International Conference on Physical Protection of Nuclear Material and Nuclear Facilities

13–17 November 2017, Vienna, Austria

Summary of an International Conference

IAEA
International Atomic Energy Agency

INTERNATIONAL CONFERENCE ON PHYSICAL PROTECTION OF NUCLEAR MATERIAL AND NUCLEAR FACILITIES

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PROCEEDINGS SERIES

INTERNATIONAL CONFERENCE ON PHYSICAL PROTECTION OF NUCLEAR MATERIAL AND NUCLEAR FACILITIES

SUMMARY OF AN INTERNATIONAL CONFERENCE
ORGANIZED BY THE
INTERNATIONAL ATOMIC ENERGY AGENCY
AND HELD IN VIENNA, 13–17 NOVEMBER 2017

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FOREWORD

The International Conference on Physical Protection of Nuclear Material and Nuclear Facilities was organized by the IAEA and held in Vienna on 13–17 November 2017. The conference attracted more than 650 participants from 95 IAEA Member States and 10 organizations.

The conference was convened to foster the exchange of practices and experiences relating to the security of radioactive material under regulatory control in use, transport and storage, and to the detection of nuclear and other radioactive material out of regulatory control.

This publication contains the President's summary of the conference, statements from the opening and closing sessions, and an outline of the conference programme. The attached CD-ROM accompanying this publication contains the full conference programme, the list of conference participants, and a selection of papers and presentations from the conference.

The IAEA gratefully acknowledges the cooperation of all the participants, in particular the support of INTERPOL, the World Institute for Nuclear Security and the World Nuclear Transport Institute. The IAEA officers responsible for this publication were K. Brooks and R. Gordon of the Division of Nuclear Security.

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PRESIDENT'S SUMMARY OF THE CONFERENCE

Introduction

The International Conference on Physical Protection of Nuclear Material and Nuclear Facilities was convened by the IAEA at its Headquarters in Vienna from 13 to 17 November 2017, in cooperation with the World Institute for Nuclear Security (WINS), the World Nuclear Transport Institute (WNTI) and the International Criminal Police Organization (INTERPOL).

The purpose of the conference was to foster the exchange, among competent authorities, facility operators, shippers and carriers, and technical support organizations, of information, practices and experiences related to the physical protection of nuclear material and facilities, including nuclear material in transport. The conference provided a forum to:

- Promote universalization of the Convention on the Physical Protection of Nuclear Material (CPPNM) and its 2005 Amendment and enhance the understanding of INFCIRC/225/Rev.5;
- Share experiences with the development of physical protection regulatory frameworks and requirements for nuclear facilities and nuclear material, including during transport;
- Exchange information on the use of a threat-based, risk-informed approach for the protection of nuclear material in use, storage and transport, and for nuclear facilities;
- Exchange information on how to address evolving threats;
- Exchange information and experiences regarding the planning, establishment, maintenance and sustainment of physical protection systems and measures, including computer security;
- Exchange information on methodologies and techniques to assess the effectiveness of physical protection measures and systems;
- Discuss common technical proposals for the purpose of upgrading the physical protection of nuclear material and facilities;
- Discuss the interface between nuclear material accountancy and control (NMAC), on the one hand, and the physical protection of nuclear material in use, storage and transport, on the other;
- Share experiences related to how safety interfaces with security;
- Share experiences related to the assessment and enhancement of nuclear security culture;
- Discuss planning and preparedness for, and response to, nuclear security events at nuclear facilities and during the transport of nuclear material (contingency plans);
- Share the experience gained as a result of International Physical Protection Advisory Service (IPPAS) missions and highlight the role of this service in enhancing the physical protection of nuclear material in use, storage and transport and of nuclear facilities worldwide; and
- Facilitate cooperation among all stakeholders at the national or international levels, as applicable.

The conference was attended by more than 650 participants from 95 Member States and 10 organizations.

In their opening remarks both the Conference President, Ms Kathleen Heppell-Masys (Canada), and the IAEA Deputy Director General and Head of the Department of Nuclear Safety and Security, Mr Juan Carlos Lentijo, underlined the importance of this conference in assisting Member States in implementing a comprehensive nuclear security regime. They recognized the key role that physical protection of nuclear material and nuclear facilities plays in nuclear security — even for States that do not have such material or facilities on their territory — and stressed the importance of working towards the universalization of the CPPNM and its 2005 Amendment. They emphasized the need to continue to strengthen nuclear security worldwide and remain vigilant against emerging and evolving threats.

DDG Lentijo also reaffirmed the principle that the responsibility for nuclear security within a State rests entirely with that State, while recognizing the importance of international cooperation and the central role of the IAEA in this regard. He highlighted several major activities of the Agency in this area, such as IPPAS missions as well as activities to support Member States in the areas of nuclear security culture, computer security and facility contingency plans. He also stressed the need for Member States to take account of new and emerging threats, the particular challenges posed by insider threats, and the need to define and assess threats and consequences using a graded approach.

The Conference President set out the objectives of the conference as enhancing the understanding and application of the recommendations contained in the Nuclear Security Series No. 13 'Nuclear Security Recommendations on Physical Protection of Nuclear Material and Nuclear Facilities' (INFCIRC/225/Rev.5) ,

and assisting Member States in the implementation of a comprehensive physical protection regime. She also underlined the importance of the CPPNM and its 2005 Amendment, encouraging further Member States to become Parties to the Amendment, and stressed the importance of an effective nuclear security culture that should permeate all organizations at all levels. She emphasized that the responsibility for achieving a strong security culture begins with leadership in the respective States.

In their opening remarks on behalf of the cooperating organizations, Mr Roger Howsley (WINS), Mr Ben Whittard (WNTI) and Mr John Buchanan (INTERPOL) stressed the common goal of strengthening nuclear security while each highlighted specific ways in which their own organizations contributed towards that goal. Mr Buchanan described some of INTERPOL's specific initiatives to strengthen the contributions of law enforcement to nuclear security, emphasizing capacity development and information sharing activities. Mr Whittard emphasized the roles of anticipation and innovation as ways in which operators and States met the special challenges of protecting nuclear material during transport, where some of the more conventional physical protection methods could not be applied. Mr Howsley stressed that effective nuclear security fundamentally depends on competent professionals applying the best practices, and highlighted the contribution of WINS in promoting certified training in nuclear security management. He especially mentioned the need to strengthen the contribution of women in nuclear security.

Following the opening plenary, the conference was organised around six main panel sessions involving national and international experts discussion on broad themes, an interactive scenario-based policy discussion, and thirty-nine specialized technical sessions. The programme also included interactive content presentations and poster sessions, an exhibition and four side events.

Working with the session co-chairs, rapporteurs recorded the main conclusions and key issues from each main panel session and technical session. This President's Report draws on the rapporteurs' reports and highlights the main conclusions and key issues of the conference as a whole. A summary version of this report was presented in the final plenary session of the conference. While every effort has been made to ensure that this Report is an accurate and balanced reflection of the conference, ultimately it is the President's and not a consensus report.

Main Panel Sessions

The six main panel sessions of the conference addressed not only frameworks for international cooperation but also the development and strengthening of national nuclear security regimes. They focused on:

- The universalization of the CPPNM and its 2005Amendment,
- The implementation of the CPPNM and its 2005 Amendment,
- Legislative and regulatory frameworks for the physical protection of nuclear material in use, storage and transport and for nuclear facilities,
- Developing and sustaining a physical protection regime for nuclear material in use, storage and transport and for nuclear facilities,
- Protection against unauthorized removal of nuclear material during use, storage and transport and sabotage of nuclear material and nuclear facilities, and
- International and regional cooperation.

The main conclusions of these sessions are summarized in the following five sections.

Universalization and Implementation of the CPPNM and its 2005 Amendment

The first two main panel sessions addressed the CPPNM and its 2005 Amendment, the first focusing on universalization and the second on implementation. It was clear from the discussions in both sessions that the two aspects go hand-in-hand.

During the first session, speakers emphasized the importance of not only universal adherence, but also full implementation of the instruments. Speakers underlined that adherence to and implementation of the CPPNM and its 2005 Amendment are equally important for States without nuclear material on their territory in order to leave no safe havens for malicious actors. They reminded Parties to the CPPNM and Amendment of the importance of submitting their national laws and regulations giving effect to the Convention, in accordance with Article 14.1 of the Convention, in order to share experiences and good practices.

The participants recognized that adherence to the Amendment was complex and a long process and noted with appreciation the work of the IAEA in promoting the universalization and implementation of the CPPNM and its Amendment, including through conferences, workshops and meetings of the Points of Contact under the

CPPNM and its Amendment, as well as in providing guidance and offering services such as IPPAS missions and legislative assistance, upon request.

During the second session, focusing on implementation, speakers recognized that the Amendment encompasses the essential elements of physical protection of nuclear material and nuclear facilities. Key themes of the session were: the importance of international cooperation in nuclear security, since a nuclear security event anywhere could have global implications; the challenge of balancing confidentiality with information sharing; the need for appropriate and targeted resourcing for nuclear security within each State; and the importance of a strong nuclear security culture.

During both panel sessions, participants welcomed the initiation of discussions on the preparation of the conference of States Parties to be convened in 2021 in accordance with Article 16.1 of the Amendment.

Legislative and Regulatory Frameworks

Presentations during this session provided national perspectives on the topic. They highlighted the importance of the adoption of adequate legislation and regulations to implement the CPPNM and its 2005 Amendment, the use of IAEA Nuclear Security Series guidance documents, and international cooperation for nuclear security. They included a structural comparison between legislative and regulatory frameworks for nuclear safety and security.

Following the presentations, discussion among participants focused on the implementation of a performance-based approach to nuclear security regulations in connection to States' CPPNM and Amendment commitments. The discussion emphasized that there is no 'one size fits all' approach to nuclear security that would be applicable to all States. A State's political, geographical and threat context shapes its approach to nuclear security, underscoring the importance of a State-specific approach, with broad stakeholders involvement. The Chair and participants highlighted the importance of Agency advisory services such as IPPAS missions as part of a State's approach to improving nuclear security and concluded that all States should work to establish appropriate legislation and regulation for nuclear materials and facilities under their jurisdiction.

Developing and Sustaining a Physical Protection Regime

Presentations during this session addressed the inclusion of evolving threats in a national design basis threat (DBT) , good practices on training for physical protection, and more general aspects of developing and sustaining physical protection regimes.

Following the presentations, discussion among participants focused on DBTs. DBT was recognised as a key element in a State's nuclear security regime, and it was noted that further guidance from the Agency could help States in developing and maintaining a national DBT appropriate to their circumstances. Participants concluded that a national DBT needs to be flexible enough to facilitate rapid and appropriate response to changes in the threat environment. They concluded that States need to optimize their processes for threat analysis, both at the national and the facility level, noting that threat analysis should be a continuing process in order to address emerging or rapidly developing technologies.

Education and training for physical protection were also themes in the discussions. Education and training of nuclear security professionals are essential to ensure that nuclear security is both effective and sustainable. Training needs to be regular, integrated and focused on the needs and priorities of individual States and facilities. Technological tools can support training, and harmonized training approaches are needed to ensure comprehensiveness while minimizing duplication of content.

The participants concluded that the twelve essential elements of a State's nuclear security regime, as described in IAEA Nuclear Security Series No. 20 'Objective and Essential Elements of a State's Nuclear Security Regime', depend on one another and therefore to ensure that a national nuclear security regime is robust, each of these elements needs to be strong. Participants recognized a strong nuclear security culture to be an essential factor in building and sustaining an effective nuclear security regime, underpinning these twelve elements.

Protection against Unauthorized Removal of Nuclear Material and Sabotage

Presentations during this session addressed national efforts to strengthen physical protection measures for nuclear materials and facilities, including use of an outcome-focused (performance-based) national regulatory approach to nuclear security. Nuclear security activities of the IAEA supporting national efforts with respect to

nuclear and other radioactive material, associated facilities and associated activities under regulatory control were also described.

Discussion addressed the use of an outcome-focused regulatory approach, responding to new and evolving challenges to nuclear security, cooperation at the national level on nuclear security and challenges related to training and professional development for operators. One aspect of an outcome-focused regulatory approach is the difficulty of applying it to smaller operators with less in-house experience, which may still prefer a prescriptive approach. Participants concluded that the outcome-focused approach encourages ownership of security risks at senior levels within the industry. Such an approach, and the resulting facility-specific solutions, have security benefits by reducing the chance of threats adapting themselves to a standardized and prescriptive regulatory approach.

Participants encouraged States to ensure that their nuclear security regime is flexible enough to adapt to the evolving threat environment. They acknowledged the importance of the IAEA Nuclear Security Series guidance and encouraged the Agency to produce new and revised guidance that takes account of the new and evolving challenges and threats. Participants also encouraged States to strengthen cooperation and exchange of information between the various stakeholders in nuclear security at the national level.

Finally, the importance of training and human resource development for both operators and regulators was emphasized, as well as the need for some consistency in the training provided to both entities in order to facilitate communication and exchange of experience between them.

International and Regional Cooperation

Presentations during this session addressed the global nuclear security framework as well as the role of the Agency and of individual States in fostering international cooperation. Speakers noted the importance of international platforms as well as continued support for the IAEA's central role in nuclear security. They emphasized the importance of continued commitment from Member States to provide both financial and in-kind resources to the Division of Nuclear Security.

Following the presentations, discussion among participants highlighted the importance of creating global norms for nuclear security. Discussions also highlighted the importance of harmonizing nuclear security worldwide, while leaving to each State decisions regarding the means to achieve nuclear security. This could include standardizing training, procedures, and techniques internationally. Participants concluded that while international cooperation in nuclear security is important, some challenges associated with such cooperation remained.

Technical Sessions

Building on the discussions in the main panel sessions, thirty-nine technical sessions addressed in more detail a wide range of specific scientific, technical, legal and regulatory issues from all aspects of physical protection. The technical sessions considered most of the major elements of a State's physical protection regime, as identified in INFCIRC/225/Rev.5: the legislative and regulatory framework; international cooperation and assistance; identification and assessment of threats; risk-based physical protection system and measures; sustaining the physical protection regime; and planning and preparedness for and response to nuclear security events. One session also specifically addressed the interface between safety and security. The main conclusions of these sessions are summarized in the following sections.

International Transport

During the technical sessions on nuclear security in transport, participants discussed the transport security of all categories of nuclear material. Speakers addressed vulnerability- and threat-based approaches to transport security of nuclear material and risk mitigation for spent fuel transport, as well as computer security and novel tracking methods that do not use the global positioning system. Participants noted that the States Parties to the CPPNM and the Amendment are taking actions to implement at the national level the requirements on the transport of nuclear material of these instruments, as well as the relevant recommendations contained in INFCIRC/225/Rev.5. States have developed a number of good practices related to regulatory matters, the deployment of technological solutions and cooperation arrangements to improve the secure transport of nuclear material.

Participants encouraged the Agency to continue to assist Member States in their efforts to develop methodologies, tools and techniques to help mitigate the risk of sabotage to nuclear material in transport. Noting that cyber attacks present an emerging threat to such transport, participants also encouraged the Agency to

develop guidance on computer security considerations relevant to transport security. Finally, they suggested that the Agency consider conducting additional training and workshops for newcomer States on the secure transport of nuclear material, drawing on good practices from States with more experience.

Legislative and regulatory framework

The participants in the technical sessions on legislative and regulatory requirements for physical protection of nuclear material and facilities addressed approaches to development of these requirements, case studies, and regulatory oversight. Many States expressed interest in discussing in future forums their legislative and regulatory frameworks for the physical protection of nuclear material and facilities and their consistency with the provisions of the CPPNM and its 2005 Amendment, INFCIRC/225/Rev.5 and other publications in the IAEA Nuclear Security Series. Many States were also eager to share their experiences with the implementation of INFCIRC/225/Rev.5. The IAEA was encouraged to continue to offer assistance whenever Member States seek guidance in enhancing their legislative and regulatory frameworks.

International cooperation and assistance

The technical session focusing on various topics relating to international and regional cooperation in nuclear security highlighted that international cooperation can greatly contribute to strengthening global nuclear security. Participants urged the IAEA to be even more active in fulfilling its central role in coordinating international capacity building. There was agreement among participants on the importance of enhancing cooperation in the field of nuclear security regionally and internationally, the need to continue with international leadership in that regard and to further promote the implementation of nuclear security commitments.

Identification and assessment of threats

The technical session on Design Basis Threat (DBT) provided practical experience, information and strategies for establishing the national DBT. The participants stressed that threat assessment and the subsequent establishment of the national DBT are essential components for nuclear security, as recommended in INFCIRC/225/Rev.5, and that a well-structured DBT can clarify a State's ability to protect nuclear material. They emphasized that credible threats need to be identified, rather than focusing unduly on less likely threats, and that cyber- and insider threats are critical elements of the modern threat spectrum.

Risk-based physical protection system and measures

Physical protection

Participants in three general technical sessions on physical protection regimes focused on the structures and priorities for such regimes, notably the establishment and continued enhancement of physical protection regimes based on international best practices, and the importance of having clearly defined responsibilities for the States, competent authorities and operators, as well as mechanisms to ensure proper coordination between the various stakeholders in order to sustain the physical protection regime. Discussion among participants focused on the importance of using international instruments and tools to enhance physical protection regimes, including by fully implementing the CPPNM and its 2005 Amendment, and making use as appropriate of IPPAS missions and Integrated Nuclear Security Support Plans (INSSPs). The importance of continuous improvement of nuclear security culture in States was also stressed, as well as the need for States to share more information about threats, as appropriate.

A second set of three technical sessions on physical protection regimes focused on facilities. The sessions highlighted good practices from physical protection regimes in specific States and discussed the importance of security by design. The discussion also addressed exercises and drills to test the physical protection systems at facilities and the value of tabletop exercises, as well as the importance of appropriate training of response forces for nuclear security events. In addition, the challenges associated with new nuclear programmes and new initiatives within established programmes were highlighted, such as the establishment of repositories for disposal of radioactive waste. The challenges associated with establishing a strong nuclear security culture were also discussed. The participants underscored the importance of the Agency's assistance to Member States on request in managing safety-security interfaces.

Further technical sessions on physical protection approaches and related case studies described new ways of approaching physical protection systems, and examples of ways in which Member States are working to improve and update their regulations related to the physical protection of nuclear sites. In this context, it was suggested to expand the guidance available for the facility level, including both prescriptive (compliance) and

performance-based approaches. It was also proposed that Member States and individual facilities, within the bounds of their national regulations, should consider integrated performance testing to evaluate how components and systems interact as a whole, rather than individually, in order to avoid the failure of a component in one layer affecting other layers or components. Participants also suggested that, as regulatory practices evolve in various Member States, national best practices should be shared, including elements such as outcome-based regulations and coordination and integration, as appropriate, with law enforcement.

Two technical sessions on physical protection systems and measures underscored the importance of an integrated approach for the design and implementation of physical protection systems for nuclear material and nuclear facilities. Presentations addressed good practices, case studies and lessons learned during the implementation of physical protection measures, highlighting the importance of vulnerability analysis, risk assessment and the sustainability of physical protection systems. Participants noted that effective systems and measures for the security of nuclear material and facilities are designed to take into account the capabilities of insider, cyber- and other new, emerging and evolving threats. They stressed the need to address possible blended attacks, involving both cyber and physical elements. Following these discussions, the participants concluded that many States continue to need assistance to train personnel responsible for designing or enhancing physical protection systems and measures, and encouraged the Agency to continue to assist States in this area on request. They encouraged the Agency to develop guidance addressing the design and implementation of physical protection systems able to counter emerging threat capabilities.

A technical session was also held addressing case studies on the implementation of INFCIRC/225/Rev.5. Participants concluded that Member States are actively implementing INFCIRC/225/Rev.5 and identifying good practices. They also suggested that the Agency promote national implementation through periodic surveys of potential needs of Member States (and follow up with assistance to States on request to address identified needs), establishing further nuclear security guidance on relevant topics, and conducting awareness seminars, training events and workshops.

Finally, during a technical session focused on physical protection measures and new technologies, participants concluded that new technologies can present both opportunities and challenges, both to existing physical protection systems and for the design of new systems. Participants stressed that States and operators should not only consider the additional threat that technological advances may present for nuclear facilities, but also how such technologies could be used to improve physical protection. For example, participants noted that new technologies might be very effective in addressing security situations that are not easily managed with existing technologies. They also highlighted that while many technologies may have potential for use in nuclear security, they need to be demonstrated to be usable and sustainable in practice; for example, new detection systems used for physical protection will need to be not only effective, but also cost-effective.

NMAC for nuclear security

Speakers and participants in the session on Nuclear Material Accounting and Control (NMAC) for nuclear security focused on frameworks, tools and standards for using NMAC to achieve the safe and secure production, use, handling and storage or disposal of nuclear material. During the discussion, participants underscored that NMAC measures for nuclear security are needed to detect removal of nuclear material in a timely manner, and that the NMAC measures implemented for nuclear security purposes must work together with safeguards measures. In this regard, the participants suggested that synergies and differences between NMAC for nuclear security and safeguards should be analysed and documented.

Insider threat and trustworthiness

During the technical session on insider threat and trustworthiness, participants focused on techniques and good practices for countering insider threats at nuclear facilities, including new technologies to assist in these efforts. A modeling technique was discussed that could be used to identify weaknesses in nuclear security systems that might be exploited by an insider. The session also addressed ways in which self-assessments of nuclear security culture can be used to address insider threat concerns by identifying weak points in the facility nuclear security culture. Participants discussed methods for conducting trustworthiness evaluation and countering insider threats at their facilities. Participants were briefed on an emerging technology that seeks to counter insider threats by recording and recognizing hand motions of staff and comparing them with hand motions associated with malicious acts.

Assessment of physical protection systems and measures

Two technical sessions were convened on the assessment of physical protection systems and measures: one on methodologies and tools for assessment of physical protection, and another on assessment related case studies and IPPAS missions. Presentations covered methodologies and tools for vulnerability assessment, evaluation tools for physical protection systems and recent IPPAS missions. Participants discussed performance testing and methods for qualifying and quantifying the compliance and performance of physical protection systems.

Computer security for physical protection systems

During the first of three technical sessions on computer security for physical protection systems, the participants focused on the differences between computer security for safety and security, the concept of defence in depth as it relates to computer security, the difference between a computer security DBT and physical protection DBT, and the vulnerabilities (and increasing opportunities provided to adversaries) posed by increasingly interconnected digital technologies. Participants provided the following suggestions for the Agency:

- Produce advice on how to develop and use a computer security DBT, underscoring that this is a current and urgent issue;
- Develop guidance on supply chain security as a current issue, noting that many current physical protection systems use commercial computer components;
- Consider how to address human behaviour in nuclear security guidance, as it relates to computer security; and
- Seek to standardize terminology used in Nuclear Security Series guidance addressing physical protection, safety, and computer security.

During the second technical session on computer security, participants discussed the interdependencies between computer security and physical protection. They underscored the need for organizations to clearly designate personnel responsible for either computer security or physical protection, in order to ensure a consistent approach to nuclear security. If the designated personnel are different, the responsible persons should coordinate their efforts. To promote a comprehensive, consistent and coherent approach to nuclear security addressing both physical protection and computer security, participants suggested that the Agency consider conducting further research as well as develop guidance on these interdependencies. They also suggested that the Agency consider developing a training course or programme focused on scenarios involving blended attacks (with both cyber and physical elements).

Two further technical sessions addressed computer security approaches and computer security for safety and security. Participants concluded that there needs to be greater synergy between defence in depth as applied to computer security measures and the (safety) defence in depth of the facility that the computer security measures aim to protect. They noted that security by design is essential for future nuclear digital systems to provide resilience against cyber attack, and that this will require new technology to be developed. In addition to design changes, ensuring computer security will also require organizational changes and acceptance of the need for and importance of applying computer security measures. Participants stressed that the dynamics of cyber threats are different from the physical threats and safety hazards, and that the dynamic nature of cyber threat requires virtually continuous evaluation of computer security measures, preferably by independent means.

Participants in the session on computer security assurance activities noted that international methodologies such as COBIT 5 and ISO 27000 may assist in the development and maintenance of information security management systems at nuclear organizations. They also stressed that exercises to evaluate the effectiveness of the security programme in defending against, detecting and responding to the harmful effects of cyber attacks on nuclear facilities should be developed. They identified a significant demand in Member States for sharing of experiences and results of both assessments and exercises, and suggested that the IAEA support the holding of expert meetings to facilitate the sharing of experiences in these areas. They also proposed that the IAEA establish a mechanism through which assistance could be offered to participants from other Member States and/or IAEA experts to observe exercises on site.

Sustaining the physical protection regime

Nuclear security culture

During the technical sessions on nuclear security culture, a range of topics were discussed, including challenges in establishing an effective nuclear security culture, assessment of nuclear security culture and the

role of regulators, and the relationship between safety culture and security culture. Participants stressed that nuclear security culture should include being alert to possible 'unwitting insiders' who might unintentionally assist malicious actors, and other possibilities of nuclear security events being triggered by an unintentional act. Discussion among participants underscored the need for harmonization of nuclear safety culture and security culture, taking into account their differences. Participants also concluded that nuclear security culture should take account of broader cultural issues, including issues specific to the facility staff. They also noted that the 2005 Amendment to the CPPNM indicates that all organizations involved in implementing physical protection should give due priority to security culture to ensure its effective implementation in the entire organization.

Quality assurance

Participants in the session on quality management for physical protection systems focused primarily on the implementation of quality assurance programmes and their role in evaluating the effectiveness and performance of physical protection systems. The speakers and participants in the session encouraged the IAEA to facilitate regional or inter-regional training and workshops on quality management, in order to share knowledge and good practices among States on the implementation of quality assurance systems.

Information security

Participants in the session on management of sensitive information underlined that a national nuclear security regime needs to include measures for the control and protection of sensitive information, and that the success of such measures will rely on the active cooperation of all personnel. They underscored the importance of assessing the risk of release of sensitive information, and balancing this risk with the risk of not releasing it, such as constraining the ability of staff to carry out their work effectively.

Education and training

Participants in the two technical sessions on training and capacity building agreed that continuous human capacity development is necessary for a successful nuclear security regime. Participants in the first session, focused on academia, noted that funding of academic programmes is a common concern, and suggested that the Agency continue to help support human capacity development through development of Nuclear Security Training and Support Centres (NSSCs). Participants in this session concluded that cooperation with and between NSSCs and other Centres of Excellence can support States' human capacity building and thus underpin more effective nuclear security regimes. The second session focused on specific case studies. Participants concluded that the use of interactive elements in training can enhance the learning experience, especially when combined with real life case studies. They also underscored that training programme requirements should be developed to be consistent with the provisions of the CPPNM and its 2005 Amendment. Participants emphasized that Member States need to ensure that personnel provide proof of qualification or certification if they are employed in the field of physical protection of nuclear materials and facilities.

Participants in a subsequent technical session focused on training and exercises concluded that creative approaches to nuclear security training can achieve better results with fewer resources. They suggested that the Agency should emphasize regionally-focused training in order to effectively address regional threats. They also stressed that Agency training and conferences (as well as other international nuclear security training) should include law enforcement professionals to a greater extent than is currently the case, and training of response forces could be combined with existing Agency nuclear security training. They suggested that the Agency's 'train the trainers' approach should include training those developing, designing, and evaluating training for nuclear security as well as those delivering training courses.

A further technical session focusing on case studies in training and capacity building addressed approaches to and practices of training on nuclear security (including physical protection) for countries embarking on nuclear power programmes. It also covered training for protective forces, sabotage analysis and security inspectors and the use of 3D interactive environment. Participants concluded that it can be beneficial to blend current training methodologies with new methods and tools including the use of virtual reality systems. Participants encouraged the Agency to assist in dissemination of information on training methods, programmes and tools available and highlighted the importance of balance between knowledge, performance and effective domains in the training.

Participants encouraged States to actively use e-learning available from the IAEA and other organizations. They encouraged the Agency to provide e-learning nuclear security courses as soon as possible in all six official UN languages. Participants also highlighted the need for different levels of e-learning (e.g. basic, advanced and expert level) and encouraged the Agency to develop the capability to individualize training.

A further technical session focused specifically on NSSCs. Participants noted that the variety of approaches adopted by Member States when developing NSSCs reflected the flexibility of the NSSC concept to meet the needs and resources of each State. They stressed the common challenge for NSSCs of adequately 'training the trainers' in support of their programmes, and encouraged currently existing NSSCs and the IAEA to collaborate to create additional process and capabilities to support NSSCs in meeting this common challenge. They stressed the importance of establishing a central NSSC coordinating mechanism for organizing multiple stakeholders and informing the development of successful NSSC-related programmes, and urged the IAEA to continue to strengthen cooperation between Member States with NSSCs (existing and planned) to further promote the sharing of best practices and lessons learned.

Planning and preparedness for and response to nuclear security events

During the technical session on planning and preparedness for and response to nuclear security events, presentations addressed national perspectives on planning and preparing to respond to a nuclear event. Participants noted that coordination between organizations responsible for safety and security is essential during an emergency, whether it is caused by a nuclear security or safety event. Participants also observed that the trust built between participants when testing response capabilities for nuclear security events can enhance communication and coordination between them and thus improve response capabilities during an actual event. They stressed that the main goal of exercising response capabilities is to train the various entities involved in response in a way that includes as many participants as possible working together, in order to identify challenges that could arise during an actual event.

Safety-security interface

During the technical session on the interface between safety and security, speakers highlighted the importance of integrating safety and security to the extent possible. However, they recognized that technical and operational differences have to be acknowledged and respected. Participants underscored the importance of integrated regulations, and of an integrated regulatory body, as well as joint training and exercises for safety and security personnel, to help them develop a common language and to build cooperation. Participants also noted that virtual reality software can be used to conduct exercises cost-effectively and allow personnel from both safety and security to train together, thus enhancing their effectiveness and interoperability. Participants suggested that the Agency, regulators, industry and other nuclear security stakeholders continue to promote the integration of safety and security guidance, regulations and practices to the extent reasonable.

Closing of the Conference

In her closing remarks, the conference President provided a brief overview of the key insights and conclusions of the conference. She described the level of participation and provided an overview of the programme, including a summary of the main panel sessions. She highlighted the major themes that emerged from the conference, dividing them into four elements: international organizations, national organizations, individuals and technology, and the interaction among these elements, which together form a 'systems approach' to nuclear security.

At the international level, she noted that universalization and implementation of the CPPNM and its 2005 Amendment go hand-in-hand, stressing the importance of international cooperation and of States learning from one another. She also noted the central role of the IAEA in facilitating this cooperation. At the national level, she highlighted the importance of States focusing not only on credible threats, but also the need to account for evolving threats. She mentioned the need for balance between confidentiality and information sharing and to clearly define responsibilities for all stakeholders.

On the individual and technical levels, she stressed that a strong nuclear security culture underpins a State's entire physical protection approach, and highlighted the need to better ensure adequate cyber security and protect against insider threats. She underscored the importance of security by design, of realistic and integrated training/exercises and that technological advances can be seen both as threats and opportunities to improve a State's response capabilities.

Addressing interactions between the four elements, she concluded that physical protection cannot be considered in isolation, that there is a need to better protect against credible cyber and insider threats, and that nuclear security must be coordinated with nuclear safety, particularly when it comes to organizational culture.

In closing, she encouraged States to apply the knowledge that they had gained during the conference and requested the Agency to consider holding a further conference on physical protection to follow up on the lessons

learned from this event. She also stressed the importance of beginning planning for the 2021 Conference as provided for by the 2005 Amendment to the CPPNM.

In his closing remarks, the IAEA Director General, Yukiya Amano, noted that nuclear security is the responsibility of individual countries, but highlighted the role of the IAEA in providing practical assistance, expert advice, equipment and training and the global platform through which countries cooperate to minimize the risk of nuclear and other radioactive material being used in a malicious way. He underscored the importance of the entry into force of the 2005 Amendment to the CPPNM, encouraging all countries to adhere to it. He also highlighted the recent adoption of the Nuclear Security Plan 2018-2021 and specific elements therein, such as the importance of advisory missions and practical assistance in the area of physical protection provided by the Agency. Furthermore, he underlined the need for Member States to keep pace with evolving challenges to nuclear security. Finally, he thanked the Conference President for bringing the Conference to a successful conclusion.

The above commentary provides a summary record of the International Conference on Physical Protection of Nuclear Material and Nuclear Facilities held in Vienna from 13 to17 November 2017.

Appendix I:

OPENING AND CLOSING STATEMENTS

JUAN CARLOS LENTIJO
Deputy Director General, IAEA

Distinguished delegates, ladies and gentlemen, good morning!

Welcome to the International Conference on Physical Protection of Nuclear Material and Nuclear Facilities! I am glad to see such wide participation.

Big tasks await us this week:

We will share experiences, challenges, lessons learned and good practices related to the implementation of the Agency's Nuclear Security Series document Number 13, titled Nuclear Security Recommendations on Physical Protection of Nuclear Material and Nuclear Facilities, or NSS 13 for short.

We will also encourage universalisation of the Convention on the Physical Protection of Nuclear Material, known as CPPNM, and its 2005 Amendment.

These two topics are closely related, as the NSS 13 document provides guidance on how to implement the technical part of the CPPNM amendment. Indeed, this conference aims to enhance Member States' use of both this document and of associated implementing guidance as they work to fulfil their Amendment obligations.

The convention and its amendment require State Parties to protect nuclear facilities and nuclear material in domestic use, storage and transport. The amendment's entry into force last year extended its application and demonstrated the international community's determination to act together to strengthen nuclear security globally. The Agency, on request, will continue to provide legislative and technical assistance to support State Parties in meeting their new obligations under the Amendment.

Physical protection of nuclear material and nuclear facilities is an integral part of a nuclear security regime. This was underlined in the Ministerial Declaration of the Agency's 2016 International Conference on Nuclear Security, and in IAEA General Conference resolutions, which recognize the importance of the Convention and its Amendment.

Ladies and gentlemen,

As we all know, the responsibility for nuclear security within a State rests entirely with that State. Countries should ensure the security of all nuclear and other radioactive material under their control in accordance with national and international obligations. The Agency's role is to support States in fulfilling this responsibility. I will soon outline how we do this, but first, let's have a look at the topics on our agenda.

At this conference, we will discuss the legislative and regulatory framework for physical protection. We will discuss experiences of developing and sustaining physical protection regimes and of protecting against unauthorized removal of nuclear material during use, storage and transport. We will discuss how to prevent sabotage of nuclear material and nuclear facilities.

I am very keen to hear about the outcome of these important discussions.

Ladies and gentlemen,

I will now highlight some of the Agency's major activities in this area:

- We promote universalisation of the CPPNM and its Amendment. We coordinate international cooperation, and we work to strengthen nuclear security globally.
- Upon request, the Agency assists Member States in establishing and strengthening nuclear security regimes and nuclear security systems for facilities and transport. We also provide guidance and advice, advisory missions, training support and nuclear security upgrades for facilities, including for nuclear material removal and repatriation projects.
- We work to promote, enhance and sustain a strong nuclear security culture. We are developing guidance documents and we deliver training courses on security culture self-assessment and enhancement.

- The Agency supports Member States in the protection of computer-based systems. Such systems are used for physical protection, nuclear safety, and nuclear material accountancy. They also protect against cyber-attacks and manipulation or falsification.
- We also develop guidance on implementing and exercising contingency plans at nuclear facilities.

In essence, we help develop a framework for nuclear security.

The management of security risks associated with nuclear and other radioactive material, whether in use, storage or transport, begins with the definition of the threat.

But this is only a start. We must also assess these threats and identify potential consequences, so that we can protect against these, using a graded approach.

The rapid development of science and technology brings both opportunities and challenges for physical protection - this is something that should be considered in risk and threat assessment.

As we all know, adversaries can include not only external actors, but also insiders. Agency activities for protection against insider threats include revising a Nuclear Security Series Implementing Guide that takes into account guidance on the use of nuclear material accounting and control for nuclear security purposes.

Member States, particularly those that have launched or are considering launching a nuclear power programme, have requested detailed guidance to assist in ensuring that nuclear security receives due attention during the licensing of nuclear activities. To meet this need, we are developing documents and training material addressing the licensing and inspection of nuclear security during all stages. This includes construction, commissioning and operation of both nuclear power and research reactors.

Our International Physical Protection Advisory Service, or IPPAS, programme assists Member States - on request - and helps strengthen nuclear security globally. We recently marked the 20th anniversary of IPPAS missions. Over the years, we have seen a significant increase in mission requests. We have worked together to improve the programme by creating modular services, by establishing a database of good practices identified during the missions, and by taking into account of changes in the nuclear security framework.

Ladies and gentlemen,

That was a brief glimpse of some of our activities in this area. We will continue developing these. I hope the conference will provide both high level recommendations and implementable actions. I am particularly interested in hearing how we best can support the implementation of the CPPNM and its amendment, and how we can support the use NSS 13 and our other Nuclear Security documents.

Thank you.

MS KATHLEEN HEPPELL-MASYS
Director General, Directorate of Security and Safeguards
Conference President

The conference provides a forum for Member States to share experiences, good practices and lessons learned for the implementation of INFCIRC rev 225. The intention of this conference is to enhance the understanding of the recommendations contained in this document, and to assist Member States in implementing a comprehensive nuclear security regime, including international commitments.

The conference will also provide a forum to discuss the CPPNM and its Amendment, which entered into force in May 2016.

The significance of the conference reflects growing concerns of evolving threats to nuclear security and the rapidly changing technologies, as is evidenced in the nearly 800 participants representing 107 Member States and 14 International Organizations.

The physical protection of nuclear material and nuclear facilities are critical aspects of achieving nuclear security. The CPPNM and its Amendment are legally binding documents that include revisions for state parties to protect nuclear material and nuclear facilities in use, storage and transport, and to reduce risk of a terrorist attack involving nuclear material.

The entering into force of the CPPNM into force in 2016 was a further step in strengthening nuclear security around the world. The Ministerial declaration of the 2016 Nuclear Security conference encouraged the IAEA's efforts to promote universalization. Today there are 115 state parties to the CPPNM and A, and efforts continue to attract more. As President of this conference, I view this momentum as a great achievement, and I strongly encourage further member states to become parties to the Amendment.

The IAEA's nuclear security activities are sustained by promoting an effective nuclear security culture that should permeate all organizations at all levels. The responsibility of achieving this security culture begins with each Member States leadership, be it regulatory authorities operators or policy makers. And further efforts should be undertaken in this area to underscore the importance of this responsibility.

The four components groups: The State, organizations, Managers of organizations and individuals should work together to establish and maintain and effective nuclear security culture. It is important to keep in mind that technology advances add another dimension to nuclear security, and these advancements need to thoroughly consider to develop strategies to mitigate evolving threats and to enhance the security on nuclear material and facilities. This important work requires a concerted effort by all Member States. The IAEA, under its Nuclear Security Plan 2018-21, will continue to provide assistance to States, upon request, on the security of nuclear material and nuclear facilities under their control. The pursuit of enhancing our collective resilience against threats and challenges to nuclear security helps us in effectively detecting, preventing and responding to malevolent acts.

Through this week's conference we seek to continue the momentum generated by previous IAEA conferences related to nuclear security. This conference's comprehensive programme and the diversity of its participants provides each of us with an excellent opportunity to listen, challenge, and to grow through intelligent discussion. But the most important aspect is not what happens this week, but rather what happens after the conference. Which is taking the learning back to your respective countries and converting this into constructive action. When we are able to connect real change to what has been discussed this week then we will know we have successfully achieved a higher degree of physical protection helping our collective goal of enhancing our nuclear security regimes and the overall global nuclear security architecture worldwide.

With this in mind I encourage you to actively participate in the sessions of this conference, and to take back home good practices and ideas for improving and enhancing the resilience the of your respective nuclear security regimes.

I wish you all a successful and enjoyable conference. Thank you.

DR ROGER HOWSLEY
Executive Director, World Institute for Nuclear Security (WINS)

Good morning, Deputy Director General Lentijo, Excellences, Ladies and Gentlemen.

WINS congratulates the IAEA on the organisation of this International Conference on Physical Protection of Nuclear Material and Nuclear Facilities, and acknowledges the actions of the international community that have led to the entry into force in May 2016 of the Amendment to the Convention of the Physical Protection of Nuclear Material, a singularly important achievement and the further strengthening of the international legal framework for nuclear security.

WINS is proud to, once again, be a cooperating organisation, partnering with the IAEA and the other cooperating organisations, who are represented here this morning.

WINS' vision is that all nuclear and other radioactive material and facilities are effectively secured by demonstrably competent professionals, applying best practice to achieve operational excellence.

We currently have over 4,100 members in 122 countries and, in the last three years, over 1,000 participants have enrolled in the WINS Academy which provides certified training for personnel with responsibilities for nuclear security. We were delighted last year when the WINS Academy was specifically recognised in the Joint Communication on Certified Training, circulated by Canada with 13 other supporting countries, known as Information Circular 901. The INFCIRC highlights the importance of certification, quality management and Nuclear Security Support Centres to sustain nuclear security competences and build capacity in each country. I encourage you to sign on to this important document and demonstrate your national commitment to certified nuclear security training.

During this conference we will be showcasing the work we are doing with both the aviation and nuclear sectors, to identify best practices from each sector in order to strengthen security overall. This is the subject of an extensive research project funded by the MacArthur Foundation. In addition, we will be presenting our work with National Nuclear Security Training and Support Centres, including in Mexico, and providing a more detailed status report on the WINS Academy.

In that regard, and in good company with Director General Amano, WINS will be highlighting the importance of increasing the number of women engaged in nuclear security internationally and implementing targeted programmes to achieve this goal. WINS is a Gender Champion and has an active programme to identify and overcome the barriers to full participation of women in the nuclear security sector and ensure that there is a marked increase in the number of women engaged in nuclear security from the current low level of approximately 20%.

Finally, WINS is hosting a side event today: "Evolving Threats and Advanced Technology- what does it mean for nuclear security?" I will be in conversation with Mr. Mitch Free, IBM Director for Innovation Business Development. We will be considering the impact of Big Data and Data Analytics, Behavioural and Biometric Analysis, Robotic Guards and Remotely Operated Weapons Systems, Small Modular Reactors and a World that is interconnected in real time like never before. You are all cordially invited to join us in the Press Room from 12.45pm today.

To obtain a full appreciation of all the work that WINS is doing to achieve its mission and support the objectives of the IAEA, I encourage you all to visit the WINS' exhibition space immediately adjacent to Board Room B.

I wish you a productive and fruitful week.

MR BENJAMIN WHITTARD
International Nuclear Services

Distinguished delegates, ladies and Gentlemen, Good Morning

On behalf of the World Nuclear Transport Institute, our Secretary General JOHN MULKERN and our Chairman DAVID OHAYON, may I extend you all a warm welcome to this year's International Conference on the Physical Protection of Nuclear Materials and Nuclear Facilities, here in the beautiful city of Vienna. As chairman of the World Nuclear Transport Institute's Transport Security Working Group it is my honour to provide this opening address to you today and I would like to begin by congratulating the IAEA and the organising committee for yet another diverse, forwarskirtsd looking and innovative conference programme.

As we all know, the security of nuclear materials both at nuclear facilities, and during transport, continues to warrant careful attention. Ensuring these materials do not fall into the hands of those who wish to do harm must remain our highest priority – after all - nuclear materials cannot be safe unless they are secure. We must therefore continue to stay ahead of the curve, anticipate and innovate, exchange views and opinions, and raise awareness within our community. I am very pleased to see topics such as supply chain security, cyber security and insider threat on the programme this week.

But we must also acknowledge that nuclear security isn't just about securing nuclear materials, its also at the very fabric of our sectors reputation and directly impacts the public's confidence in our industry.

This social contract is critical, and whilst we all hope that nuclear energy will play an important role in a diverse energy mix that can meet the demands of tomorrow, this contract is heavily reliant upon an industry that can demonstrate the highest levels of both safety AND security.

Underpinning all of this sits the need, and desire, to have a competent, motivated and sustainable pool of nuclear security professionals and I am pleased to share this stage today with our partners at the World Institute for Nuclear Security whose Academy we strongly support and contribute to. We are not there yet, but this conference, I believe, provides an ideal platform on which experiences, knowledge and opinions concerning nuclear security can be shared to help make this desire a reality.

Now it would be remiss of me not to talk more specifically about the transport sector during this opening address. Not least because The World Nuclear Transport Institute is committed to the safe, secure, efficient and reliable transport of radioactive materials globally. Without this critical enabling sector, the nuclear fuel cycle as we know it would simply grind to a halt. With 48 members we are a truly international institution who is committed to supporting its members for the benefit of the entire nuclear industry.

In the context of Security, the nuclear transport sector itself faces a number of unique challenges. It does not benefit from rings of protection afforded to static facilities in the form of fence lines or intruder detection. Nor can we carry out our business within the confines of a site, away from the public eye.

Instead it adopts alternative and often innovative arrangements to achieve the same security outcome, and embraces the public environment in which it is required to operate in by working hard to be as open and transparent as possible. This is a careful balance, but a necessary one, and I am pleased to see a number of transport topics being discussed and shared this week focusing on these types challenges. I would encourage you all to attend and see what you might learn from our member's experiences.

At WNTI we work closely with our members to support the sharing of this knowledge and experience through routine transport security working group meetings and events. We are also honoured to act as the voice of the transport industry and our members here at the IAEA and at other international organisations including the International Maritime Organisation. Assisting in the development of good practice and bringing the perspective of our members to the table for consideration.

We continue to believe that operators often have the best ideas and solutions to problems or vulnerabilities, or at least, can bring a unique practical perspective to Agency discussions. The WNTI is pleased to commit to continuing in this vein in the months and years ahead by supporting the IAEA and its member states in further improving and developing this good practice in close consultation with the industry we represent.

To close this address, the World Nuclear Transport Institute is both honoured and delighted to support and participate in this important conference, which brings together many of the leading minds and a range of

nuclear security professionals from across the world. We hope that all delegates find value in the presentations and discussions in the week ahead, and that this can contribute to improvements in your own states. Collectively, we need to ensure this momentum is not lost, that complacency is avoided and that continuous improvement is at the heart of all that we do.

Thank you for listening.

MR JOHN BUCHANAN
INTERPOL

Introduction and thanks to Chairman, IAEA and members.

Critical Infrastructure acts as the life support of our everyday existence. Our societies are sustained by a highly sophisticated network of systems and our citizens expect this to be maintained to a standard that provides a reliant and functioning service for their health, safety and economic well-being.

However, with greater reliance on nuclear energy and the medical advancements from the increased use of radiological isotopes /sources there comes a greater vulnerability. The interdependence of society to these specific sectors means that they offer a very attractive target for the terrorist or organized crime group.

Tactics used in conflict zones such as suicide vests, VBIED's, active shooters cyber-attacks and unmanned aerial systems are being adapted by the terrorist for use in our city streets and urban areas. The possibility of radiological or nuclear materials being used to further their cause cannot be ignored.

So it is vital that we protect these materials in a way that allow their benefits to be enjoyed by our citizens but that prevent them being acquired by groups or individuals intent on bringing death or political instability or seeking financial gain.

What can we do or rather what are we doing and what can we do better?

One of INTERPOLS goals within its strategic framework for 2020 is to maximize its role within the Global security architecture and to build interaction within this architecture that develops truly global policing initiatives.

When combined with the actions contained within respective 'Nuclear Security Action Plans' emanating from the Nuclear Security Summit in Washington in 2016, we see that they complement each other and work towards the advancement of nuclear security.

This action plan provides INTERPOL with a mandate to:

- Improve information exchange and expand its analytical capabilities.
- Support Law enforcement led operations through training, cooperation and coordination.
- Develop capacity and capability of law enforcement by widening its training activities to cover PREVENTION, DETECTION, RESPONSE and INVESTIGATION.

INTERPOL's wider Counter Terrorism Strategy focuses on keeping weapons and materials out of the hands of terrorists. Therefore INTERPOL is actively supporting efforts relating to the security of radiological and nuclear material. As the leading international organisation for fostering law enforcement cooperation, INTERPOL plays an important role in capacity development and information sharing.

As mentioned earlier we are currently reviewing and developing products that cover the law enforcement pillars of PREVENTION, DETECTION, RESPONSE AND INVESTIGATION. These are seen as the mainstay of activities for law enforcement across the world.

Although historically we have placed great emphasis on the detection and investigation into the illicit trafficking of nuclear and radiological material, INTERPOL's Radiological and Nuclear Terrorism Prevention Unit has never lost sight of the fact that prevention and the enhancement of the physical security of such materials is an essential component, which if applied correctly avoids the requirement for an activation of any of the others elements (Detection, Response or Investigation).

The development of training products and workshops that offer law enforcement led security outreach programmes with health, academia and industry are key to the enhancement of nuclear and radiological materials. For example workshops that identify threat, risks, capability gaps and that provide workable solutions to enhance security are vital.

Training courses that address those gaps such as

- Developing security cultures within organisations.
- Raising awareness of personnel security.
- Developing multi agency response plans and joint standard operating procedures.

Are essential in not only supporting law enforcement to coordinate and drive work that secures nuclear materials within their respective countries but which ultimately leads to a much safer world.

We are currently working with our colleagues in prioritized countries on law enforcement led initiatives that strengthen site security and develop multi - agency response plans.

We are working with law enforcement and border policing and encourage the continued protection of borders and their counter nuclear smuggling capability.

We continue to develop and expand our i24/7 information sharing platforms and our Geiger database that includes persons involved in the smuggling of radiological and nuclear material this together with our notice system that alerts nations of persons wanted or of interest with regard to such smuggling activities provides valuable analysis and information that supports the security of nuclear and radiological materials.

In support of this we are expanding our team of analysts who will focus on emerging trends, existing methodologies and activities involving the illicit trafficking of radiological and nuclear materials. This will put us ahead of the curve and allow us to introduce additional preventative measures targeted at specific areas of identified risk.

We are pleased to work closely with our partners IAEA in many ventures and welcome their continued support for the work of the Radiological and Nuclear Terrorism Prevention Unit. Between INTERPOL's 192 member countries and membership of IAEA we have an extensive reach that will further enhance global nuclear security from the threat of terrorism and organized crime.

We cannot succeed in protecting sites, citizens or materials in isolation but together we can build a global platform based on real life operational experiences, which is why conferences such as this are important. They offer opportunities for learning, networking and building relationships, all of which works towards a fully integrated system that can be adopted by the international community.

Thank you.

APPENDIX II:

OUTLINE OF CONFERENCE PROGRAMME

Sunday, 12 November 2017

15:00–18:30	Registration	Registration Desk, Gate 1
16:30–18:30	Welcome Reception (Ground Floor, M-Building)	

Monday, 13 November 2017

08:00–10:00	Registration	Registration Desk, Gate 1
10:00–11:00	Opening Plenary Session 1A (Board Room B/M1)	
11:00–12:45	Main Panel Session 1B (Board Room B/M1)	Universalization of the Convention on the Physical Protection of Nuclear Material and its Amendment
12:45–14:00	Lunch Break and Side Event	
14:00–15:30	Scenario-based Policy Discussion 1C (Board Room B/M1)	
15:30–16:00	Coffee / Tea Break	
16:00–17:30	Main Panel Session 1D (Board Room B/M1)	Implementation of Convention on the Physical Protection of Nuclear Material and its Amendment

Tuesday, 14 November 2017

09:00–10:30	Main Panel Session 2A (Board Room B/M1)	Legislative and Regulatory Framework for the Physical Protection of Nuclear Material in Use, Storage and Transport and for Nuclear Facilities
10:30–11:00	Coffee / Tea Break	Interactive Content Presentations

	(In Front of Board Room B/M1)	
11:00–13:00	Technical Session 2B-1 (Board Room B/M1)	Physical Protection Regime I
11:00–13:00	Technical Session 2C-1 (Board Room A)	Assessments: Methodologies and Tools
11:00–13:00	Technical Session 2D (Press Room)	Implementation of INFCIRC 225 rev 5: Case Studies
11:00–13:00	Technical Session 2E-1 (Conference Room M3)	Legal & Regulatory Requirements: Approaches to Development
13:00–14:00	Lunch Break and Side Event	
14:00–16:00	Technical Session 2B-2 (Board Room B/M1)	Physical Protection Regime II
14:00–16:00	Technical Session 2C-2 (Board Room A)	Assessments: Case Studies and IPPAS Missions
14:00–16:00	Technical Session 2F-1 (Press Room)	Physical Protection Approaches: Methodologies
14:00–16:00	Technical Session 2E-2 (Conference Room M3)	Legal & Regulatory Requirements: Case Studies
16:00–16:30	Coffee / Tea Break	Poster Presentations
16:30–18:30	Technical Session 2B-3 (Board Room B/M1)	Physical Protection Regime III
16:30–18:30	Technical Session 2G	Design Basis Threat

	(Board Room A)	
16:30–18:30	Technical Session 2F-2 (Press Room)	Physical Protection Approaches: Case Studies
16:30–18:30	Technical Session 2E-3 (Conference Room M3)	Legal and Regulatory Requirements: Regulatory Oversight
18:30–20:30	Reception (Ground Floor, M-Building)	

Wednesday, 15 November 2017

09:00–10:30	Main Panel Session 3A (Board Room B/M1)	Developing and Sustaining a Physical Protection Regime for Nuclear Material in Use, Storage and Transport and for Nuclear Facilities
10:30–11:00	Coffee / Tea Break (In Front of Board Room B/M1)	Interactive Content Presentations
11:00–13:00	Technical Session 3B-1 (Board Room B/M1)	Physical Protection Regime: Facility
11:00–13:00	Technical Session 3C-1 (Board Room A)	Training and Capacity Building: Academic
11:00–13:00	Technical Session 3D (Press Room)	Safety-Security Interface
11:00–13:00	Technical Session 3E (Conference Room M3)	Nuclear Material Accountancy and Control
13:00–14:00	Lunch Break and Side Event	
14:00–16:00	Technical Session 3B-2	Physical Protection Regime: Improvements

	(Board Room B/M1)	
14:00–16:00	Technical Session 3C-2 (Board Room A)	Training and Capacity Building: Case Studies
14:00–16:00	Technical Session 3F-1 (Press Room)	Computer Security: PPS I
14:00–16:00	Technical Session 3G-1 (Conference Room M3)	Nuclear Security Culture
16:00–16:30	Coffee / Tea Break	Poster Presentations
16:30–18:30	Technical Session 3B-3 (Board Room B/M1)	Physical Protection Regime: Case Studies
16:30–18:30	Technical Session 3H (Board Room A)	Training & Exercises
16:30–18:30	Technical Session 3F-2 (Press Room)	Computer Security: PPS II
16:30–18:30	Technical Session 3G-2 (Conference Room M3)	Nuclear Security Culture: Assessments

Thursday, 16 November 2017

09:00–10:30	Main Panel Session 4A (Board Room B/M1)	Protection Against Unauthorized Removal of Nuclear Material During Use, Storage and Transport and Sabotage of Nuclear Material and Nuclear Facilities
10:30–11:00	Coffee / Tea Break (In Front of Board Room B/M1)	Interactive Content Presentations

11:00–13:00	Technical Session 4B-1 (Board Room B/M1)	Physical Protection Measures
11:00–13:00	Technical Session 4C (Board Room A)	Training & Capacity Building: Case Studies
11:00–13:00	Technical Session 4D (Press Room)	Insider Threat & Trustworthiness
11:00–13:00	Technical Session 4E (Conference Room M3)	Management of Sensitive Information
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14:00–16:00	Technical Session 4B-2 (Board Room B/M1)	Physical Protection Measures: Facilities
14:00–16:00	Technical Session 4F-1 (Board Room A)	Nuclear Security Transport
14:00–16:00	Technical Session 4G-1 (Press Room)	Computer Security: Approaches
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Friday, 17 November 2017

09:00–11:00	Technical Session 5A (Board Room B/M1)	International and Regional Cooperation
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Annex

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Full conference programme

List of conference participants

Contributed papers and presentations

List of related publications

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