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Sustaining International CBRN Centers of Excellence with a Focus on Nuclear Security and Safeguards: Initial Scoping Session London, 23-24 September 2013 SUMMARY REPORT

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November 2013



Pacific Northwest
NATIONAL LABORATORY

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Pacific Northwest National Laboratory
Richland, Washington 99352

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SUMMARY REPORT

This report provides a summary-level description of the key information, observations, ideas, and recommendations expressed during the subject meeting. The report is organized to correspond to the meeting agenda provided in Appendix 1 and includes references to several of the participants listed in Appendix 2. The meeting venue was Lloyd's Register in the City of London. Lloyd's Register graciously accommodated the request of The Pacific Northwest Laboratory (PNNL) with whom it works on various safeguards activities commissioned by NNSA. PNNL and NNSA also shared the goal of the meeting/study with the United Kingdom (UK) Foreign and Commonwealth Office (FCO) and the Department of Energy and Climate Change with whom they coordinated the participant list.

1.0 Key Outcomes and Recommendation

1.1 COE Stakeholder Engagement

The participants suggested at several points during the scoping session that enhancement of the collaborative linkages among COEs would be of significant mutual benefit, and that effective mechanisms for this already exist, for example Working Group B (Coordination) of the IAEA's Nuclear Security Support Centers initiative. Such collaborations and coordination would recognize and leverage the similarities and areas of common interest among COEs. A specific recommendation was made by the UK Foreign and Commonwealth Office: consider development of an international peer review panel to serve the needs of the COE community, define a process for its activities, and charge the panel with asking a broad set of key questions on a periodic basis. This would contribute significantly to international visibility and therefore sustainability of participating COEs. It was noted that some of the newer COEs may not yet be ready for this.

Additional recommendations included:

- Need more guidance from donors to COEs and transparency among the stakeholders. Information - sharing and harmonization among similar COEs is important.
- Need an overall architecture and central portal (such as NUSEC) for sharing information among donors and planning new initiatives.
 - Global Partnership could act as a coordinator of training and activities.
 - Facilitate communication among stakeholders but be cognizant of information security.
 - Encourage countries to add materials to information sharing portal (e.g., NUSEC).
 - Compile lessons learned from other industries and post on the shared portal.
- Need a clear vision for each or all COEs. Are COEs focused on operations and implementation or are they more support organizations for stakeholders?

- Interested in clarifying donor or international community expectations about how COE's should act at regional level, and how this might vary geographically.
- Participants agreed that industry is an underrepresented key stakeholder in many COEs and discussions about COE needs, priorities and activities.
- The participants suggested that similar sustainability needs exist among the broader CBRN COE community. COEs could benefit by cross-leveraging their capacity-building efforts, and platforms are being established that can be used to increase communication and coordination

1.2 COE Funding

The consensus of the participants was that assistance to COEs in developing strategies for the pursuit of multiple, diversified funding streams would be of significant value. This assistance could inform development of generic financial strategies for selected markets, such as government donors, foundations, and technical scientific organizations. It could also inform development of specific strategies for identified organizations in each selected category, such as the European Bank for Reconstruction and Development (EBRD). Participants also requested help in identifying the minimum skill set necessary for the sustainable functioning of a COE and the corresponding training requirements. This could be one topic for a future meeting among all interested COEs. It was also recommended that a program plan for COE sustainability, which would relate needs to funding priorities, be developed.

The MESIS presentation emphasized the need for a dual-use approach to ensure donor objectives resonate with the recipient community.

1.3 COE Performance Metrics

The participants recommended that even though COEs may have different operating models, their flexibility and sustainability would be enhanced through development of some common definitions, operating parameters and commonly-recognized indicators of resilient organizations. For example, there is value in defining what it means to be "excellent". In addition, the participants also agreed with observations voiced by MESIS regarding adaptive management and resiliency. Specifically, a roadmapping process would be helpful to identify technical capabilities and key staff positions necessary for sustainability (e.g., business manager, accountant, proposal writers, media relations person). It was further suggested that another term - as an alternative to COEs - be identified to provide a more appropriate generic label for emerging COEs or organizations that are in the development process. The participants recommended that specific performance indicators related to CBRN risk reduction be developed and disseminated broadly, as those would relate most directly to the central mission and objectives of many of the COEs.

2.0 Summary Of Scoping Session Presentations And Discussions - Day One

2.1 Welcome and Introductions

Professor Mamdouh El-Shanawany, Nuclear Director of the Lloyd's Register Group, welcomed the participants and provided a brief overview of the Lloyd's Register's business and history.

2.2 Opening Remarks

Ambassador Bonnie Jenkins of the U.S. Department of State and Co-Chair (with Italy) of the Global Partnership's COE Working Group provided the participants with a set of opening observations:

- Sustainability is a key element to all we do.
- Security culture is important in promoting sustainability, and most COEs recognize this need.
- A question that needs to be addressed is what is the possibility of COEs working together as a network, noting the availability of the IAEA Nuclear Security Support Center Working Group "A" (Collaboration and Coordination) for this purpose, with approximately 80 members, and the need to engage other such platforms.
- Ambassador Jenkins will be open to ideas as follow-up to this event.

Laura Grant, the CBRN Security Desk Officer of the UK Foreign and Commonwealth Office followed up with observations that COEs exhibit many formats, and both needs assessments and monitoring and evaluation activities are important determinants. Robin Grimes, the FCO Chief Scientific Officer, described why the UK had not developed a CBRN COE: too early in the UK's re-development of nuclear energy, and insufficient mandate and funding. However, he pointed out that their COE evaluation did raise awareness of need, and that coordination of nuclear needs has been formally reviewed (the Beddington Review) and as a result two cross-departmental structures have been set up in the UK government.

2.3 Objectives

Margot Mininni of the U.S. National Nuclear Security Administration outlined key objectives for the initial scoping session. In brief remarks she:

- Thanked Lloyd's Register Group for their hospitality in providing the meeting venue and refreshments. Lloyd's Register is an organization dating from 1760 that provides independent assurance to companies operating high-risk, capital intensive assets in the energy and transportation sectors and as such is known for its expertise in enhancing the safety and sustainability of organizations in the nuclear energy industry. Margot also noted that representatives from Lloyd's Register would make a presentation on performance metrics during the meeting.
- Underscored the importance of keeping the primary focus on sustainability throughout the meeting.
- Reiterated the three themes meant to guide the discussion in order to facilitate that focus: Stakeholder Engagement, Funding and Financing of COEs, and Metrics to measure performance.
- Stressed the intention to develop a document for distribution with meaningful recommendations.
- Highlighted that this meeting is a "proof of concept" for possible future meetings on different topics concerning COEs.

2.4 Techniques for Sustaining COE Organizations

Roger Anderson of PNNL presented a summary of selected techniques and approaches to sustaining COEs as organizations (Appendix 3). Key discussion points that this raised among the participants included:

- Existing networks (as described above) can be used as vehicles to serve as a COE 'community of practice.'

- A COE sustainability strategy should include clear definition of its mission space.
- The quality of a COE's supply chain is important; best practices in supply chain design and accreditation should be used.
- COE's can be coordinating organizations, not necessarily housing significant staff/expertise.
- There may be potential conflict or overlap among COEs and other existing national and regional expertise and activities.
- COEs should provide a societal perspective to the security community, and a rational threat assessment to society, and COE networking must be better than that of adversaries.
- Industry, which is at the deployment end of the technology lifecycle, has the best perspective on basic science needs and that should be reflected in research activities across the full technology lifecycle.

2.5 Sustainability of Safeguards and Security Centers of Excellence

Sarah Frazar of PNNL presented a summary of frameworks for sustaining COEs' capacity building activities (Appendix 4). Key discussion points made by the participants during this presentation included:

- Experience providing capacity building training on nuclear safety issues in Iran suggests the importance, from a sustainability perspective, of an ongoing effort to mentor trainers after their selection through a train-the-trainer process, to ensure that they are well-equipped to provide the desired training.
- The EU has had success with placing emphasis on interactions among those selected as in-country trainers, allowing them to share their experiences.
- To keep communities together and communicating requires having an organizational structure and funding in place.

Standardized Approach to Training (SAT) and Instructional Design Approaches (IDA) provide a useful foundation for promoting sustainable activities. The two concepts of instructional design and standardized approach to training were well known to several in the audience, particularly those familiar with or formerly of the IAEA. Participants echoed the value of pursuing a standardized approach to training when developing training materials.

3.0 Partner Perspectives on Planning for and Operating a Sustainable COE

3.1 Middle East Scientific Institute for Security

Al-Sharif Nasser bin Nasser's presentation on the Middle East Scientific Institute for Security (MESIS) is attached as Appendix 5. Key discussion points made during this presentation included:

- Keeping in mind the cultural perspective of its society, MESIS maintains a focus on civil protection, rather than only on nonproliferation and WMD.
- Nasser represents two separate entities, MESIS and the Middle East Regional Secretariat of the EU CBRN CoE initiative. He recognizes the differences of the "bottom up" approach adopted in principle by the EU in identifying regional needs from the more "top down" approach traditionally adopted by other international donors. The former is meant to give the region the ability to voice its own needs but Nasser recognizes that it falls

short because many regions are unable to identify what their needs are using proper methodologies.

- But regardless of donor approach, MESIS provides essentially the same functions -- connector, facilitator, interlocutor-- among key national and regional stakeholders and the international donor community.
- Networking is the most important aspect of COEs and should not be overlooked. Networks are fragile. A key question is how to maintain networks and importantly, how to extract value from them.
- Nasser raised the question of whether COEs are demand-driven or is demand being created for them? This stirred a lot discussion among the participants.
- It was suggested that COE functions might be structured in a modular fashion.
- Nasser said that COEs are not utilizing new forms of communication or networking and are still depending on traditional forms.
- The Middle East Regional Secretariat of the EU serves four countries while MESIS serves the entire Middle East.
- MESIS is a CoE on its own accord while the Secretariat is designated as one. This has an important bearing on expectations.

3.2 National Center for Nuclear Energy, Sciences and Technologies

Itimad Soufi's presentation on the National Center for Nuclear Energy, Sciences and Technologies (CNESTEN) is provided as Appendix 6.

- CNESTEN was recognized by the IAEA as a regional training center for radiation safety in 2002.
- CNESTEN plays a regional role, focused on French-speaking countries in Africa and the Middle East.
- As a center, CNESTEN uses its research reactor to generate nuclear applications for national purposes. It hosts workshops, courses and seminars to enhance awareness of nonproliferation issues and to support adherence to international conventions.
- Three key stakeholders drive center activities: IAEA, DOE and Arab Atomic Energy Agency.
- In 2010, CNESTEN established the National Training and Support Center to improve the organization's training capacity, develop and implement training programs tailored to meet national needs, develop network of expertise, strengthen coordination/cooperation (national/international), and promote nuclear security culture in different orgs. The Center conducts regular needs assessments to prioritize activities and ensure Center is meeting user community needs.
- Funding for the Center comes from public sources and international donors. CNESTEN reports progress against its objectives annually to a Steering Committee of national stakeholders, as well as to the Director General of the CNESTEN Board.

3.3 Integrated Support Center for Nuclear Nonproliferation and Nuclear Security

Yosuke Naoi's presentation on the Integrated Support Center for Nuclear Nonproliferation and Nuclear Security (ISCN) is attached as Appendix 7.

- ISCN has three main activities: 1) provide capacity building assistance, 2) support partner infrastructure development activities and 3) facilitate technology development. It offers training activities in three areas: nuclear security, safeguards/SSAC, and nonproliferation. Its national security courses focus on physical protection, nuclear security culture and other topics and use a variety of training tools, including a training field, a virtual reality system and scenario-based instruction. Safeguards/SSAC training consists of international training courses, instrument and inspector training and bilateral cooperation.
- Funding for the organization comes entirely from MEXT. The Japanese Cabinet, MOFA and other interagency offices designate needs for the center.

3.4 Perspectives on the Status and Sustainability of Nuclear Security Support Centers

David Lambert's presentation on Nuclear Security Support Centers (NSSCs) is provided as Appendix 8. Key discussion points raised during his presentation included:

- A new NSSC technical document will be placed on the IAEA website within a week.
- Student exams are not as useful as realistic scenarios that allow them to learn and fail.

3.5 Perspectives on EU Experience with COEs in Nuclear Safeguards and Security

Willem Janssens' presentation on the EU CBRN COE program is provided as Appendix 9. Key discussion points included the following.

To enhance the sustainability we need to implement CBRN COE at multiple levels:

- Include university education
- End-user, train the trainer and supervisor trainings
- Providing best practices for translation in local settings
- Stimulate interagency collaborators through workshops, exercises (table-top; in-field exercises; ideally cross-border)
- Leverage regional capabilities and complementarities rather than competition/duplication.

Typical implementation characteristics are:

- Working in the National Focal Points (often Ministry of Foreign Affairs) which need to build a national network (benefit of forcing internal communication!)
- Encouraging broad interaction with a large variety of services / interlocutors
- Requiring OWN needs assessment and thus recognition of the priority and action plans
- Focus on human awareness, capabilities and long lasting structures and "culture," rather than equipment
- Foster regional collaboration to lower the risk of breakdown after EU support stops
- Allow projects in all layers of the pyramid, that is, support with respect to international obligations, national law and regulations, authorities and technical support, operators, future workforce, broader public.

4.0 Facilitated Discussion, Topic 1- Stakeholder Engagement and Topic 2- Funding

Many key points were made by the participants during this wide-ranging discussion:

- Guidance to COEs on sustainability is welcome; this discussion is not happening elsewhere.
- This session is an important opportunity to begin to make the most out of the several vehicles being developed to create and support COEs.
- An important question yet to be answered is how pre-existing Technical Support Organizations (TSO's) can provide capabilities to COEs?
- A distinction can be made among ownership of COEs; single host countries vs multiple countries for a regional COE.
- The will of a host country to keep a COE going is an important sustainability factor.
- It will be important to clarify how COEs and training centers, networks, and donor organizations all fit together; looking at the more established COEs can provide a model.
- No central organization is managing information related to all COE's planned initiatives, and so it may be difficult presently to discern duplication of effort.
- COEs would benefit from an overall "strategic architecture;" the IAEA's NUCSEC is a good start for nuclear safeguards and security.
- It would be useful for a few countries to step up and begin to share information.
- It appears in general that many COEs have been in an initial phase of awareness-raising and may be ready to move into a next phase of their evolution.
- An example of an activity that might represent a next phase of COEs' evolution might be for 5-6 countries to coordinate a set of research projects, for example the capture of procedures for facility operations using virtual reality techniques.
- It may also be useful to foster regional models, focused, for example, on multilateral fuel cycles.
- Media relations are not currently an emphasis for some COEs, although this topic is seen as a sustaining activity. Many do not understand how to pitch their center, talk to journalists, or generally how best to use media and outreach and lack the right personnel for an effective media campaign. CNESTEN maintains the Technical Crisis Center for radiological incidents. The Science Media Centre in the UK, which offers scientists with media training to respond to media requests for information, is said to be very effective and is being studied by Australia, New Zealand and others. This may be a model worth considering for COEs.
- MESIS is very interested in developing multiple revenue streams aligned with multiple services, beyond the present offerings of workshops and consultancy. Additional offerings would complement what is offered by others, such as the Royal Society. As such MESIS is looking for help to identify future stakeholders - as it evolves and thinks it needs to look long--perhaps 10 years out.

5.0 Summary Of Scoping Session Presentations And Discussions - Day Two

5.1 Performance Metrics in the Nuclear Energy Industry

Tim Courtney and Garry Moon of Lloyd's Register Group presentation on the use of performance metrics, using examples of their own company practice, is provided as Appendix 10. The wide-ranging discussion among the participants that this initiated is described below.

5.2 Facilitated Discussion, Topic 3- Performance Metrics for Your Organization

- WANO's approach to performance evaluation for new organizations differs from that used for more mature organizations, and allows new organizations to use simple, achievable objectives without being stymied by more elaborate performance metrics (although mentoring may be performed by more mature organizations); this may be worth considering for COEs.
- Organizational culture indicators, which are things that will help keep your organization in place, such as customer satisfaction or staff turnover, may be useful measures of sustainability. More generally, performance metrics must be geared around supporting an objective; a (shared) vision of the future.
- It is useful to have a metric focused on the performance of periodic organizational reviews. External reviews help to change metrics to focus on the right things.
- Performance indicators are needed for the middle ground between overall risk reduction and COE-specific performance, based on needs assessments. The EU performs such reviews on a regional basis.
- It is useful to have a balance of internally- and externally-focused metrics.
- External review boards might offer their help across several COEs, providing independent views of lessons learned elsewhere.
- It is important to maintain focus on strategic goals.
- The EU CBRN COE program's experience with performance indicators has been focused to date on the need to determine budget priorities for the next 6 years, rather than on implementation. Importance was tied to overall impact across the COEs and networks, as well as on specific topical areas such as export control, that would be relevant to specific projects. Different sets of indicators are being developed within the COEs.
- CNESTEN is building a management system with input from its stakeholders and would seek additional support from its international partners to include performance measures. MESIS used metrics to change the performance culture/behavior of the initial organization during its restructuring. Missing data was a problem at that point, but this has been addressed. MESIS adds value by guiding donors to the most appropriate organizations, and has compiled data to support this. Performance will be measured with both donors and beneficiaries, although there are significant "immeasurables."
- It was suggested that a dialogue on risk reduction and its relationship to COE activities would be useful, as would the development of specific indicators in this regard.
- It should also be recognized that many activities are part of larger efforts, for example export control being part of larger nuclear security efforts.

- It is better to have a relative few, clearly defined performance indicators; having too many is often detrimental to the focus given to achieving performance improvements in the areas that matter most.
- The effort required to capture and collate data that feed into the performance metrics can be substantial.

APPENDICES

Appendix 1 - Scoping Session Agenda



Appendix 2 - List of Participants



Appendix 3 - Presentation: Techniques for Sustaining COE Organizations



by Roger Anderson

Appendix 4 - Presentation: Sustainability of Safeguards and Security Centers of Excellence



by Sarah Frazar

Appendix 5 – Presentation: Sustaining Centres of Excellence (MESIS)



by Al-Sharif Nasser
bin Nasser

Appendix 6 - Centre of Excellence Moroccan Experience



by Itimad Soufi

Appendix 7 - Presentation: Activities of Integrated Support Center for Nuclear Nonproliferation and Nuclear Security



by Yosuke Naoi

Appendix 8 - Presentation: Nuclear Security Support Centres – IAEA Perspective



by David Lambert

Appendix 9 - Presentation- EU CBRN Centres of Excellence



by Willem Janssens

Appendix 10 - Presentation- Performance Metrics



by Tim Courtney &
Garry Moon



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