Managing Nuclear Security Risks Post-2016: The Case for Centers of Excellence

November 9, 2015

By Sharon Squassoni,
Senior Fellow and Director

Nuclear security experts are bracing themselves for what comes after the last Nuclear Security Summit in 2016, to be held in Washington, D.C. Without high level attention to what was a tiny, dusty corner of nuclear policy (compared to, say, North Korea's nuclear weapons or Iran's nuclear program or the accident at Fukushima), the chances are fairly good that nuclear security will fade into the background of nuclear policy, at least until the world confronts a major nuclear terrorism incident.

To be sure, some of the gains achieved since the first summit was held in 2010 have made the world more secure against nuclear terrorism, but the job isn't over yet. Eighty-five percent of the world's weapons-usable fissile material still lies in the military sector and in the civilian sector, countries have agreed to minimize the use of highly enriched uranium (HEU) but not to eliminate it. A small number of countries adhere to voluntary international guidelines for plutonium management, but there is no long-term plan for reducing the risks from stockpiles of separated plutonium. And there is enough separated civilian plutonium for tens of thousands of nuclear weapons.

The nuclear security summits have raised public awareness, spurred new commitments, and focused government resources. Without them, it will be difficult to harness the political support for the additional changes that are necessary for sustainable nuclear security.

> ***"Without high level attention… the chances are fairly good that nuclear security will fade into the background of nuclear policy."***

As we look beyond the 2016 summit, we need to consider the best organizations, processes, or venues to help further the legacy of the nuclear security summit process. The Centers of Excellence (CoEs), or nuclear security support centers, that have been established in response to the summits have significant potential to provide not only the basis for tangible national progress in nuclear

security, but also a much-needed institutional framework for international nuclear security cooperation into the future.

- Engagement with industry, civil society
- Increased resources
- New nuclear security concepts

Photo: International Nuclear Security Academy (INSA), Daejeon, South Korea. August 2015. Credit: Sharon Squassoni

In public remarks in July 2015, the U.S. Sherpa for the summit, Laura Holgate, made a strong pitch for CoEs to do just that. In addition, she suggested that CoEs could actually carry forward what she deemed to be the successful elements of the NSS process thus far:

- Attention of leaders
- Driver for action
- Progress reports
- Sherpa empowerment
- Scenarios/exercises
- Support for international organizations
- Building confidence in national nuclear security implementation

This is obviously a far-reaching vision, but one that is necessary if CoEs become, in her words, "a major component of the effort to carry forward the Summit momentum." Ms. Holgate did suggest four "critical ingredients" of a CoE community that could act in that capacity: strengthened coordination and cooperation among CoEs; certification to international standards (not just trainees but CoEs themselves); emergence of CoEs as the providers of mandated training under national regulations; and regional and international participation. This paper will address the first two of these ingredients and offer practical approaches that could be used at the

2016 Nuclear Security Summit and beyond. In particular, this paper outlines why a points-of-contact group is necessary after the 2016 summit, how CoEs could be a useful hook to gain support for that group, and how such a group could strengthen the lasting impact of CoEs by connecting them to policy processes and industry efforts.

Strengthened coordination and cooperation among CoEs

Coordination and cooperation serve many functions. As tools to strengthen national nuclear security implementation, specialization of programs, as long as they are open to international participants, can provide more comprehensive training opportunities across countries. The sharing of best practices can improve implementation across countries. But collaboration does not need to be limited solely to CoEs. CoEs can provide benefits to and can benefit from collaboration with industry, academia, and think-tanks (see report from July 2015 CSIS-ISCN workshop). For example, CoEs can learn from the sophisticated job task analyses done by industry to help identify competency requirements. In the United States, the nuclear industry has worked with selected academic institutions to identify educational requirements (as opposed to training requirements) but more could likely be done in nuclear security, and CoEs could play a useful role there. Finally, think tanks can play a useful role in providing feedback on broader issues, spurring innovation or responses to analyses (e.g., the NTI Nuclear Security Index) and as conveners for policy-relevant brainstorming sessions. All four sectors should collaborate in identifying incentives for complying with voluntary standards.

"Even though many CoEs are just a few years old, coordination and cooperation is already growing."

Even though many CoEs are just a few years old, coordination and cooperation is already growing under the INSEN and NSSC networks, and within the EU's CBRN network. However, the nature and pace of cooperation is uncertain. The style and approach of these networks are different: the EU network was designed with coordination in mind (both regional and between CBRN disciplines), while the IAEA NSSC network promotes coordination. Whereas the IAEA is not in the business of directing states to collaborate, it has a strong interest in collaboration, particularly with respect to training. Its objectives for the NSSC network are limited, however: to develop human resources, develop a network of experts, and provide technical support for equipment management and scientific support. Even so, the IAEA supports harmonization and "train the trainer" programs that maximize its limited financial and personnel resources. The EU, on the other hand, has millions of Euros for CBRN projects. However, the EU CBRN network is funding projects, rather than centers. A significant question is whether the NSSC, INSEN and the EU networks are directed enough to create the kind of lasting coordination

that can link technology and policy together to support nuclear security excellence.

Certification to international standards (not just trainees but CoEs themselves)

The issue of certification of trainees and accreditation of CoEs has arisen often in the context of how to make CoEs truly excellent. Demonstrable competence should be a goal of CoEs, whether for the recipients or providers of training. States subscribing to the Strengthening Nuclear Security Implementation (INFCIRC/869) committed to ensuring that "management and personnel with accountability for nuclear security are demonstrably competent." The Initiative did not provide details on how to do that.

For CoEs, collaboration with existing industry training and certification programs could provide significant advantages, not least of which are the significant resources that nuclear industries (in some countries) spend on training. For example, the U.S. nuclear industry spends over $365M annually training 60,000 industry staff (overall, not just in nuclear security).

In the case of the United States, nuclear security training is required but not accredited under the system devised in the aftermath of the accident at Three Mile Island. That system has distinct roles for the regulator, the industry organization (INPO), the National Academy of Nuclear Training (NANT) and companies. Companies keep records of education and training, provide training on non-accredited programs according to regulations, and maintain accreditation for 13 programs. NANT standardizes training requirements and accredits 13 training programs at utilities (every two years), while INPO audits utility training programs, collects data and provides reports to the NRC. The NRC establishes the training and education regulations, oversees INPO's auditing, and inspects utilities.

A certification system for CoEs could be as simple as meeting ISO standards for training programs; WINS reportedly has already done that for itself. Nuclear-security specific certifications, however, would be a significant step towards standardization. The IAEA can help facilitate a certification system for CoEs if member states promote the idea.

"Demonstrable competence should be a goal of CoEs, whether for the recipients or providers of training."

Nuclear Security Points-of-Contact Group: the CoE angle

There needs to be a regularized process for assessing nuclear security implementation post-2016. It is unnecessary (and probably undesirable) to duplicate the summit process, but some high priority issues deserve continued attention (e.g., the cyber element of nuclear security). A regularized process of review could fill the gaps in the absence of periodic reviews of the CPPNM and required peer reviews. One approach is to establish a Points of Contact (POC) Group for

nuclear security similar to the POC group established for the Missile Technology Control Regime. The objective would be to harmonize state-level policies aimed at improving nuclear security. Like the MTCR's POC group, a Nuclear Security POC group could meld technical and policy officials. Such a group could easily include CoE representatives to ensure that not only are their national training programs meeting domestic policy needs, but also reflect international standards and policies.

One approach to setting up such a group is to do so openly, acknowledging the need for a coordinating mechanism. The mandate could be as limited as assessing implementation of the Strengthening Nuclear Security Initiative adopted at the 2014 summit (INFCIRC/869), or as broad as an international coordinating mechanism on nuclear security improvement.

If a broad approach is too ambitious, a POC group focused on promoting Centers of Excellence could be a deliverable in a COE gift basket, as described in the attached document.

Conclusions

The Centers of Excellence have been called a "signature" of the nuclear security summits. More than anything else, they are a tangible expression of commitments by individual countries to improving nuclear security. Long after individual quantities of HEU or plutonium have been shipped out of countries, down-blended, or secured, the training, research, and other support for nuclear security implementation that they provide, both technical and political in scope, can endure. This will only be possible with continued political, technical and financial support. This is the strongest argument for expanding their role in creating a lasting nuclear security architecture, and every effort should be made to support them not just at the 2016 Nuclear Security Summit but beyond. Commitments by governments and support from, interaction with, and integration with the range of international organizations, multilateral initiatives, and civil society, including industry, academia, and think-tanks are essential.

DRAFT COE GIFT BASKET FOR 2016 NUCLEAR SECURITY SUMMIT

[List of states offering this gift basket] hereby acknowledge that:

- The establishment of centers of excellence devoted partly or wholly to nuclear security since the 2010 summit has helped to demonstrate many countries' commitment to sustaining nuclear security progress into the future.
- These centers of excellence have become a signature of the summit process.
- The European Union, the Global Partnership and the IAEA have all made important contributions to assisting the development and implementation of nuclear security support centers, as well as encouraging regional and international coordination and collaboration.
- There is a need to institutionalize progress on nuclear security in the post-summit environment and centers of excellence and nuclear security support centers have an important role to play in achieving and sustaining nuclear security.
- While centers of excellence vary in their activities, expertise, financial support, and responsibilities, collaboration among centers can contribute to harmonization, specialization, and development of expertise.

We therefore reaffirm our support for collaboration within the IAEA's Nuclear Security Support Center network and efforts related to CoE collaboration under the Global Partnership and by the European Commission as well as training and support activities provided by the World Institute of Nuclear Security (WINS).

In support of further strengthening these centers of excellence as the foundation for continued progress in nuclear security implementation, hereby agree to undertake the following actions:

1. Promote the use of existing Centers of Nuclear Security Excellence or Nuclear Security Support Centers as repositories of learning and information about national and regional implementation of nuclear security guidelines and policies.

a. Encourage states to utilize their centers to facilitate and or produce annual nuclear security progress reports.

b. Encourage states to utilize their centers to coordinate country reporting on the 2014 Strengthening Nuclear Security Implementation Initiative (INFCIRC/869).

2. Establish a Nuclear Security Points of Contact group comprised of technical and policy representatives.

a. Encourage active coordination by the Nuclear Security Points of Contact group with efforts undertaken by the IAEA nuclear security networks (INSEN and NSSC) Global Partnership, European Commission and WINS.

b. Urge the Points of Contact group to establish joint working groups to assess potential new areas of collaboration, including among Centers of Excellence. These could, for example, focus on development of guidelines on information security, development of guidelines on information exchange; development of regional peer reviews; and/or development of common performance criteria for Centers of Excellence.

3. We urge the Points of Contact group to establish a Leadership in Nuclear Security Design program (LNSD) to develop a voluntary rating system for country-wide performance in nuclear security. Akin to the environmental LEED program (Leadership in Energy and Environmental Design), an LSND program would incentivize and acknowledge "best in class" nuclear security policies, practice, training and support.