Photo: Ben Solomon/U.S. Department of State

Heads of state and foreign ministers participated in the 2016 Nuclear Security Summit, held March 31–April 1, in Washington, D.C.

NONPROLIFERATION

Nuclear Security Summit series concludes

Participating nations at the 2016 summit made new commitments to help strengthen the global nuclear security architecture and signed on to 'action plans' in support of the IAEA and other international organizations.

Almost exactly seven years after calling for the creation of a global summit on nuclear security in an April 2009 speech in Prague, President Obama hosted world leaders at the fourth and final such gathering, held March 31–April 1, in Washington, D.C. (The first summit was held in Washington in 2010 [*NN*, May 2010, p. 17], with subsequent conferences held in South Korea in 2012 [*NN*, May 2012, p. 36] and the Netherlands in 2014 [*NN*, May 2014, p. 36].) Although arguably diminished to some degree by the Russian Federation's decision in late 2014 not to attend (*NN*, Dec. 2014, p. 35), the 2016 Nuclear Security Summit drew leaders from 52 nations, as well as from the European Union, the United Nations, the International Atomic Energy Agency, and Interpol.

The highlights of this year's event included an announcement that the 2005 Amendment to the Convention on the Physical Protection of Nuclear Materials would soon enter into force, with the required 102 countries having completed steps for its ratification. Also, the United States, the United Kingdom, and the EU have agreed to a uranium swap in which approximately 700 kilograms of high-enriched uranium will be transferred to the United States from the Dounreay nuclear site in Scotland, and the United States will send a quantity of HEU to Euratom, in France, in a form suitable for manufacturing into fuel and targets for use at a European research reactor that produces medical isotopes.

Continued

As with the earlier summits, this year's conference also generated its fair share of what event organizers term "gift baskets," i.e., specific nuclear security commitments from a subset of summit participants, often in the form of joint statements. Noteworthy among them were the following:

■ A commitment from 39 states—Argentina, Armenia, Australia, Belgium, Canada, Chile, China, the Czech Republic, Denmark, Finland, France, Georgia, Germany, Hungary, India, Italy, Japan, Jordan, Kazakhstan, Lithuania, Mexico, Morocco, the Netherlands, New Zealand, Nigeria, Norway, Poland, Romania, Singapore, South Korea, Spain, Sweden, Switzerland, Thailand, Ukraine, the United Arab Emirates, the United Kingdom, the United States, and Vietnam—to establish the Nuclear Security Contact Group, which is to meet annually on the margins of the IAEA General Conference. According to the joint statement on the matter, the group will be tasked with discussing a broad range of nuclear security–related issues, including identifying emerging trends that may require more focused attention; promoting and assessing the implementation of nuclear security commitments, including those made during the Nuclear Security Summit process; developing and maintaining linkages to nongovernmental experts and nuclear industry; and determining any additional steps that may be appropriate to support these goals. The group will also be able to make recommendations on convening future summits.

■ A commitment by 27 states—Armenia, Australia, Belgium, Canada, Chile, the Czech Republic, Finland, Georgia, Germany, Hungary, Israel, Italy, Japan, Jordan, Kazakhstan, Mexico, Morocco, the Netherlands, Nigeria, Norway, Romania, South Korea, Spain, Sweden, Thailand, the United Kingdom, and the United States—to establish and implement measures on a national level to mitigate insider threats.

■ A commitment by 29 states—Argentina, Armenia, Australia, Belgium, Canada, Chile, China, Denmark, Finland, France, Georgia, Germany, Hungary, Japan, Jordan, Kazakhstan, the Netherlands, Norway, the Philippines, Poland, South Korea, Spain, Sweden, Switzerland, Turkey, Ukraine, the United Arab Emirates, the United Kingdom, and the United States—to focus on cybersecurity at industrial control and plant systems at nuclear facilities by participating in two international workshops on the topic in 2016.

■ A commitment by 22 states—Argentina, Armenia, Australia, Canada, Chile, the Czech Republic, Denmark, Finland, Georgia, Indonesia, Mexico, the Netherlands, Nigeria, Norway, the Philippines, Poland, Romania, Singapore, South Korea, Sweden, the United Kingdom, and the United States—to "make every effort to achieve further progress" toward minimizing and eliminating the use of HEU in civilian applications.

In addition, the two-day event produced five action plans in support of the nuclear security–related mandates of the Global Initiative to Combat Nuclear Terrorism, the Global Partnership Against the Spread of Weapons and Materials of Mass Destruction, the IAEA, Interpol, and the United Nations. In remarks at the summit's closing session, Obama referenced the plans, stating, "I was heartened by our collective commitment to ensure that the IAEA, Interpol, the United Nations, and the various coalitions that have formed are properly resourced and supported by various nation states in order for them to be able to carry out the ongoing work that will be required to ensure that the commitments and pledges and practices that we have put into place during the course of these Nuclear Security Summits carry forward."

Security Briefs

THE NRC AND FEMA HAVE FOCUSED THEIR COOPERATION by consolidating three existing memorandums of understanding (MOU) into one. This establishes a framework of cooperation between the two agencies with regard to radiological emergency response planning and preparedness matters. Notice of the MOU was published in the March 17 *Federal Register*.

As part of the Federal Emergency Management Agency's initiative to amend 44 CFR Parts 350–354, the FEMA/NRC Steering Committee for Emergency Planning chose to consolidate the three existing MOUs between the entities on radiological emergencies into one streamlined, updated document. According to the *FR* notice, the consolidated MOU establishes a concise listing of legal authorities; enhances the description of the disaster-initiated review process; eliminates superfluous emergency response language by referring to existing documentation, such as the National Preparedness System and the Nuclear/Radiological Incident Annex; confirms that nothing in the MOU is intended to conflict with current law or regulations or the directives of FEMA or the Nuclear Regulatory Commission; and includes the interface process between the agencies concerning decommissioning plants and the NRC-approved effective date when FEMA Radiological Emergency Preparedness Program services will no longer be required.

SIX METRIC TONS OF U.S. NON-PIT PLUTONIUM WILL GO TO WIPP, according to a Department of Energy record of decision published in the April 5 *Federal Register*. The DOE declared in December of last year that preparing the 6 metric tons (t) of material for disposal at New Mexico's Waste Isolation Pilot Plant was its "preferred alternative" among the available options, but at that time, a final decision had not been made (*NN*, Mar. 2016, p. 30). The non-pit Pu is part of 13.1 t of U.S. surplus Pu—including 7.1 t of pit Pu—that the DOE needs to dispose of in order to further U.S. nonproliferation policies and to meet its obligation to remove surplus Pu from the Savannah River Site. (No decision has yet been made regarding the remaining 7.1 tons of surplus material.) According to the *FR* notice, "Shipments of this surplus non-pit plutonium to WIPP, after it is operational, will be placed in the queue of waste to be shipped to WIPP. This plutonium will be prepared and packaged to meet the WIPP waste acceptance criteria for contact-handled TRU waste and other applicable regulatory requirements."

THE DOE'S NEW PLUTONIUM DISPOSAL PLAN IS RISKIER than proceeding with construction of the Mixed Oxide (MOX) Fuel Fabrication Facility, a recently released study from High Bridge Associates states. (In its fiscal year 2017 budget request, the Department of Energy, relying on other studies, called for ending the over-budget MOX project and instead pursuing a "dilute and disposal" option for the elimination of U.S. surplus weapons-grade Pu, arguing that the latter approach, involving storage of the Pu at the Waste Isolation Pilot Plant, would be far more affordable.) According to the High Bridge study, which was prepared for the board of governors of CB&I Areva MOX Services, the contractor building the MOX facility, "The most serious concern is that the plutonium packaging endorsed by the DOE will be crushed over time as the salt chambers in WIPP close up, creating a high likelihood of an uncontrolled criticality."

In response to the High Bridge study's claim, Sandia National Laboratories' senior manager, Paul Shoemaker, stated in a memo to a DOE official, "While surplus, weapons-grade Pu disposal would increase the amount of Pu-239 (and possibly other Pu isotopes) in WIPP several fold and increase the average density of Pu-239, criticality of downblended and packaged Pu-239 cannot result. The salt formation will squeeze the disposal rooms and consolidate the waste, but this process cannot *separate* Pu from the diluting materials to form an undiluted critical mass."