

INSEN International Nuclear Security Education Network

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

IAEA Headquarters, Vienna, Austria

24th – 28th July 2017

Chairman's Report

This report represents the views of the Chairman and does not necessarily represent the views of the IAEA or of INSEN

BACKGROUND	3
OPENING	4
OBJECTIVES OF THE MEETING ITEMS DISCUSSED, FINDINGS AND RECOMMENDATIONS	
DAY ONE	4
DAY TWO	5
DAY THREE	6
IMPLEMENTATION OF WORKING GROUP ACTION PLANS	6
Working Group 1	6
Working Group II	6
Working Group III	7
Regional group breakout sessions	.7
Asia	7
Africa	7
DAY FOUR	8
2017 – 2018 Action Plans	8
Working Group I	8
Working Group II	8
Working Group III	9
DAY FIVE	9
DISCUSSION AND RECOMMENDATIONS 1	10
AGENDA 1	L 2

Report by Mr James Larkin Chairman of the International Nuclear Security Education Network (INSEN)

IAEA Headquarters, Vienna

24-28 July 2017

The Annual Meeting of the International Nuclear Security Education Network (INSEN) was held at the International Atomic Energy Agency (IAEA) Headquarters, Vienna, Austria, 24th-28th July 2017. Attendance included 87 listed participants. (The list of participants is included as Attachment 2).

BACKGROUND

The need for human resource development programmes 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 2013, give high priority to assisting States in establishing educational programmes in nuclear security in order to ensure the sustainability of nuclear security improvements. The current IAEA Nuclear Security Plan covering 2014-2017 emphasizes the importance of considering existing capacities at regional, national and international levels, while designing nuclear security academic programmes. 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 Programme in Nuclear Security* that consists of a model of a Master of Science (M.Sc.) and a Certificate Programme in Nuclear Security. This guide was published as *IAEA Nuclear Security Series No.* 12 – Educational Programme in Nuclear Security¹ (NSS 12) in April 2010 and aims at assisting universities or other educational institutes to develop academic programmes in nuclear security.

In order to 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 programmes/courses of different universities worldwide, to share lessons learned in the development and implementation of nuclear security academic programmes and to establish a collaboration network among universities which are providing nuclear security education or which are interested in starting an academic programme/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

OPENING

The meeting was opened by Mr Raja Abdul Aziz Raja Adnan, Director of the IAEA's Division of Nuclear Security, who welcomed the participants to this Annual meeting. Mr Raja Adnan congratulated the members of the Network on their accomplishments, thanked them for their commitment and contributions to the nuclear security education, and encouraged them to strive to improve continuously in their endeavours. He also informed them of the latest developments in nuclear security, including the coming into force of the 2005 Amendment to the Convention on Physical Protection of Nuclear Materials and the upcoming 2017 International Conference on Physical Protection 13th -17th November 2017. Then, the incoming INSEN Chairman, Mr James Larkin (The University of the Witwatersrand, Johannesburg, South Africa), extended his welcome to all participants, outlined the objectives and introduced the draft agenda for the meeting, which was adopted as presented. Mr Larkin also thanked the outgoing chairs and the IAEA for their diligent work and support of INSEN. The meeting agenda is attached to this report as Attachment 1.

OBJECTIVES OF THE MEETING

The overall objectives of the meeting were:

- To review the progress of the action plan set out at the last annual meeting
- To develop a plan for the next year, for the network and for the working groups
- To learn about planned and ongoing programmatic activities implemented by INSEN members
- To outline and plan for several activities jointly with the NSSC Network via joint *Ad Hoc* Groups
- To discuss the plans for the 2018 INSEN Leadership and Annual Meetings

ITEMS DISCUSSED, FINDINGS AND RECOMMENDATIONS

Day One

After an introductory session, outgoing chairs of WGs delivered short status updates on the implementation of their respective action plans, including development of new and revision of current teaching materials, ongoing and planned faculty development courses, and achievements in the promotion of nuclear security education and INSEN. The Chairman thanked all outgoing Chairs for their contribution and commitment, and welcomed the incoming vice-chairs for the Network and for the Working Groups. Ms Sednem Udum (Hacettepe University, Turkey) was nominated as the new INSEN Vice-Chair. Mr Dimitar Dimitrov (University of National and World Economy, Bulgaria) was nominated as the new Vice Chair of WG I. Ms Alpana Goel (Amity University, India) was nominated as new Vice Chair of WG II. Mr Ayo Kuye (Centre for Nuclear Energy Studies; University of Port Harcourt, Nigeria) was nominated as Vice Chair for WG III.

Ms Oum Keltoum Hakam, the outgoing INSEN chair, then provided a report on the 2017 INSEN leadership meeting, which was held in Vienna in February 2017. The report is available to download at the NUSEC portal.

This was followed by a detailed update and review of the INSEN and NUSEC Portal by Ms Alessia Durczok, IAEA.

The following sessions included a number of presentations from INSEN members on their programmatic activities:

- 1. Masters in nuclear security (MiNS) at UNWE, D.Dimtrov, Bulgaria
- 2. Nuclear security activities at the Centre for Applied Radiation Science and Technology (CARST), *T. Kupi, South Africa*
- 3. MiNS at TH Brandenburg, *M.Macori and D. Cherkashin, Germany*
- 4. Challenges in the use of the Systematic Approach in nuclear security education. *M.Kofi, Egypt*
- 5. Master of Science in nuclear security, safety and safeguards at UKM, *I.Adbul Rahman, Malaysia*
- 6. Institute for Nuclear Materials Management (INMM) as the means to promote INSEN objectives, *C. Crawford, USA*
- 7. Annual progress report of nuclear science and technology, Amity University, A.Goel, India
- 8. Curriculum development for Masters programme in nuclear security at UGM, Sihana, Indonesia
- 9. New Masters programme and new supporting research line in nuclear forensics in Kenya, *K. Angeyo, Kenya*

Electronic versions of these reports are available for download on the INSEN webpage.

The day was rounded out with a reception in the Mozart Room, VIC Restaurant that allowed the members of INSEN to mingle and informally chat with the leadership of the NSSCs who were holding their annual leadership meeting concurrently with INSEN.

Day Two

Day two of the meeting was taken up with a topical seminar entitled "Introduction to Nuclear Forensics" presented by D. Smith and J. Davydov, IAEA. As well as an informative set of presentations given by the two experts, there was also a useful interactive exercise based on a reallife scenario that took the participants through a forensics case. All the material presented is available for download on the INSEN portal.

The rest of the afternoon was taken up with presentations on the following:

- Revision of Nuclear Security Series No. 12 "Model Academic Curriculum in Nuclear Security", presented by D. Nikonov, IAEA.
- The next presentation was "IAEA E-Learning Modules and other Tools" presented by I. Suh, IAEA. This was an update on the latest on-line educational tools available to all member states.
- The final event of the day was 'Women in Nuclear Security: Sharing Experiences and Perspectives".

This was a 'round table discussion' lead by Ms O. Hakam, Morocco. The discussion highlighted some of the obstacles placed in the way of women, which in certain circumstances prevent them from reaching their true potential. It is a sobering thought that in 2017, the gender of an individual can be an impediment to their career advancement, and that it is still necessary to take active steps to address this issue within the work place. It should be noted that the leadership of INSEN strives to actively implement gender equality and where possible achieve gender parity within the management team.

Day Three

The morning started with a joint session with the Nuclear Security Support Centres (NSSC) Leadership. Topics covered in this meeting were;

- Update on NSSC Network activities
- Discussion on strategy and objectives for *ad hoc* groups
- Review of *ad hoc* group draft proposals.

After this session, two presentations were given to the participants of INSEN:

- 1. Mr I. Khripunov gave a presentation based on his work carried out in the recent past "Teaching Nuclear Security Culture: Curriculum and Methodologies.
- 2. Writing on nuclear security for academic publications, R Hirst, USA.

Russell Hirst is a member of the English Faculty at the University of Tennessee, Knoxville and is also the editor of the International Journal of Nuclear Security², and as such is ideally placed to be able to give an appropriate presentation either as an introduction to, or a refresher on, academic writing, the life blood of many in attendance at the meeting.

After the lunch break, the members broke into the various working groups defined in the terms of reference of INSEN, to look at the results of the implementation of the 2016-2017 action plans developed by each of the working groups.

The following is just a high-level summary of each of the output by the working groups. The detailed reports are available on the INSEN portal

Implementation of Working Group Action Plans

Working Group 1

Outgoing chairman: Mr Ed Waller, Canada

In view of the impending release of the NSS12 Revision, a concerted effort was made to try and ensure that there is a complete set of English version teaching materials for all of the current modules identified in the current version of NSS12, work that can be 'banked' and regardless of how NSS12 is revised there is appropriate material available for use.

The following material has been completed in the preceding 12 months;

- 1. New teaching materials for NS 1.1 and NS 1.5 (Introduction to Nuclear Security
- 2. New teaching materials for NS2 (Legal Framework)
- 3. New teaching materials for NS13 (NMAC)
- 4. New teaching materials for NS14 (Vulnerability assessment)
- 5. New teaching materials for NS 15 (Risk assessment)
- 6. New teaching materials for NS19 (Nuclear forensics)

Working Group II

Outgoing chair: Ms Sebnem Udum, Turkey

² http://trace.tennessee.edu/ijns/

The following priorities were identified by the working group;

- Work on the organization and curriculum design of PDC/FDCs
- Emphasis on background topics for nuclear security
- Work on effective teaching methods for a variety of academic/professional backgrounds
- Responding to requests for PDC/FDCs
- Communication amongst members
- NSSC and INSEN links
- Role of education in developing nuclear security culture

A number of universities continue to take a leading role in the development of various academic/professional programmes, with a number of 'newcomers' also starting to develop their own programmes.

Working Group III

Outgoing chairman: Mr Nitin Puri

The efforts of the working group continue to be focused on the enlargement of the membership and to continue to disseminate information about INSEN and its various functions. Membership of INSEN continues to grow, as can be seen on the portal.

Regional group breakout sessions

For the final session of the day, the members of INSEN reorganised them into several Regional areas to look at different ways regional programmes might be developed to the mutual benefit of all. As always, the Africa region was very vibrant and engaged with the issues. As above a brief summary of the various regional discussions is given here. The full reports can be found on the INSEN portal.

Asia

Moderator: Ms Maria Sultan, Pakistan

A number of key areas were identified that the group felt that they should focus on, these were:

- 1. Student Exchange Program (Placement gap)
- 2. To initiate cross-border research (Fellowship Programs)
- 3. Initiate Training programs
- 4. Individual expertise availability of training the INSEN members (Preparing Catalogues)
- 5. Sharing of lab facilities and R &D possibilities with partner institutions
- 6. Creating regional platform for publications (Asian Journal for Nuclear Security)
- 7. E-series and Webinar for distance learning and collaboration among INSEN embers
- 8. Sharing of learning management systems (Universalization of credit systems)
- 9. Faculty Development programme
- 10. Development of case studies for nuclear security in Asia

A detailed plan of action was developed and will be implemented in a phased approach.

Africa

Moderator: Mr Mostafa Kofi, Egypt

Priority topics for the attendees as for nuclear security education in African region are as followings: 1- Need for regional workshops on nuclear security for technical and non-technical professionals. 2- Need for workshops on curriculum development for NS education, on NS priority topics such as:

- a. Nuclear security culture
- b. Nuclear security culture assessment
- c. Insider threat mitigation
- d. Systematic approach to training
- e. Specific country needs such as security of both medical and industrial radioactive sources.
- f. Cyber-security and information security
- 3- Need for catalogue of workshops and workshops materials on NS education priority topics.

4- Need for catalogue of case studies in NS education, also thought about sharing this need with INSEN Working group II

5- Need for a database for Nuclear Security subject matter Expert s that can assist and give advice and lectures.

6- To increase number of INSEN members from policy background.

7- To foster intersecting of NSSC and INSEN at each national level for African countries

Day Four

The morning of day four was spent with the working groups developing their new action plans for the forthcoming year (2017-2018), these can all be found on the INSEN portal. A brief summary appears below:

2017 – 2018 Action Plans

Working Group I

Chair: Ms Akila Frahi-Amroun, Algeria.

The working group identified the following actions to be prioritized in the coming year;

- 1. Development of a Quality Management Guidance document
- 2. Establishment, in cooperation with the IAEA of a process for how to peer review educational material (produce a document called "INSEN Procedures for production of education and training materials)
- 3. Peer review of NS15 teaching materials (slides)
- 4. Development of teaching material for NS 16a, NS16b, and NS20
- 5. Development of supplemental teaching material related to physical protection systems (NS7 and NS8)

Working Group II

Chairman: Mr Luca Lentini, U.K.

The working group identified the following actions to be prioritized in the coming year;

- 1. Develop a repository of nuclear security case studies
- 2. Case studies on different national approaches to teaching nuclear security culture
- 3. Review of existing case studies available on the portal
- 4. Topical seminar on cyber security during the 2018 INSEN meeting, in the 'train the trainer' format with reference to teaching methods and curriculum design approaches
- 5. Report on effective teaching methods for a variety of academic/professional backgrounds

Working Group III

Chair: Ms Margarita Kalinina-Pohl, USA

A number of specific tasks were identified that need to be addressed, these include;

- 1. Use regional networks/events/activities and personal communications to promote INSEN. Priority regions: Latin America and Africa, and other countries that are not represented or are under-represented.
- 2. Promote the use of the INSEN Portal
 - a. FDCs (Faculty development courses)
 - b. Summary of members' nuclear security related activities (Conferences, publications etc.)
 - c. Encourage members to upload information on INSEN portal about
 - i. Conferences
 - ii. Publications
 - iii. Teaching materials
- 3. Establish and maintain regular channel of communication with WG1 & WGII
- 4. Support activities in identifying and sharing nuclear security core competencies
- 5. Organize a panel on good practices in nuclear security education and raising awareness among other university programmes at the next annual ISEN meeting in 2018 (Invite WINS)
- 6. Welcome information sheet for new INSEN members
- 7. Career opportunities in nuclear security
- 8. Coordinate INSEN booth at Physical Protection Conference (Nov 2017)

The following recommendations were also made:

- 1. Development of the annual meeting evaluation survey
- 2. Workshop on teaching tools/methodologies
- 3. INSEN booth at the Physical Protection Conference (prepare a list of INSEN members attending the conference, and their availability for the INSEN booth)
- 4. A strategic review of professional societies/association which could be used to promote INSEN (American Nuclear Society, Women in Nuclear, INMM, etc.)
- 5. Financial support for publications by INSEN members in professional journals
- 6. Organize student essay competition on nuclear security (prize: a winner will present his/her work at an annual INSEN meeting). Topic: a student perspective on nuclear security education

After lunch, the first session back was a presentation on "The development of table-top exercises (TTXs) given by Eric Wallace, USA.

The final session of Day Four was a topical seminar on "NMAC as a tool for preventing and protecting against the insider threat" by Robert Larsen, IAEA. This was a useful presentation for many in the audience which brought up a number or pertinent issues relevant to the members of INSEN.

Day Five

The final day of the annual meeting was taken up by report backs from the working groups on their proposed plans of action for the coming 12-month period (2017-2018). After this there was a brief discussion on the dates for the forthcoming INSEN Leadership meeting and then the next Annual meeting. The final reports presented were those from the *ad hoc* groups that have been established

jointly with members of the NSSC. These reports are also available on the INSEN portal. The final actions of the day were the closing comments from the Chairman of INSEN, After the summary by the INSEN Chair, Mr Dmitriy Nikonov of the Division of Nuclear Security thanked on behalf of the IAEA, the Chairs and the participants for their excellent contribution to the meeting's success. The meeting was adjourned at 12.10 P.M Friday 28th July 2017.

Discussion and Recommendations

The annual meeting was both engaging and quite fruitful in terms of the output and action plans developed by the working groups and regional groups. A number of recurring themes arose both during formal discussion periods and in less formal discussions with one on one discussions with various participants, both new and old. The first of these was how it would be possible to get closer collaboration with the country NSSCs. There was much discussion about the lack of engagement between the national representative of the NSSC and their counterparts in INSEN.

Recommendation 1.

A list be drawn up of the national point of contact from each NSSC and this be paired with the members of INSEN from that country and circulated to both parties. This will need to be done electronically as unfortunately the annual meetings of the NSSCs and INSEN are now out of step and access to both portals on NUSEC is very limited. It will however allow the various participants to open lines of communication.

A second issue is, as the membership of INSEN continues to grow, it has now become impractical to offer all newcomers and those members who wish to report back on their achievements of the past 12 months an opportunity for an oral presentation. The opportunity to network with one's international peers is very important, as it offers many participants, particularly from many of the 'new comer' countries chances to talk with organisations more well established and to seek out the various opportunities that INSEN encourages.

Recommendation 2.

A leaf be taken out of conferences, and a number of poster sessions be organised for each of the participants to show case their achievements, discuss research output and opportunities, and also seek/offer faculty/student exchange. This would be relatively easy to organise and could be done over a number of lunchtime periods.

A third and very important issue, that is concern both for the NSSCs and INSEN is the matter of Human Resource Development (HRD) in Nuclear Security. This is actually a very big topic, but might be something that various members of INSEN may wish to try and tackle in conjunction with their counterparts within a NSSC. In what was a very detailed and frankly somewhat intimidating presentation from Ms Labyntseva, RF, a detailed plan was laid out for the *ad hoc* committee on HRD. This is perhaps too ambitious for a committee that only meets very infrequently, however it might be possible to break this plan down into more manageable portions which the committee might feel able to tackle.

Recommendation 3.

The ad hoc committee on HRD attempt to develop a list of core competencies for a number of nuclear security related jobs, whilst limiting themselves only to those nuclear security specific competencies

within the job. This would probably consist of 'mining' a number of on-line resources and put them in language understandable to all INSEN members.

More broadly INSEN has reached a point in its existence where it might be argued that it has almost achieved some of the most important goals set for it when the organization was established, namely the development of a complete set of teaching materials necessary to teach nuclear security. The influence and energies of the 'founding fathers' and their successors of the organisation are clear to see. INSEN has gone from something like 28 organizations in 2010 to the point where there are more than 160 organizations who are currently members.

INSEN is governed by a number of principles that were developed over a number of years and basically define the limit of what the group does. Is it time to revisit these principles and look to see if it is both desirable and appropriate to modify these defining principles and allow us to broaden our scope of work? Are there areas in which INSEN can make an impact that currently we are not working in?

Signed: Chairman, INSEN.

James Larkin 3rd August 2017

Attachment 1

AGENDA

International Nuclear Security Education Network (INSEN)

2017 Annual Meeting

24-28 July 2017, Vienna International Centre (VIC), Boardroom A (M-Building)

Day 1, Monday, 24 July 2017

08:30 – 09:30	Registration in Board Room A I. Barrientos, IAEA
09:30 – 09:45	Opening remarks R. Raja Adnan, Director, Division of Nuclear Security, IAEA
09:45 – 10:15	Adoption of the agenda, objectives of the meeting, introduction of new Vice Chairs, introduction of new members J. Larkin, INSEN Chair, South Africa
10:15 – 11:00	Progress reports from outgoing Working Group Chairs WG I E. Waller, Canada WG II S. Udum, Turkey WG III N. Puri, India
11:00 – 11:30	Coffee break
11:30 – 11:45	Report on the 2017 INSEN Leadership Meeting O. Hakam, outgoing INSEN Chair, Morocco
11:45 – 12:15	INSEN and NUSEC Portal: an Overview and Updates A. Durczok, IAEA
12:15 – 12:45	 Presentations from INSEN members on programmatic activities: 1. Master in Nuclear Security (MiNS) at UNWE D. Dimitrov, Bulgaria 2. Nuclear Security Activities at the Centre for Applied Radiation Science and Technology M. Mathuthu & T. Kupi, South Africa
12:45 – 14:00	Group picture and lunch break
14:00 - 15:00	Presentations from INSEN members on programmatic activities: 3. MiNS at TH Brandenburg <i>M. Macori, Germany</i>

	4. Challenges in the Use of Systematic Approach in Nuclear Security Education in Developing Countries <i>M. Kofi, Egypt</i>
	5. Master of Science in Nuclear Security, Safety and Safeguards at UKM
	I. Abdul Rahman, Malaysia
15:00 – 15:30	Coffee break
15:30 – 17:00	 Presentations from INSEN members on programmatic activities: 7. INMM as the Means to Promote INSEN Objectives C. Crawford, USA 8. Annual progress report of Nuclear Science and Technology, Amity University A. Goel, India 9. Curriculum development for Master Program in Nuclear Security at UGM Sihana, Indonesia 10. New Master programme and New Supporting Research Line in Nuclear Forensics in Kenya K. Angeyo, Kenya
17:00	Summary of Day 1
17:30 – 19:00	Reception Mozart Room, VIC Restaurant

Day 2, Tuesday, 25 July 2017

09:00 - 12:00	Topical Seminar: Introduction to Nuclear Forensics D. Smith and J. Davydov, IAEA (Coffee break as needed)
12:00 – 13:00	Lunch break
13:00 – 15:00	Topical Seminar: Introduction to Nuclear Forensics D. Smith and J. Davydov, IAEA
15:00 – 15:30	Coffee break
15:30 – 16:00	Revision of Nuclear Security Series No. 12 "Model Academic Curriculum in Nuclear Security" D. Nikonov, IAEA
16:00 – 16:30	IAEA E-Learning Modules and Other Tools I. Suh, IAEA
16:30 – 17:30	Women in Nuclear Security: Sharing Experiences and Perspectives O. Hakam, Morocco

17:30 Summary of Day 2

Day 3, Wednesday, 26 July 2017

09:00 – 10:00	Joint session with NSSC Leadership Update on NSSC Network Activities (20 min) Discussion on Strategy & Objectives for Ad Hoc Groups (20 min) Review of Ad Hoc Group Draft Proposals (20 min)
10:00 - 11:00	Teaching Nuclear Security Culture: Curriculum and Methodologies <i>I. Khripunov, USA</i>
11:00 – 11:30	Coffee break
11:30 – 12:30	Writing on Nuclear Security for Academic Publications R. Hirst, USA
12:30 – 13:30	Lunch break
13:30 – 15:00	Working Group Breakout Session: Implementation of the 2016-2017 Action Plans Led by WG chairs WG I – Boardroom A WG II – M4 WG III – M5
15:00 – 15:30	Coffee break
15:30 – 17:00	Regional Groups Breakout Session
17:00 Day 4, Thursday, 27 Jul	Summary of Day 3 <u>y 2017</u>
09:00 – 12:00	Working Group Breakout Session: Developing the 2017-2018 Action Plan Led by WG chairs WG I – Boardroom A WG II – M4 WG III – M5
12:00 – 13:00	Lunch break
13:00 – 13:30	Developing Table Top Exercises for Nuclear Security Education <i>E. Wallace, USA</i>
13:30 – 17:00	Topical Seminar: NMAC as a Tool for Preventing and Protecting against Insider Threat R. Larsen, IAEA (Coffee break as needed)

17:00 Summary of Day 4

Day 5, Friday, 28 July 2017

09:00 – 10:00	Reports of Working Group Chairs on 2017-2018 Action Plans WG I A. Frahi-Amroun, Algeria WG II L. Lentini, UK WG III M. Kalinina-Pohl
10:00 – 10:30	Preparations for the 2018 INSEN Leadership and Annual Meetings J. Larkin, INSEN Chair
10:30 – 11:00	Coffee break
11:00 – 11:45	Ad Hoc Group Reports Human Resource Development M. Labyntseva, RF Nuclear Security Culture I. Khripunov, USA Coordinated Research Activities O. Hakam, Morocco
11:45 – 12:00	INSEN Chair's Report J. Larkin, INSEN Chair
12:00 – 12:30	Final remarks, Q&A, and closing of the meeting D. Nikonov, IAEA J. Larkin, INSEN Chair