



INSEN
International
Nuclear Security
Education Network

**ANNUAL MEETING OF THE INTERNATIONAL NUCLEAR SECURITY
EDUCATION NETWORK (INSEN)**

**IAEA Headquarters, Vienna, Austria
8-12 July 2019**

Chair's Report

Report by Mr Johannes Sterba
Chair of the International Nuclear Security Education Network (INSEN)

IAEA Headquarters, Vienna

8-12 July 2019

The Annual Meeting of the International Nuclear Security Education Network (INSEN) was held at the International Atomic Energy Agency (IAEA) Headquarters, Vienna, Austria, 8-12 July 2019. Attendance included 83 registered participants from 49 countries, 1 international organization and 2 non-governmental organizations.

BACKGROUND

The need for human resource development programs in nuclear security was underlined at several IAEA General Conferences and Board of Governors' Meetings. Successive IAEA Nuclear Security Plans (the Plans), the most recent of which was approved by the Board of Governors in September 2017 and covers the period 2018-2021, give high priority to assisting States in establishing educational programs in nuclear security in order to ensure the sustainability of nuclear security improvements. Equally, the Ministerial Declaration from the 2013 and 2016 International Conferences on Nuclear Security emphasized the importance of collaborative networks in nuclear security education, particularly INSEN.

In the course of implementing the Plans, the IAEA developed — together with academics and nuclear security experts from Member States — a guide entitled *Educational Program in Nuclear Security* that consists of a model of a Master of Science (M.Sc.) and a Certificate Program in Nuclear Security. This guide was published as *IAEA Nuclear Security Series No.12 – Educational Program in Nuclear Security¹ (NSS 12)* in April 2010 and aims at assisting universities or other educational institutes to develop academic programs in nuclear security.²

In order better to address current and future requests for assistance in this area, the IAEA organized a workshop in March 2010. The objectives of the workshop were to discuss current and future nuclear security academic programs/courses of different universities worldwide, to share lessons learned in the development and implementation of nuclear security academic programs and to establish a collaboration network among universities which are providing nuclear security education or which are interested in starting an academic program/course(s) in nuclear security.

During that workshop, the participants agreed to facilitate the collaboration among universities, research institutes and other stakeholders and established the *International Nuclear Security Education Network (INSEN)*, a collaboration network for higher education in nuclear security. The network has met once per year ever since.

¹ For download: http://www-pub.iaea.org/MTCD/publications/PDF/Pub1439_web.pdf

² The NSS 12 technical guidance document was revised to include practical feedback from INSEN members as well as bring it in line with the other nuclear security guidance and recommendations. It was approved for publication by the 13th Nuclear Security Guidance Committee in June 2018.

Day 1

OPENING

The meeting was opened by Mr Jason Tierney, Section Head (Division of Nuclear Security, IAEA), who welcomed the participants to the meeting and, on behalf of the Director, expressed his sincere appreciation to all members and to the leadership for their efforts in taking INSEN further. Mr Tierney provided an update on the status of the educational activities carried out by the Division of Nuclear Security - some of which realized with the support of INSEN - including the upcoming publication of the revised NSS 12 (*Model Academic Curriculum in Nuclear Security*), the revision process of teaching materials, the revitalized Faculty Development Courses (FDC), the schools and Master's degree programs in nuclear security, and the deployment of a new portal. He also reminded participants of upcoming events of significance for nuclear security, namely: the 2020 International Conference on Nuclear Security (in particular the essay competition, where INSEN might play a major role), and the 2021 CPPNM Review Conference. Mr Tierney also mentioned the continuing growth of the Network, adding that more needed to be done to convert quantity into quality: specifically, he highlighted how this increase in size needed to be sustained by an ongoing effort to demonstrate the success and impact of education (in general) and INSEN (in particular) on nuclear security, with a view to ensuring continued support for INSEN and its activities. Mr Tierney welcomed the fact that a significant part of the agenda was dedicated to the discussion of the above-mentioned issues. Finally, Mr Tierney recalled the upcoming 10-year anniversary of the Network in 2020 as an important milestone to celebrate its successes and accomplishments, and reiterated the IAEA's readiness to continue supporting INSEN's work in the future (to the extent of available resources).

Before the meeting officially started, a short memorial was held in honour of Professor El Hassan Sayouty (University of Hassan II Casablanca, Morocco), who had tragically passed away in a plane accident. Some INSEN members paid tribute to the late Professor and invited meeting participants to observe a minute of silence.

The incoming INSEN Chair, Mr Johannes Sterba (TU Wien, Austria), then outlined the meeting agenda and its objectives. The meeting aimed in particular at:

- Reviewing the progress of the action plans set out at the 2018 INSEN Annual Meeting;
- Discussing programmatic activities carried out by INSEN members;
- Developing action plans for 2019-2020;
- Assessing the impact of nuclear security education, as well as the impact of INSEN on nuclear security at national, regional and international level;
- Discussing the revised INSEN Terms of Reference;
- Planning for the 2020 INSEN Leadership and Annual meetings.

The agenda was adopted as presented and is attached to this report (Attachment 1).

Mr Sterba gave the floor to the new INSEN members present in the room in order for them to introduce themselves; he then thanked the outgoing Chairs for their work and proceeded to introduce the new Vice-Chairs of the Network and of the Working Groups (WG). Ms Akila Frahi-Amroun (University of Science and Technology Houari Boumediene, Algeria) was nominated as the new INSEN Vice-Chair. Mr Marcel Schouwenburg (Delft University of Technology, Netherlands) was nominated as the new Vice Chair of WG I. Mr Julius Trajano (S. Rajaratnam School of International Studies, Singapore) was nominated as the new Vice Chair of WG II. Mr Hubert Foy (African Center for Science and International Security, Ghana) was nominated as the new Vice Chair of WG III.

The outgoing INSEN Chair, Ms Sebnem Udum (Hacettepe University, Turkey) then presented the report on the 2019 INSEN Leadership Meeting, which was held at IAEA Headquarters in March 2019. Ms Udum concluded by congratulating Mr Sterba on assuming the Network's chairmanship and wishing the new leadership success. This was followed by progress reports delivered by the outgoing WG Chairs on the status of the implementation of the WG action plans for 2018-2019 which were agreed upon during the previous INSEN Annual Meeting. All the reports are available for download on the INSEN portal.

The morning session ended with a presentation by Mr Dmitriy Nikonov (Division of Nuclear Security, IAEA), who updated the participants on the nuclear security education activities carried out by the IAEA, including the upcoming publication of the revised NSS 12, the schools on nuclear security, and continued support to Master's programs in nuclear security.

The afternoon was dedicated to a series of presentations from INSEN members on the programmatic activities in the field of nuclear security education conducted by their institutions or more general observations on topics of nuclear security. All presentations are available for download on the INSEN portal.

The first day ended with a reception that allowed participants to network and socialize.

Day 2

The second day featured a series of panel discussions.

The first panel focused on ways to assess the impact of nuclear security education. One of the panelists presented a toolkit for impact assessment which might be used as a reference and stressed the importance of first defining clear impact objectives, and then establishing a methodology to measure impact. He illustrated examples of the different kinds of impact which could be sought, including – inter alia – revenue generated by an educational program, number of candidates, or number of graduates.

The discussion mainly revolved around what should be the focus of impact assessment for nuclear security education. Some panelists emphasized how the success of an educational program could be measured by the success of its graduates. In their view, assessment should be based on feedback collected from students/graduates through surveys and/or

questionnaires administered at different stages of a student's life (i.e. at the beginning of the program, at the end of it, and sometime after completion of studies); feedback results then would need to be analyzed in order to determine how the educational program had affected the professional development of the respondents, and to identify areas to be further improved (if any). A panelist suggested that WG III should be tasked with the development and distribution of assessment tools. Distribution of a short questionnaire at the upcoming ICONS conference was discussed. Panelists and meeting participants also agreed on the importance of sharing success stories: despite the fact that educational programs in nuclear security were still relatively new, and it was perhaps still premature to conduct a conclusive impact assessment in this field, it was already possible to demonstrate some remarkable accomplishments of graduates from Master's and certificate programs in nuclear security who had undertaken careers in institutions with responsibility for some aspects of nuclear security in their respective countries. Some panelists provided several examples to this regard, and a graduate from the academic program at UNWE (Bulgaria) who was present in the room talked about his experience and explained how attending the Master's program in nuclear security helped him advance professionally and become an expert for IAEA advisory missions; he added that, in his opinion, this program was the most tangible achievement of IAEA human resource development efforts in nuclear security.

The panel also discussed other means of assessing impact of educational programs in nuclear security, focusing on different stakeholders, namely employers. One panelist emphasized how these programs existed because there was a demand for them, as clearly evidenced by the increasing number of applicants interested in attending Master's programs in this field: stakeholders' demand could thus be considered as a measure for assessing impact. Employability was also a factor to be taken into account: statistics analyzing the career paths of alumni within one year of graduation, and employers' feedback surveys showing a high rate of satisfaction with the programs from which they had graduated, were clear indicators of the contribution of educational programs to strengthening nuclear security at national or international level by shaping the new cadre of nuclear security specialists.

The panel finally debated who would be better suited to conduct a global impact assessment of nuclear security education, namely INSEN or some external experts who would carry out an unbiased and objective assessment.

The second panel was thematically connected to the first and discussed the impact of INSEN on nuclear security at national, regional and international level. Panelists highlighted some of the key benefits derived from the creation of the Network, in particular its contribution to the establishment of academic programs in nuclear security (or the inclusion of nuclear security modules within existing programs) worldwide, which by virtue of the multiplier effect had allowed educational institutions to reach a progressively broader target audience, creating far-reaching awareness of the necessity of nuclear security outside of the traditional security community, and had led to the development of a new generation of nuclear security experts. Other factors attesting the positive impact of INSEN included: the availability of a set of educational resources easily retrievable by its members; the networking opportunity provided by the Network, which facilitated and enhanced cooperation among educational institutions; the creation of a pool of expertise to be resorted to by any institution wishing to

impart education in nuclear security but lacking the necessary capability, resources or infrastructure.

Panelists enumerated a significant number of events which had been organized thanks to or in cooperation with INSEN; in particular, the role of INSEN had been particularly critical for the establishment and conduct of faculty development courses, which had spread awareness of and increased knowledge of nuclear security among faculty members. In general, panelists agreed on INSEN's contribution to the promotion of nuclear security culture worldwide: education in general, and educational networks in particular, were indicated as a powerful tool to raise awareness of nuclear security risks and threats (which was a necessary prerequisite for the adoption of any informed response strategy). INSEN was thus defined as a driving force behind the development of those normative behaviors which would enable the establishment and ensure the sustainability of effective nuclear security regimes. INSEN – panelists remarked – had triggered a much needed discussion around nuclear security among the academic community and beyond, and had provided a unique environment to exploit the potential of educational institutions to serve as a catalyst for the internalization of nuclear security principles and concepts at national, regional and international level. Therefore, INSEN's expanding membership, and the growing number of graduate programs in nuclear security, were to be welcomed as positive developments and as a sign of an ever increasing interest in nuclear security.

The third panel featured a discussion on women in nuclear security, which had become a regular item on the agenda since it was first organized in 2016, with the aim of exploring ways to strengthen opportunities for women to advance professionally in the nuclear security field. The rationale behind holding this panel on a regular basis laid in the observation that the representation of women in the nuclear sector was increasing, but at a slow pace, which meant that more efforts were needed in order to achieve gender parity. The panel moderator stressed how education was a way to increase the representation of women in nuclear security, as well as to instill a culture of gender equality, starting at an early age (i.e. in schools and universities). A keynote speech was delivered by Ms Mary Alice Hayward (Deputy Director General, Department of Management, IAEA), who talked about the IAEA's efforts to attract and retain women, as well as broader efforts to raise awareness of the need for gender equality in the nuclear field. Ms Hayward highlighted the importance of high-level leadership engagement in driving progress in this regard: the IAEA Director General's commitment to increasing the representation of women in the organization, especially at senior levels, was a testament to the essential role played by visible leadership in achieving progress. In addition to leadership commitment, Ms Hayward underlined the need to ensure that the culture and values throughout the organization were inclusive, with a view to creating an environment supportive of gender equality; the recently established Gender Action Plan had been developed precisely with that purpose in mind. She also enumerated a series of initiatives and policies which had been adopted to create an enabling environment. Ms Hayward concluded by stressing how gender diversity generally helped increase effectiveness, and reminded participants that efforts had to focus not only on increasing numbers, but especially on promoting values in order for gender equality to become normatively accepted in a country's or organization's culture.

Other panelists discussed the widely recognized issue of the underrepresentation of women in nuclear security and elaborated upon the reasons behind the barriers to greater female participation. They explored the structural impediments women usually faced in a field which had traditionally been male dominated, including the lack of role models and (conscious and unconscious) bias leading to the belief that women lacked the necessary expertise to make a significant contribution in this field. Panelists discussed potential solutions and ways forward to ‘transform the sector’, in particular: the importance of mentorship programs; networking opportunities; workplace reforms promoting a better work/life balance; increasing the number of women in leadership positions; outreach efforts targeting young women (in particular exploiting the power of social media).

Panelists mentioned examples of international and national efforts undertaken to address gender parity in the nuclear sector, such as the WINS Gender Champions Program, and the promotion of scholarly publication opportunities. In general, panelists agreed on the need for systemic changes to organizational culture to support full participation of women in all roles in nuclear security, starting with the recognition that nuclear security went beyond the traditional ‘guards, gates and guns’ triad and that women had a lot to bring to the table (emotional intelligence, depth of analysis, negotiation and analytical skills, to name just a few). This assumption could translate into actionable items for educators, who had the responsibility to engage and attract young women and convince them to pursue careers in the nuclear field, providing positive and reinforcing examples. Panelists concluded that, in order to achieve gender equality in nuclear security, policy changes were insufficient without cultural changes, that is without internalizing the belief that women were just as capable as men of leading the field.

The afternoon session continued with a presentation on the influence of language on nuclear security education, emphasizing the need for awareness of cultural connotations of the words for “security” and “safety” in different languages.

Concluding the day was a series of presentations by the IAEA Secretariat, including an update on the development and translation of e-learning modules on nuclear security and a demonstration of the revised INSEN page on the NUSEC portal.

Presentations delivered at the above-mentioned panels and during the other sessions are available for download on the INSEN portal.

Day 3

In the morning, Mr Sterba presented one of the outcomes of the 2019 INSEN Leadership Meeting, namely a draft of the revised Terms of Reference of the Network. He explained that the revision focused mainly on the mandate and functions of the Working Groups, reflecting the evolution of the network. Mr Sterba announced that the draft would be made available on the INSEN portal and invited participants to provide comments to the Secretariat by 30 September 2019.

This was followed by a presentation by Ms Frahi-Amroun and Mr Schouwenburg, who provided an update on the revision of INSEN teaching materials in light of the new guidance document NSS 12. They informed the audience of the outcome of two consultancy meetings which had been held for this purpose, and which aimed at: a) mapping the content of old vs new modules (pre- and post-revision of NSS 12) on the basis of IAEA-developed templates, and drafting a series of guidelines for the reviewers of INSEN educational materials; b) incorporating a quality management system in the revision process.

Ms Vesselina Rangelova (EU delegation to International Organizations, Vienna) then delivered a presentation on EU activities supporting nuclear security capacity building, and talked about the CBRN Centers of Excellence initiative and EU contribution to the implementation of the IAEA Nuclear Security Plan (including in the area of human resource development).

All of the above-mentioned presentations are available for download on the INSEN portal.

The rest of the day was dedicated to WG breakout sessions where each WG discussed the status of implementation of previously planned activities and developed an action plan for the upcoming year.

Day 4

Mr Robert Larsen (Division of Nuclear Security, IAEA) and Mr Jose Garcia Sainz (Division of Nuclear Security, IAEA) conducted two mini-FDCs on, respectively, the application of the Shapash 3D model facility to insider threat exercises and the IAEA Incident and Trafficking Database (ITDB) case studies.

Afterwards, meeting participants broke out in three regional groups with a view to exploring opportunities for regional collaboration. The Africa regional breakout group produced a report on their discussion which is available for download on NUSEC.

Day 5

The last day of the meeting opened with another mini-FDC conducted by Mr Thierry Pelletier (Division of Nuclear Security, IAEA) on the detection of nuclear and other radioactive materials out of regulatory control.

Participants then considered possible dates for the 2020 INSEN Annual Meeting and agreed that next meeting would be held on 29 June to 3 July 2020.

Mr Nikonov presented the results of the annual INSEN survey that was filled out by members in the weeks before the Annual Meeting.

The upcoming International Conference on Nuclear Security (ICONS 2020), and the role to be played by the Network in the related international essay competition were discussed by Mr

Artemy Konstantinov (Division of Nuclear Security, IAEA) and Ms Margarita Kalinina-Pohl (James Martin Center for Nonproliferation Studies, USA). Mr Konstantinov invited interested INSEN members willing to serve as reviewers and judges of the essays to complete a survey, indicating in which nuclear security area and in which official UN languages they would be able to assess the submitted essays.

This was followed by the reports of WG Chairs on the 2019-2020 Action Plans, and by a summary of the final report by the INSEN Chair. Mr Sterba thanked the INSEN leadership and INSEN members for the productive week and their valuable contributions to the network. He also thanked the Secretariat for their ongoing support and help behind the scenes. Finally, Mr Sterba asked INSEN members to stay in touch with their respective WG Chairs by email as well as to keep their member pages on the NUSEC portal up-to-date. He wished all participants safe travels and closed the meeting at 12:30h.

Attachment 1
2019 Annual Meeting

Agenda

8-12 July 2019, Vienna International Centre (VIC), Pressroom (M-Building)
Breakout rooms: M5, M7

Day 1, Monday, 08 July 2019

- 09:00 – 10:00 **Registration in front of the Pressroom**
C. Schmitt, IAEA
F. Andrian, IAEA
- 10:00 – 10:15 **Opening remarks**
J. Tierney, IAEA
- 10:15 – 10:30 **In memoriam: Professor El Hassan Sayouty**
- 10:30 – 10:45 **Adoption of the agenda, objectives of the meeting, introduction of new vice chairs, introduction of new members**
J. Sterba, INSEN Chair, TU Wien, Austria
- 10:45 – 11:00 **Report on the 2019 INSEN Leadership Meeting**
S. Udum, outgoing INSEN Chair, Turkey
- 11:00 – 11:30 **Progress reports from outgoing Working Group Chairs**
WG I D. Dimitrov, UNWE, Bulgaria
WG II A. Goel, Amity University, India
WG III A. Kuye, University of Port Harcourt, Nigeria
- 11:30 – 12:00 **IAEA Nuclear Security Education Activities**
D. Nikonov, IAEA
- 12:00 – 13:30 *Group picture and lunch break*
- 13:30 – 15:00 **Presentations from INSEN members**
A. Timoshchenko, Belarus State University, Belarus
V. Verkhoturova, TPU, Russian Federation
H. Alhazmi, NAUSS, Saudi Arabia
- 15:00 – 15:30 *Coffee break*

- 15:30 – 17:00 **Presentations from INSEN members**
I. Khripunov, Stimson Center, USA
I. Abdul Rahman, UKM, Malaysia
T. Bibik, KPI, Ukraine
M. Macori, THB, Germany
- 17:00 **Summary of Day 1**
- 17:30 – 19:00 **Reception**
Internet corner, M Building

Day 2, Tuesday, 09 July 2019

- 09:00 – 10:30 **Panel: Assessing the Impact of Nuclear Security Education**
D. Andrade, IPEN, Brazil
D. Dimitrov, UNWE, Bulgaria
A. Goel, Amity University, India
A. Kuye, University of Port Harcourt, Nigeria
M. Kalinina-Pohl, CNS, USA
- 10:30 – 11:00 *Coffee break*
- 11:00 – 12:30 **Panel: The Impact of INSEN on Nuclear Security at National, Regional and International Level**
J. Sterba, TU Wien, Austria
O. Hakam, UIT, Morocco
T. Majeed, PIEAS, Pakistan
J. Larkin, WITS, South Africa
S. Udum, HU, Turkey
I. Khripunov, Stimson Center, USA
- 12:30 – 13:30 *Lunch break*
- 13:30 – 15:00 **Panel: Women in Nuclear Security**
Keynote: *M.-A. Hayward, DDG-MT, IAEA*
Panel: *O. Hakam, UIT, Morocco*
M. Sultan, SASSI, Pakistan
R. Hirst, UTK, USA
R. Evans, WINS
E. Sokova, VCDNP
- 15:00 – 15:30 *Coffee break*
- 15:30 – 16:00 **Presentations from INSEN Members**
S. Udum, Hacettepe University, Turkey and Z. Homan, KCL, UK
- 16:00 – 16:30 **New INSEN NUSEC Portal**
B. Zhu, IAEA
D. Nikonov, IAEA
F. Andrian, IAEA
- 16:30 – 17:00 **IAEA E-Learning: Updates and Opportunities**
I. Suh, IAEA
- 17:00 **Summary of Day 2**

Day 3, Wednesday, 10 July 2019

- 09:00 – 09:30 **INSEN Terms of Reference: Capturing the Network Evolution**
J. Sterba, INSEN Chair, Austria
- 09:30 – 10:00 **Update on the Revision of INSEN Teaching Materials**
A. Frahi-Amroun, USTHB, Algeria
M. Schouwenburg, TU Delft, Netherlands
- 10:00 – 10:30 **EU Activities to Support Nuclear Security through Regional Networks**
V. Ranguelova, EEAS-Vienna, EC
- 10:30 – 11:00 *Coffee break*
- 11:00 – 12:30 **Working Group Breakout Session: Implementation and Planning**
Led by WG chairs
WG I – Pressroom
WG II – M5
WG III – M7
- 12:30 – 13:30 *Lunch break*
- 13:30 – 15:00 **Working Group Breakout Session: Implementation and Planning**
Led by WG chairs
WG I – Pressroom
WG II – M5
WG III – M7
- 15:00 – 15:30 *Coffee break*
- 15:30 – 17:00 **Working Group Breakout Session: Implementation and Planning**
Led by WG chairs
WG I – Pressroom
WG II – M5
WG III – M7
- 17:00 **Summary of Day 3**

Day 4, Thursday, 11 July 2019

- 09:00 – 10:30 **Mini-FDC: Developing and Running Exercises: *Application of Shapash 3D Facility to Insider Threat Exercise***
R. Larsen, IAEA
- 10:30 – 11:00 *Coffee break*
- 11:00 – 12:30 **Mini-FDC: IAEA Incident and Trafficking Database (ITDB): *Building and Using Effective Case Studies***
J. Garcia Sainz, IAEA
- 12:30 – 13:30 *Lunch break*
- 13:30 – 15:00 **Regional Breakout Session**
Pressroom
M5
M7
- 15:00 – 15:30 *Coffee break*
- 15:30 – 17:00 **Regional Breakout Session**
Pressroom
M5
M7
- 17:00 – 17:30 **Summary of Day 4**

Day 5, Friday, 12 July 2019

- 09:00 – 10:00 **Mini-FDC: Detection of Nuclear and other Radioactive Materials
Out of Regulatory Control**
T. Pelletier, IAEA
- 10:00 – 10:30 **Preparations for the 2020 INSEN Leadership and Annual Meetings**
J. Sterba, INSEN Chair
- 10:30 – 11:00 *Coffee break*
- 11:00 – 11:15 **ICONS 2020 and the International Essay Competition**
A. Konstantinov, IAEA
M. Kalinina-Pohl, CNS, USA
- 11:15 – 11:45 **Reports of Working Group Chairs on 2019-2020 Action Plans**
WG I
WG II
WG III
- 11:45 – 12:00 **INSEN Chair Report**
J. Sterba, INSEN Chair
- 12:00 – 12:30 **Final remarks, Q&A, and closing of the meeting**
D. Nikonov, IAEA
J. Sterba, INSEN Chair