists would acquire nuclear material.

Goal 1: Cooperation within the Integrated Support Center for Nuclear Non-proliferation and Nuclear Security (ISCN)

Since Japan Atomic Energy Agency (JAEA) established the ISCN in December 2010, as the first new Center of Excellence of its kind in the region, JAEA and the U.S. Department of Energy (DOE) have successfully collaborated on the development of ISCN programs for strengthening international capacity in nuclear non-proliferation and nuclear security. This bilateral cooperation has included: state-of-the-art training courses on physical protection of nuclear material and facilities for about 250 participants from 27 countries; developing physical protection training tools and technology performance testing capabilities; and enhancing scenario analysis and tabletop exercise (TTX) capabilities at ISCN.

Goal 2: Research and Development of Nuclear Forensics, Measurement and Detection Technologies, and Sharing of Investigatory Best Practices

Building on a series of initial meetings and workshops to facilitate information exchange on nuclear forensics, JAEA and DOE have strengthened forensics capabilities through four new technical cooperation projects. Nuclear forensics experts from Japan and the United States continue to collaborate through these projects on joint R&D in nuclear material signatures, including uranium age dating measurements and characterization of nuclear fuel for forensics purposes, and the establishment of a proto-type national nuclear forensics library at JAEA.

Goal 3: Cooperation on Safeguards Implementation

In February 2013, DOE and JAEA celebrated 25 years of official cooperation to develop advanced technologies for effective and efficient implementation of nuclear safeguards. Some of the techniques pioneered through this collaboration have facilitated the International Atomic Energy Agency's (IAEA) transition to a modernized international safeguards system, increasingly reliant on remote and automated verification measures at a wide range of fuel cycle facilities. Since 2011, JAEA and DOE have further expanded this cooperation by launching 10 new safeguards implementation projects of high priority, including joint work on: safeguards measurement techniques for spent fuel; safeguards equipment for J-MOX; advanced measurement for plutonium solutions; and technologies for safeguards application at Fukushima. DOE and JAEA held a technical meeting on safeguards technologies with possible application to

the Fukushima Daiichi Nuclear Power Station in February and September 2013. Both sides have also continued to increase coordination and cooperation in the area of safeguards training.

Goal 4: Sharing Best Practices for Nuclear Security in New Facility Design

Both countries conducted reciprocal visits to Rokkasho and Savannah River to observe the construction sites of MOX fuel fabrication facilities. JAEA and Sandia National Laboratories (SNL) together developed a Security-by-Design Handbook for third countries as a joint research project to identify best practices for incorporating security considerations early into the design process of new nuclear facilities, and are exploring opportunities for further joint outreach to other stakeholders in the international community.

Goal 5: Cooperation on Transport Security to Reduce the Chances of Theft or Sabotage

For the purpose of achieving mutual understanding of the structure of transport security and its implementation in line with international guideline INFCIRC/225/Rev.5, both countries conducted a TTX on Transport Security March 26 – 28, 2012 in Honolulu, Hawaii. Following this a TTX Workshop was held in Tokyo on August 26-29, 2013. The goal of this workshop was to discuss how TTX are developed and used to ensure security of nuclear material in transit via road and sea. The workshop also helped prepare for the transport security gift basket event held in Tokyo on November 12-14, 2013.

Goal 6: Convert Reactors to Reduce the Use of HEU and Complete Down-Blending Operations

Both countries continue to work towards the conversion of highly enriched uranium-fueled research reactors, where technically and economically feasible, and the timely removal and disposal of nuclear materials from facilities no longer using them. In a major step forward in this effort, the governments of the United States and Japan have decided to remove and dispose all HEU and plutonium from JAEA's Fast Critical Assembly (FCA) and extend research reactor spent fuel returns from Japan by ten years. Both countries intend to work together closely to execute this important commitment in a timely manner. Additionally, both countries remain committed to feasibility studies for converting the Kyoto and Kinki University Reactors to the use of low-enriched uranium, the down-blend of HEU from the Yayoi reactor and the National Institute of Advanced Industrial Science and Technology (AIST), and the shipment of HEU from JAEA's Japan Materials Testing Reactor Critical Assembly (JMTRC) reactor to the United States for disposition.

Goal 7: Implement INFCIRC / 225 / Rev.5

DOE and JAEA have continued to help promote better understanding and implementation of the new nuclear security recommendations in the document INFCIRC/225/Rev.5 through joint workshops at the ISCN, and both continue to support the development of Implementing Guides for INFCIRC/225/Rev.5 for eventual publication by the IAEA. Both countries have also launched a series of technical meetings for further collaboration and information exchange to facilitate INFCIRC/225/Rev.5 implementation, including on: protective strategies against sabotage and effective interfacing of safety and security measures; insider threat evaluation and protection methodologies; and the development of effective cybersecurity measures for nuclear facilities.

Goal 8: Integrating Response Forces into Dealing with Theft and Sabotage at Facilities

The U.S. side had the opportunity to observe the integrated exercise with the joint participation of the police, the coastguard and operators held at the Rokkasho Reprocessing Plant and to conduct the force-on-force exercises workshop in Tokyo in December 2010. Likewise, the Japanese side had the opportunity to observe force-on-force exercises at Cooper Nuclear Station and participated in the workshop at the Nuclear Regulatory Commission (NRC) headquarters in November 2011. In 2013, the NRC and DOE hosted a meeting with Japan's Nuclear Regulation Authority (NRA) on the physical protection and response requirements at Category III facilities, to discuss the graded approach to security used at facilities with different levels of risk. Through these occasions, both sides exchanged views and ideas to enhance the mutual capacity of integrating response forces into dealing with theft and sabotage at facilities.

Goal 9: Joint Study on Management of HEU and Plutonium: Reduction of Material Attractiveness

Both countries successfully completed a joint scientific study on evaluation of and potential approaches to reduce the attractiveness of nuclear materials that could be used by terrorists to create a nuclear explosive device. At the "Global 2013" International Nuclear Fuel Cycle Conference in September 2013, both countries shared the results of the US/Japan scientific study on the evaluation of and potential approaches to reducing the attractiveness of nuclear materials to terrorists, which was conducted under the Working Group's auspices. As a next step, Japan is currently considering a U.S. proposal for a joint impact analysis study investigating the realities of implementing the study's recommendations. Both countries have decided to conduct an exchange and a peer review of papers on materials attractiveness with France and the United Kingdom.