

**Symposium on
International Safeguards:
Building Future Safeguards Capabilities**

5–8 November 2018

PROGRAMME

Organized by the
International Atomic Energy Agency (IAEA)

IAEA Headquarters Vienna, Austria

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INTRODUCTION

Message from Massimo Aparo, IAEA Deputy Director General and Head of the Department of Safeguards



Dear partners and colleagues,

It is my pleasure to welcome you to the thirteenth Symposium on International Safeguards here at IAEA Headquarters in Vienna.

This year, we focus on the theme of building future safeguards capabilities. This encompasses three key elements: innovation, partnership and implementation. We aim to identify innovative technologies that we might exploit for safeguards; to strengthen our partnerships within the safeguards community and bring new partners in; and we want to improve the effectiveness and efficiency of our daily work in implementing safeguards.

It is clear that there is a desire in the safeguards community to foster partnerships and to keep striving to deploy the most effective and efficient ways to implement safeguards. To find the best solutions, we need to share experiences and expertise, to listen to one another and to exchange views. This Symposium is our opportunity to do just that and I encourage you to actively participate in the discussions. The Sessions have been carefully designed to produce results by helping us to address the key challenges facing the safeguards community and to seize opportunities.

As Deputy Director General and Head of the Department of Safeguards, I am grateful for this chance to work with our partners, both inside and outside of the Agency.

Within the Department of Safeguards, we are already working to maximize the collaborative contribution of our skilled and diverse workforce, streamline our processes, and introduce new and innovative technologies in support of our mission. During this symposium, I look forward to enhancing current partnerships and creating new ones, and to hearing new ideas for improving safeguards implementation.

With over 300 papers reflected in this programme, there will be much to discuss. We have assembled the world's foremost experts in the field of nuclear verification as well as many experts from other sectors with promising technologies and techniques of relevance to safeguards. I hope this creates a melting pot of ideas and innovative thinking.

I would like to thank the staff of the Department of Safeguards who have worked hard to make this Symposium a success. As a result of these efforts, I trust that you will find the event engaging, informative and of practical use.

Welcome to Vienna.

Massimo Aparo

Conference Secretariat

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Gabriel E. TERIGI (Deputy Scientific Secretary)

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Lorena TAGANI

Symposium Secretariat gratefully acknowledges the support of external contributors listed in the Annex.

IAEA Mobile Conference Application



Symposium on International Safeguards will be using application (App) for smartphones and tablets for various purposes during the conference. Participants are encouraged to download “IAEA Conference and Meetings” App available at Google Play and the iTunes Store.

Android



iPhone



Functions and features of the App shown below will be used throughout the Symposium. Please fill in the participant survey at the end of the event.



View on up-to-date programme



Check floor map of the sessions and exhibitors



Read abstracts and full-papers of speakers



Participate in polling during sessions



Raise questions to speakers during session

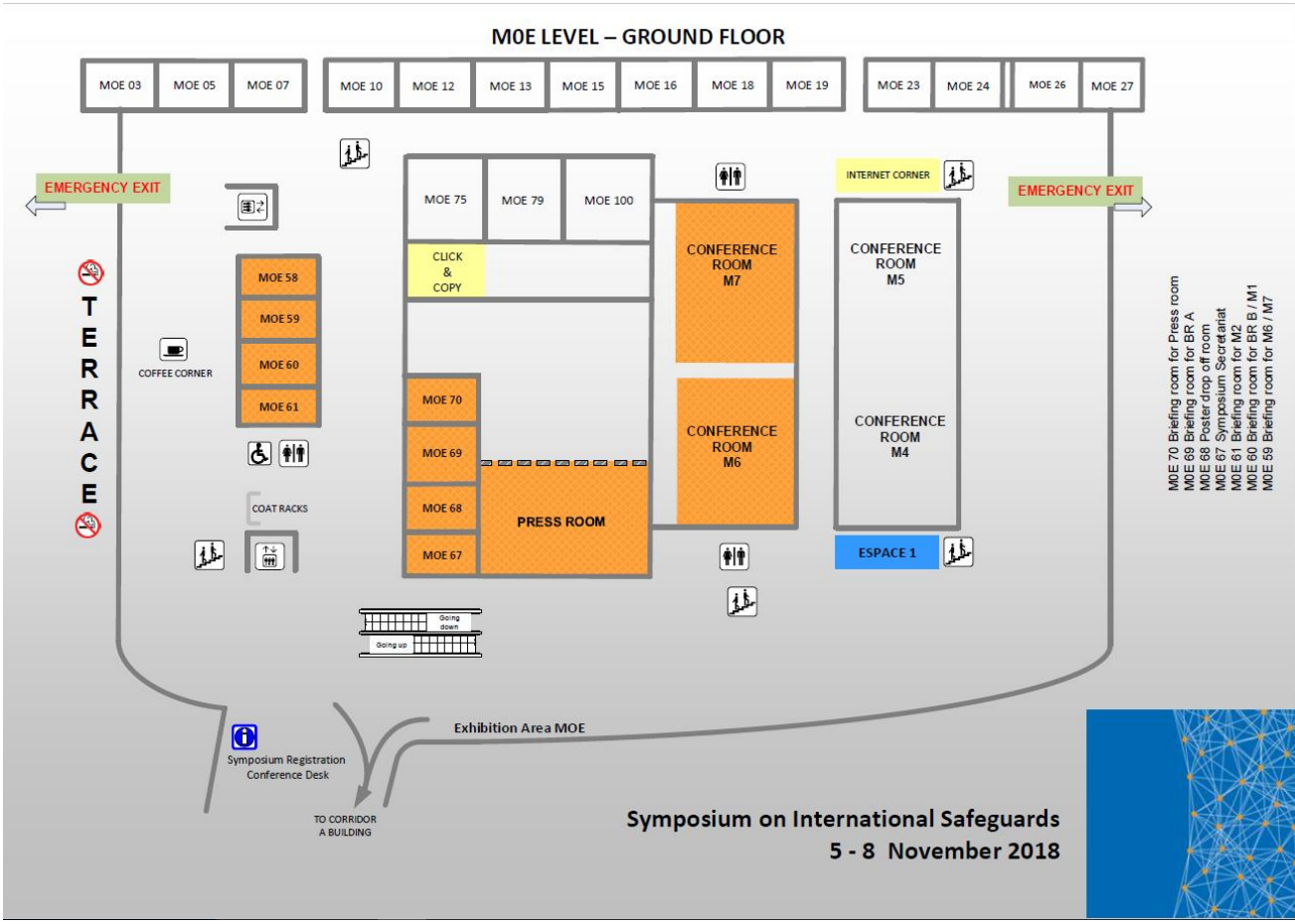


Send message to other participants

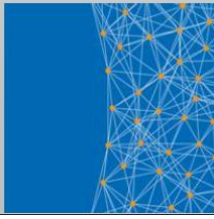


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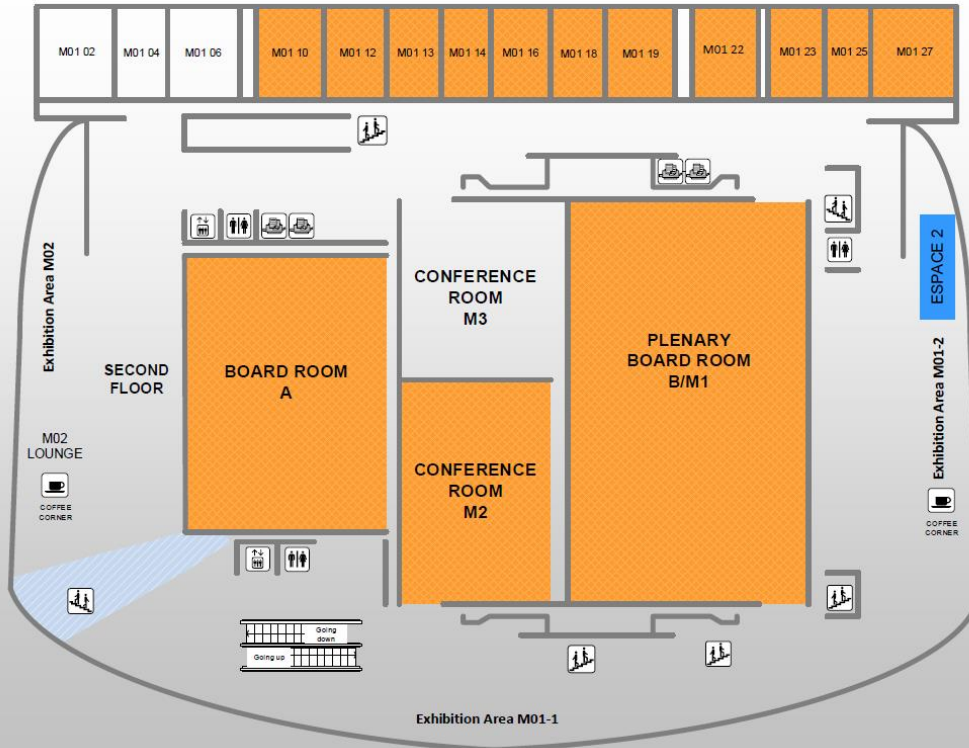
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5 - 8 November 2018**



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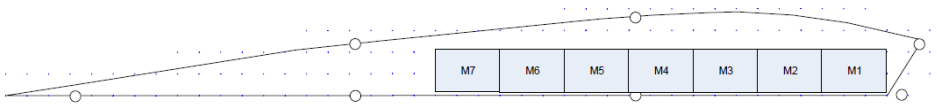


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5 - 8 November 2018



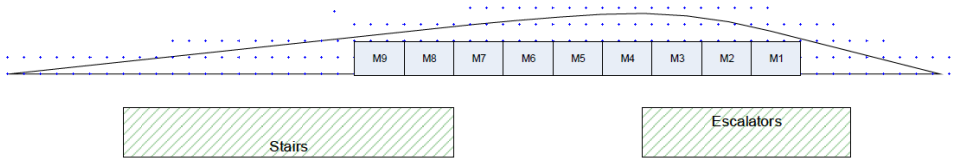
Exhibition Area

M-Building MOE, Exhibition Area



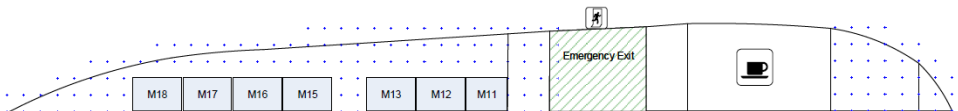
- M1, M2 IAEA Department of Safeguards
- M3, M4 KINAC - Korea Institute of Nuclear Nonproliferation and Control
- M5, M6 U.S. Support Program
- M7 European Commission Support Programme and Joint Research Centre

M-Building M01, Exhibition Area 1



- M1 – CAMECA
- M2 – ATOMTEX
- M3 – Baltic Scientific Instruments
- M4 – Mirion
- M5 – German Support Programme
- M6 – CEA – French Alternative Energies and Atomic Energy Commission
- M7 – JAEA – Japan Atomic Energy Association
- M8 – ORTEC
- M9 – Scienta Sensor Systems

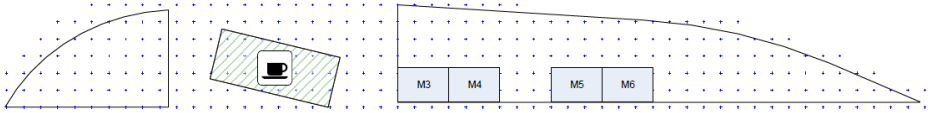
M-Building M01, Exhibition Area 2



- M11 – CAEN Systems
- M12 – Symetrica
- M13 – Strazh

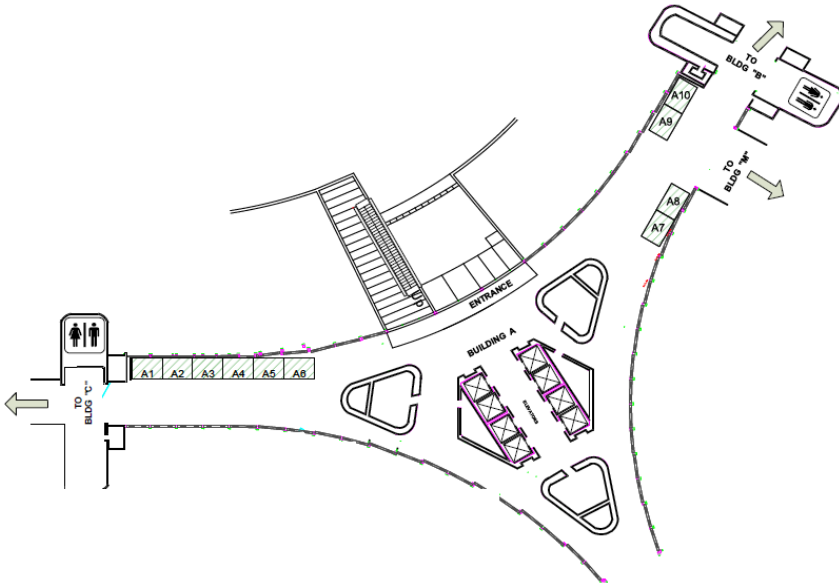
Introduction

M-Building M02



- M3 APSN – Asia-Pacific Safeguards Networks
- M4 ESARDA – European Safeguards Research and Development Association
- INMM – Institute of Nuclear Materials Managements
- M5, M6 IAEA Department of Human Resources

A-Building Level 0E













- A1 Brandenburg University of Applied Sciences
- A2 e-GeosA3 – InnoRIID GmbH
- A4 ECOTEST
- A5 FLIR Systems, Inc.
- A6 GBS Elektronik GmbH
- A7 VCDNP – Vienna Center for Disarmament and Non-Proliferation
- A8 WiN – Women in Nuclear
- A9 IAEA Office of Legal Affairs
- A10 IAEA Nuclear Energy (Nuclear Infrastructure Development Section)

Timetable

Sunday, 4 November 2018

TIME	SESSION	VENUE
10:30-14:00	Registration	VIC, Gate 1

Monday, 5 November 2018

TIME	SESSION	VENUE
08:00-16:00	Registration	VIC, Gate 1
10:00-13:00	 [PLE-S1] Opening Plenary	Board Room B
13:00-14:00	 [PLE-S2] Panelists Luncheon (by invitation)	VIC Restaurant (Mozart Room B)
14:30-15:30	Panel on Improving Gender Balance  [PLE-S3] Policy, Law and Regulatory Careers in Safeguards	Board Room B
	 [PLE-S4] Science, Technology, Engineering and Math (STEM) Careers in Safeguards	Board Room A
16:00-17:30	 [CHA-S1] Keeping Pace with IT Security	M6
16:00-17:30	 [TEC-S1] Recent Examples of Innovation in Safeguards	Board Room B Press Room ESPACE 1&2
16:00-17:00	 [REC-S1] Launching Session: Working for the IAEA	Board Room A
16:00-17:00	 [SSE-S1] SG Collaborative Analysis Platform (CAP)	M2
17:00-17:45	 [REC-S2] Networking with IAEA Staff	Outside Board Room A
17:45-19:00	 [PLE-S5] Reception: Welcome by the IAEA Department of Safeguards	M-building Ground-floor

Introduction

Tuesday, 6 November 2018

TIME		SESSION	VENUE
08:00-16:00		Registration	VIC, Gate 1
09:00-10:30	■ [CHA-S2]	Human Resources - Taking the Initiative	M2
09:00-10:30	■ [NEW-S1]	The Safeguards Challenges of New and Advanced Reactors	Board Room A
09:00-10:30	■ [SGI-S1]	Enhancements and Innovation in Sample Collection and Analysis	Press Room
10:00-11:00	■ [SSE-S2]	Q&A on Safeguards Regulatory Framework with IAEA-Office of Legal Affairs	M6
11:00-12:30	■ [TEC-S2]	Automating and Optimizing Data Collection and Processing at HQ	Board Room A
11:00-12:30	■ [NEW-S2]	New and Advanced Reactors Corner	Press Room
11:00-12:30	■ [SGI-S2]	Establishing and Strengthening State and Regional Systems of Accounting for and Control of Nuclear Material	M2
12:00-13:00	■ [MIX-S1]	Latin America and Caribbean	M7
12:30-13:00	■ [SSE-S3a]	SPRICS for MSSP Task Administration: Demo and Q&A	M6
13:00-14:00	■ [PLE-S6]	Traineeship Reunion Tea & Coffee (by invitation)	VIC Restaurant (Salon C)
13:15-14:15	■ [REC-S3]	Competency Based Recruiting with IAEA	M6
14:00-15:30	■ [CHA-S3]	Globalization and the Changing Supply Chain for Knowledge, Expertise and Goods	Board Room A
14:00-15:30	■ [NEW-S3]	Experience in Safeguards by Design for New Facility Types	M2
14:00-15:30	■ [SGI-S3]	Establishing and Strengthening State and Regional Systems	Press Room
15:30-16:30	■ [MIX-S2]	Safeguards Network Forum	M7
16:00-17:30	■ [CHA-S4]	Non-proliferation and the Globalized Marketplace	M2
16:00-17:30	■ [TEC-S3]	Advancements in Instrumentation, Data Processing and Analysis	Board Room A
16:00-17:30	■ [SGI-S4]	Tools, Approaches and IT Systems for State Safeguards Reporting	Press Room
16:00-17:00	■ [SSE-S4]	Safeguards by Design in Advanced Nuclear Reactors	M6
17:45-19:00	■ [PLE-S7]	Reception: Improving Safeguards Implementation - the Longstanding Commitment of the Support Programmes of the EU Member States and the European Commission	M-building Ground-floor

Introduction

Wednesday, 7 November 2018

TIME		SESSION	VENUE
09:00-10:30	■ [CHA-S5]	Engaging Non-traditional Sectors in Safeguards	M2
09:00-10:30	■ [NEW-S4]	Safeguards for New and Operational Facilities and Cooperation between States and IAEA Safeguards	Board Room A
09:00-10:30	■ [SGI-S5]	Streamlining Information-related Workflows: Small Holders/LOFs and AP Declarations	Press Room
10:30-11:30	■ [SSE-S5]	SG SDP and PR3 Application for State Safeguards	M6
11:00-12:30	■ [TEC-S4]	Visualization for Information Integration	Board Room A
11:00-12:30	■ [NEW-S5]	Safeguards Techniques for New Facilities and Campaigns	Press Room
11:00-12:30	■ [SGI-S6]	ISSAS Missions and SSAC Self-Assessment	M2
12:00-13:00	■ [MIX-S3]	Asia and Pacific	M7
13:15-14:15	■ [REC-S4]	Planning and Preparing a Job Application - 'Personal History Form (PHF)'	M6
14:00-15:30	■ [TEC-S5]	Improving Cooperation and Coordination in Safeguards R&D	Board Room A
14:00-15:30	■ [SGI-S7]	Insights and Feedback from SSAC Discussions	M2
14:00-15:30	■ [SGI-S8]	Improvements in the Field: Enhancements to Measurement Techniques	Press Room
14:30-15:30	■ [SSE-S3b]	SPRICS for MSSP Task Administration: Demo and Q&A	M6
15:30-16:30	■ [MIX-S4]	Africa	M7
16:00-17:30	■ [TEC-S6]	Integration and Evaluation of Verification Data	M6
16:00-17:30	■ [NEW-S6]	Nuclear Newcomers – Strategies and Experiences with Enhancing Safeguards Infrastructure to Support the Introduction of Nuclear Power	M2
16:00-17:30	■ [SGI-S9]	Performance Monitoring in Safeguards	Board Room A
17:45-19:00	■ [PLE-S8]	Part 1 (17:45-18:10): Welcoming Remarks and Special Guest Speaker Part 2 (18:10-19:00): Reception hosted by the Nuclear Threat Initiative	Board Room B M-building First-floor

Introduction

Thursday, 8 November 2018

TIME		SESSION	VENUE
09:00-10:30	■ [TEC-S7]	Blockchain and Safeguards	M2
09:00-10:30	■ [TEC-S8]	Collection, Processing and Analysis of Surveillance Data	Press Room
09:00-10:30	■ [SGI-S10]	Partnerships, Networks, and Regional Collaboration	Board Room A
09:00-10:00	■ [REC-S5]	Preparing for Interviews and SONRU	M6
11:00-12:30	■ [CHA-S6]	Capacity Building - National Initiatives	Board Room A
11:00-12:30	■ [TEC-S9]	Collection, Processing, and Analysis of Satellite Imagery and Open Source Image Data	M2
11:00-12:30	■ [NEW-S7]	Safeguards on Spent Fuel and Decommissioning	Press Room
12:30-13:30	■ [PLE-S9]	Panelists Luncheon (by invitation)	VIC Restaurant (Mozart Room B)
14:00-17:00	■ [PLE-S10]	Closing Plenary	Boardroom B

Friday, 9 November 2018

TIME		SESSION	VENUE
14:00-17:00	■ [SSE-S6]	Workshop on Safeguards Analytical Services	Seibersdorf
09:00-16:00		ESARDA Working Group Meetings	M0E03/05/07/ 75/79

PLENARY SESSIONS

[PLE-S1] Opening Plenary

Date Monday, 5 November
 Time 10:00 – 13:00
 Venue Board Room B

Chair: T. Renis (IAEA)

Part 1: Welcome and Opening Remarks

TIME	SPEAKER		TITLE
10:00-10:10	M. Aparo	IAEA	Welcoming Remarks
10:10-10:25	I. Niemeyer	ESARDA	Remarks from Cooperating Organizations
	C. Crawford	INMM	
	S. Kim	APSN	
10:25-10:45	M. Aparo	IAEA	Opening Remarks
10:45-11:00	Discussion/Q&A		
11:00-11:10	Audience Survey		

Coffee Break

Part 2: Technical Plenary

TIME	SPEAKER		TITLE
11:40-12:35	Technical Keynote Addresses		
	S. Lechner	EC	Opportunities and Challenges for the Safeguards Community
	O. Rozhkov	Russian Federation	IAEA Safeguards: Current Developments, Challenges, and Possible Solutions
	M. Matthews	USA	Cross-Sector Collaboration in Nuclear Risk Reduction: Elevated through Innovation
12:35-12:45	M. Aparo	IAEA	Closing remarks

Opening Plenary Speakers

Chair



RENIS, Therese
Director
Division of Concepts and Planning
Department of Safeguards
International Atomic Energy Agency (IAEA)

Part 1: Welcome and Opening Remarks



NIEMEYER, Irmgard
Head of Nuclear Safeguards and Security
Forschungszentrum Jülich



CRAWFORD, Cary
Senior Program Manager
Safeguards and Security Technologies
Nuclear Security and Engineering Directorate



KIM, Sok Chul
President
Korea Institute of Nuclear Nonproliferation and Control (KINAC)



APARO, Massimo
Deputy Director General
Department of Safeguards
International Atomic Energy Agency (IAEA)

Part 2: Technical Plenary



LECHNER, Stephan
Euratom Safeguards Director
Directorate General for Energy
European Commission



ROZHKOV, Oleg
Deputy Director
Department for Nonproliferation and Arms Control
Ministry of Foreign Affairs of the Russian Federation



MATTHEWS, Morgan
Deputy Director
N Square

**[PLE-S3] Panel on Improving Gender Balance: Policy, Law and
Regulatory Careers in Safeguards**

Date Monday, 5 November
Time 14:30-15:30
Venue Board Room B

Moderators: S. Fernandez Moreno (ABACC)
L. Holgate (NTI)

PRESENTER

A. Wongsangchan	Thailand
H. Al Shehi	United Arab Emirates
B. Boustani	Morocco
O. Elkhamri	United States of America
N. Kozlova	Russian Federation
J. Oddou	France
S.Y. Son	Republic of Korea

Policy, Law and Regulatory Careers in Safeguards Speakers

Moderators



FERNANDEZ MORENO, Sonia
Planning and Evaluation Officer
Brazilian-Argentine Agency for Accounting and Control (ABACC)



HOLGATE, Laura
Vice President
Materials Risk Management
Nuclear Threat Initiative (NTI)

Panelists



WONGSAENGCHAN, Atchara
Deputy Permanent Secretary
Ministry of Science and Technology, Thailand



AL SHEHHI, Hamda
Safeguards Specialist
The Federal Authority for Nuclear Regulation



BOUSTANI, Bouchra
Head
Nuclear Security and Safeguards Department
Moroccan Agency for Nuclear and Radiological Safety and Security



ELKHAMRI, Oksana
Senior Researcher/Regional Technical Manager
U.S. DOE Pacific Northwest National Laboratory



KOZLOVA, Nadezhda
Councilor
Division of IAEA and Other International Organizations
Department of International Cooperation
State Atomic Energy Corporation ROSATOM



ODDOU, Julie
Head
Comité Technique Euratom (CTE), France



SON, So Young
Assistant Director
Nuclear Safeguards and Export Control Division
Nuclear Safety and Security Commission (NSSC)

[PLE-S4] Panel on Improving Gender Balance: Science, Technology, Engineering and Math (STEM) Careers in Safeguards

Date Monday, 5 November
Time 14:30-15:30
Venue Board Room A

Moderators: J. Cooley (USA)
 I. Niemeyer (ESARDA)

PRESENTER

A. Agbab Uthman	Nigeria
D. Al Jilani	Jordan
Y. Aregbe	EC
M. Golshan	United Kingdom
S. Iso	Japan
J. Sample	Canada
V. Nguyen	Viet Nam

STEM Careers in Safeguards Speakers

Moderators



COOLEY, Jill

*Senior Technical Advisor
Global Security Programme
Y-12 National Security Complex*



NIEMEYER, Irmgard

*Head of Nuclear Safeguards and Security
Forschungszentrum Jülich*

Panelists



UTHMAN, Agbab Amina

*Head, Safeguards Division
Senior Regulatory Officer
Nigerian Nuclear Regulatory Authority*



AL JILANI, DUA'A

*Nuclear Safety Specialist
Jordan Atomic Energy Commission (JAEC)*



AREGBE, Yetunde

*Team Leader Nuclear Safeguards
Unit G.2 - Standards for Nuclear Safety, Security & Safeguards
European Commission - Joint Research Centre, Geel
Directorate G - Nuclear Safety & Security*



GOLSHAN, Mina

*Deputy Chief Inspector and Director
Office for Nuclear Regulation*



ISO, Shoko

*Director
Project Promotion Division
Nuclear Material Control Center (NMCC)*



SAMPLE, Jennifer

*Senior Safeguards Accountancy Advisor
Canadian Nuclear Safety Commission*



NGUYEN, Nu Hoai Vi

Vietnam Agency for Radiation and Nuclear Safety

[PLE-S10] Closing Plenary

Date Thursday, 8 November
Time 14:00-17:00
Venue Board Room B

Chair: J. Baute (IAEA), T. Renis (IAEA)

TIME	SPEAKER		TITLE
14:00-14:55	Panel on Key Insights and Outcomes from Thematic Tracks		
	J. Baute	IAEA	Moderator
	T. Renis	IAEA	Moderator
	C. Versino	EC	Challenges (CHA)
	Y. Feldman	USA	Technological Advancements (TEC)
	K. Murakami	Japan	New Facilities and Campaigns (NEW)
	R. Floyd	Australia	Enhancing Safeguards Implementation (SGI)
14:55-15:25	Audience Polling and Introduction of Innovation Panel		
15:25-15:45	Coffee break (submission of questions for panel)		
15:45-15:55	Review of Audience Responses		
15:55-16:55	Innovation Panel - Mechanisms for Future Innovation in Safeguards		
	C. Hinderstein	NTI	Moderator
	J. Rissanen	IAEA	Moderator
	T. Weis	USA	
	O. Hoffmann	Austria	
	A. Aljaziri	UAE	
16:55-17:00	C. Mathews	Scientific Secretary	Symposium Closing

Closing Speakers

Chair



BAUTE, Jacques
Director
Division of Information Management
Department of Safeguards
International Atomic Energy Agency (IAEA)

Panel on Key Insights and Outcomes from Thematic Tracks

Panelists



VERSINO, Cristina
Senior Scientist
European Commission, Joint Research Centre, Nuclear Security



FELDMAN, Yana
International Safeguards and Nonproliferation Analyst
Lawrence Livermore National Laboratory, USA



MURAKAMI, Kenji
Special Assistant to the Minister
Ministry of Foreign Affairs, Japan



FLOYD, Robert
Director General
Australian Safeguards and Non Proliferation Office

Innovation Panel - Mechanisms for Future Innovation in Safeguards

Moderators



HINDERSTEIN, Corey
*Vice President
International Fuel Cycle Strategies
Nuclear Threat Initiative (NTI)*



RISSANEN, Jenni
*Team Leader (SG-Strategic Planning)
Strategic Planning and External Coordination Section
Division of Concepts and Planning
International Atomic Energy Agency (IAEA)*

Panelists



WEIS, Thomas
*Assistant Professor
Industrial Design department at the Rhode Island School of Design*



HOFFMANN, Oliver
*EU Council Presidency ICT Coordinator
Austrian Ministry for Transport, Innovation and Technology*



ALJAZIRI, Abdulaziz
*Deputy CEO
Dubai Future Foundation*

Symposium Closing



Carrie Mathews
*Scientific Secretary, Symposium on International Safeguards
Department of Safeguards
International Atomic Energy Agency (IAEA)*

Receptions

[PLE-S5] Reception: Welcome by the IAEA Department of Safeguards

Date Monday, 5 November

Time 17:45-19:00

Venue M-building, Ground Floor

The IAEA welcomes Symposium attendees to a reception, to converse in a relaxed environment, reconnect with colleagues and reflect on the week ahead.

[PLE-S7] Reception: Improving Safeguards Implementation - the Longstanding Commitment of the Support Programmes of the EU Member States and the European Commission

Date Tuesday, 6 November

Time 17:45-19:00

Venue M-building, Ground Floor

An address by Ambassador Didier Lenoir, Head of Delegation of the European Union to the International Organizations in Vienna, joined by representatives of the Member State Support Programmes of Belgium, the Czech Republic, Finland, France, Germany, Hungary, the Netherlands, Spain, Sweden and the United Kingdom.

All participants are invited to join a reception generously hosted by Member States of the EU and the European Commission.

[PLE-S8] Reception hosted by the Nuclear Threat Initiative

Date Wednesday, 7 November
Time 17:45-19:00
Venue M-building, Board Room B (17:45-18:10); 1st Floor (18:10-19:00)

Part 1 (Board Room B):

Welcoming Remarks (Ms. Corey Hinderstein, Vice President of International Fuel Cycle Strategies, NTI)

Innovation and Safeguards: Lessons from the Vienna State Opera (Mr. Christopher Widauer, Head of Digital Development at Wiener Staatsoper)

Part 2 (M-building 1st Floor):

Reception

All participants are invited to join a reception generously hosted by the Nuclear Threat Initiative.

TECHNICAL SESSIONS

Themes for Technical Sessions



Theme 1: Addressing emerging safeguards challenges (CHA)

This theme looks at a selected set of known challenges facing the safeguards community in the near term, including the potential impact on safeguards of developments such as additive manufacturing, distributed supply chains, and transnational flows of goods and information. The human resource challenges of the safeguards community and innovative ways to address them are explored. Finally, as IT infrastructure and digital data play increasing roles in safeguards, cybersecurity will be discussed.



Theme 2: Leveraging technological advances for safeguards applications (TEC)

This theme builds upon insights gained at the emerging technologies workshop organized by the Department of Safeguards in 2017 and seeks to bring promising advances into the safeguards realm. Topics include: safeguards applications of advances in artificial intelligence; analysis, integration and visualization of multi-source data; shared ledger technology; image processing; business analytics and robotics.



Theme 3: Preparing for safeguards for new facilities, processes and campaigns (NEW)

This theme addresses safeguards considerations around two areas of nuclear industry development. First, challenges and opportunities will be explored for safeguarding selected new reactor designs, and practical strategies for efficient implementation of safeguards at nuclear new builds, such as vendor-buyer engagement, safeguards by design dialogue, and peer-to-peer consultations. Second, increasing decommissioning activities, spent fuel transfer campaigns and long term disposition of spent fuel and waste will be discussed, and promising ideas, technologies and methods will be identified to address specific safeguards needs and opportunities.



Theme 4: Shaping the future of safeguards implementation (SGI)

This theme seeks improvements in daily safeguards business - streamlining and simplifying, building capabilities, resolving challenges and creating effective cooperation. Innovation and sharing of experiences will be a feature, across the full range of safeguards activities and practitioners: from States with limited nuclear material to States with complex fuel cycle facilities. Topics will include optimizing the use of reporting tools; innovations in training, capacity building and knowledge management; the role of regional networks in safeguards and sharing of experiences among such networks; preparing for and implementing new safeguards obligations such as an additional protocol; and safeguards regulation and licensing.

Types of Sessions



(1) Panel Session

A Panel Sessions is a 90-minute facilitated session associated with presentation from the panellists, discussion, and Q&A.

- The session will start with a short scene setting presentation.
- ‘Panellists’ of the Session are requested to deliver a short presentation (approx.7 min) oriented towards the Session Objective.
- ‘Contributors’ are requested to share their expertise and insights during the facilitated discussion.



(2) Roundtable

A Roundtable is a 90-minute facilitated session with statements by each Roundtable Member, followed by facilitated discussion. Audience members are encouraged to join the discussion by using the Conference App.

- The session will start with a short scene setting presentation.
- ‘Roundtable Members’ are requested to deliver a short statement (approx. 5 min) oriented towards the Session Objective.



(3) Interactive Corner

An Interactive Corner is designed to combine the benefits of a poster session and a networking session. The poster presentations will be held in a large open room, separated into areas called “wedges” that are focused on particular topics. Participants may move between wedges according to their interest.

Poster presenters are expected to bring a poster to present their work within the time limits for their wedge. The session will be followed by facilitated discussion and one-on-one discussions.

Posters are be available on Conference App, and available in ‘Board Room B’ for the day following the presentations. Poster presenters and participants can use the Conference App to arrange further interaction and networking.

Acknowledgements

Each Technical Session was planned and organized primarily by one or more IAEA subject matter experts referred to as ‘Session Owners’. These individuals are shown in **bold** in the programme. Session Owners, **A. Braunegger-Guelich** and **A. Yeoh** are not reflected in the Programme.

[CHA-S1] Keeping Pace with IT Security

What cybersecurity and IT challenges will the Department face and what should it consider in strengthening its resilience?

Date Monday, 5 November
Time 16:00-17:30
Venue M6
Style Roundtable

Chairs: S. Partee (IAEA), K.Gagnon (WFP)
Facilitator: **N. Seyffert** (IAEA)
Session Reporter: S. Nghixulifwa (IAEA)
Scene Setter: J. Coyne (IAEA)

16:00-16:05	Scene Setting
16:00-17:00	Short statements from Roundtable Members (5 min/person)
17:00-17:30	Discussion / Q&A

Roundtable Members

ID	PRESENTER		TITLE
CN267-004	N. Doiron	USA	Quantum Computers and Preparing Future-Proof Encryption
CN267-009	E. Kronfuss	Austria	Industrial Cyber Security Standard IEC 62443
CN267-031	J. Choi	USA	A Proactive Approach: Stopping Insiders' Threats with Machine-learning Technology
CN267-131	E. Ampomah-Amoako	Ghana	Safeguards Information Security in Practice at Nuclear Regulatory Authority
CN267-380	S. Lechner	EC	National Infrastructure Security in EU
CN267-381	B. Simetic	Switzerland	Cyber Threat Expert Working with Common Secure Offering a Service of Identifying, Analysing and Providing Information on Cyber Threats and Vulnerabilities
CN267-382	B. Wishard	IAEA	Containment Technology and Instrument Security: Vulnerability Reviews and Assessments of Instrument Security both Physical and Cyber

[CHA-S2] Human Resources – Taking the Initiative

How can we meet the global need for safeguards expertise?

Date Tuesday, 6 November
 Time 09:00-10:30
 Venue M2
 Style Roundtable

Chairs: T. Renis (IAEA), G. Voigt (WiN)
 Facilitator: **J. Crete** (IAEA), **M. Monteith** (IAEA), **P. Kim** (IAEA)
 Session Reporter: D. Springfels (IAEA)
 Scene Setter: M. Monteith (IAEA)

09:00-09:05	Scene Setting
09:05-09:45	Short statements from Roundtable Members (5 min/person)
09:45-10:30	Discussion / Q&A

Roundtable Members

ID	PRESENTER		TITLE
CN267-383	M. Van Sickle S. Mallick	IAEA	Insights from the IAEA Human Capital Development Conference
CN267-095	N. Sumino	Japan	APSN Surveys for the Coordination of Training Efforts in Asia: Results and Challenges
CN267-113	A. Serrano Bentancour	Argentina	Enhancing SSAC's Capabilities - The Nuclear Regulatory Authority Experience
CN267-142	R. Bahran	USA	Integrating Nonproliferation and Safeguards into the Mandatory Curricula of Undergraduate STEM Programs
CN267-212	O. Elkhamri	USA	Advancing Safeguards One Person at a Time: Developing "Safeguards Champions"
CN267-225	W. Janssens	EU	Outreach Education and Training in Nuclear Safeguards and Non-Proliferation of the European Commission, Joint Research Centre
CN267-279	O. Elahi	Canada	Canada's Experience with Building and Maintaining Safeguards Capability

[CHA-S3] Globalization and the Changing Supply Chain for Knowledge, Expertise and Goods

Safeguards implications of strategic trade

Date Tuesday, 6 November
 Time 14:00-15:30
 Venue Board Room A
 Style Panel Session

Chairs: **M. Ardhammar** (IAEA), **W. Janssens** (EC- JRC)

Facilitator: S. Pickett (IAEA)

Session Reporters: J. Druce (IAEA), C. Pasterczyk (IAEA)

Scene Setter: W. Janssens (EC-JRC)

14:00-14:05	Scene Setting
14:05-14:45	Short presentation from Panelists (7 min/person)
14:45-15:30	Discussion / Q&A

Panelists

ID	PRESENTERS		TITLE
CN267-258	M. Ardhammar	IAEA	Responding to Verification Challenges Caused by Increasing Nuclear-related Trade
CN267-304	I Stewart	UK	The Changing Architecture of Nuclear Trade: Trends in Manufacturing Base Supply and Demand
CN267-143	G. Christopher	UK	Additive Manufacturing: The Future for Safeguards
CN267-324	F. Sevini	EU	Emerging Dual-use Technologies and Global Supply Chain Compliance
CN267-191	J. Hastings	Australia	Mapping Technology and Knowledge Transfer Networks
CN267-140	E. Marinova C. Versino	IAEA EU	The Use of Trade Statistics to Map States' Nuclear Related Industrial Capabilities
CN267-326	S. Francis	IAEA	Potential Proliferation Indicators through Analysis of Trade in Non-Controlled Industrial Goods

[CHA-S4] Non-proliferation and the Globalized Marketplace

Perspectives of international organizations, national authorities and industry

Date Tuesday, 6 November
 Time 16:00-17:30
 Venue M2
 Style Roundtable

Chairs: J. Baute (IAEA), **I. Stewart** (UK)

Facilitator: I. Stewart (UK)

Session Reporter: **N. Gillard** (IAEA)

Scene Setter: J. Baute (IAEA)

16:00-16:05	Scene Setting
16:05-16:45	Short statements from Roundtable Members (5 min/person)
16:45-17:30	Discussion / Q&A

Roundtable Members

ID	PRESENTERS		TITLE
CN267-025	M. Alsehaimy	UAE	UAE Nuclear Export Controls: a Success Story
CN267-094	M. Ferguson	Australia	Australian Counter-Proliferation Architecture, Collaboration, Challenges and Opportunities
CN267-384	M. Hibbs	Germany	Trade Networks and Challenges for Safeguards
CN267-386	D. Candano Laris	Mexico	Nuclear Suppliers Group – Addressing Evolving Supply Chain Challenges
CN267-428	C. Abad	France	A View from the Centre of the Marketplace
CN267-387	L. Rockwood	VCDNP	Responding to Evolving Proliferation Challenges – the Experience of the AP
CN267-388	J. Druce	IAEA	The Globalised Marketplace and Analysis
CN267-427	M. Gardner	IAEA	The IAEA Experience

[CHA-S5] Engaging Non-traditional Sectors in Safeguards

How can we engage sectors that have a lot to offer but are unaware of safeguards?

Date Wednesday, 7 November
 Time 09:00-10:30
 Venue M2
 Style Roundtable

Chairs: J. Rissanen (IAEA), C. Hinderstein (NTI)
 Facilitator: **M. Porter** (IAEA)
 Session Reporter: A. Mutluer (IAEA)
 Scene Setter: D. Finker (IAEA)

09:00-09:05	Scene Setting
09:05-09:45	Short statements from Roundtable Members (5 min/person)
09:45-10:30	Discussion / Q&A

Roundtable Members

ID	PRESENTERS		TITLE
CN267-062	A. Dougan	USA	Exploring Disruptive Technology for Safeguards Verification
CN267-071	I. Niemeyer	Germany	The European Research and Development Association (ESARDA) - Communication, coordination and collaboration in safeguards
CN267-112	M. Matthews	USA	Cross-sector Collaboration to Develop New Tools for Communication to Non-experts
CN267-118	Z. Gastelum	USA	The Role of Professional Societies in Effective Communications for International Safeguards
CN267-163	B. Srimok	Thailand	Nuclear Safeguards Communication in Thailand
CN267-180	J. Cooley	USA	Safeguards by Design in Nuclear Engineering Design Courses
CN267-222	Y. Aregbe	EC	EC-JRC initiatives to sustain excellence and diversity in science
CN267-361	R. Floyd	Australia	Australia's Experience with Engaging Researchers Outside the Traditional Safeguards Community

[CHA-S6] Capacity Building – National Initiatives

How do States build and maintain their safeguards workforce?

Date Thursday, 8 November
 Time 11:00-12:30
 Venue Board Room A
 Style Panel Session

Chairs: J.M. Crete (IAEA); M. Beaman (UK)
 Facilitator: O. Elahi (Canada)
 Session Reporter: D. Springfels (IAEA)
 Scene Setter: J.M. Crete (IAEA)

11:00-11:05	Scene Setting
11:05-11:45	Short presentation from Panelists (7 min/person)
11:45-12:30	Discussion / Q&A

Panelists

ID	PRESENTERS		TITLE
CN267-201	H. Al Tamimi	UAE	Capacity Building in the UAE’s Young Nuclear Workforce
CN267-042	S. Korichi	Algeria	Algerian Experience in Training Program of Safeguards Personnel
CN267-172	D. Hanks	USA	Strategy for Strengthening Training and Qualification for U.S. Nuclear Regulatory Commission’s International Safeguards Analysts
CN267-309	E. Morales	Uruguay	Optimizing SSAC Human Resource of ARNR in the Hypothesis of a Nuclear Program
CN267-306	J. Paredes Gilisman	Cuba	The strengthening of the national safeguards system through an integrated 3S approach: a Cuban perspective.
CN267-187	M. Milenović	Serbia	Strengthening Safeguards Capabilities within Public Company Nuclear Facilities of Serbia

Technical Sessions

Contributors

ID	PRESENTERS		TITLE
CN267-014	R. Rossa	Belgium	The Education and Training Offer in Nuclear Safeguards within the EURATOM Research and Training Project "ANNETTE"
CN267-104	G. Sharma	India	An integration of Nuclear Safeguards with Nuclear Security
CN267-133	E. Ampomah-Amoako	Ghana	Development of Safeguards Infrastructure for Nuclear Power Programme in Ghana
CN267-205	S. Bonet Duran	Argentina	Safeguards Capacity Building – Argentine Experience
CN267-259	J. Lee	Korea, Republic of	Education and Training Activities of the International Nuclear Nonproliferation and Security Academy of the ROK

Relevant ESPACE:

- Thursday, 8 November, 10:00-10:30
R. Rossa (Belgium)
"The Education and Training Offer in Nuclear Safeguards within the EURATOM Research and Training Project ANNETTE"

[TEC-S1] Recent Example of Innovation in Safeguards

Are game changing technologies on the horizon for safeguards?

Date Monday, 5 November
 Time 16:00-17:30
 Venue Part 1 - Board Room B; Part 2 – Press Room/ESPACE 1&2
 Style Interactive Corner

Chairs: A. Sokolov (IAEA), C. Everton (Australia)

Facilitators/ Session Reporters: **D. Finker** (IAEA), A. Sokolov (IAEA), C. Everton (Australia), N. Debruyne (IAEA), R. Lovelace (IAEA)

16:00-16:40 Part 1: Lightning Round (at Board Room B)
 1 minute elevator pitch from each participant

16:40-17:30 Part 2: 1-to-1 Poster Presentation and Q&A (at Press Room/ ESPACE)

Wedge 1: Potential Applications of Robotics for Safeguards

(Venue: ESPACE 2)

ID	PRESENTERS		TITLE
CN267-111	S. Horowitz	USA	Analysis of Select Unmanned Aerial Systems Application for International Safeguards
CN267-185	R. Goldston	USA	Autonomous Mobile Directionally and Spectrally Sensitive Neutron Detectors
CN267-195	F. Schneider	Germany	Robotics Challenges for Radiological and Nuclear Reconnaissance Applications
CN267-238	P. Flick	Australia	Robotics for Safeguards Inspection - Drum store inspection
CN267-295	A. Rynes	USA	Soft Robotics for Safeguards Applications in Radiations Environments

Technical Sessions

Wedge 2: Practical Applications of Innovation to Address Safeguards Challenges (Venue: Press Room)

ID	PRESENTERS		TITLE
CN267-061	R. Herschel	Germany	Radar Imaging for Reliable Safeguards in Harsh Environment
CN267-088	N. Anheier	USA	Laser-Based Measurement Tools for Future Enrichment Plant Safeguards
CN267-126	I. Szaloki	Hungary	Development of a new confocal-macro X-ray fluorescence spectrometer built on 3D printer
CN267-144	H. Smartt	USA	Tamper-Indicating Enclosures with Visually Obvious Tamper Response
CN267-159	R. Bencardino	EC	Impact of UCMS on Safeguards effectiveness and efficiency
CN267-239	O. Aruga	Japan	Safeguards at Post Accident Facility - Case of Fukushima Dai-Ichi Site
CN267-302	V. Krylov	Russian Federation	The "BigLock" Smart Locking System

Wedge 3: Virtual and Augmented Reality (Venue: ESPACE 1)

ID	PRESENTERS		TITLE
CN267-021	M. Kuett	Germany	Nuclear Inspections in the Matrix: Virtual Reality for the Development of Inspection Approaches in New Facility Types
CN267-046	D. Cherkashyn	Germany	Augmented Reality off-the-shelf technologies for enhancement of on-site and post-inspection processes
CN267-066	P. Rodriguez	Japan	Virtual Reality - ISCN's Effective Capacity Building Tool
CN267-263	C. Chabal	France	iDROP, a Promising Virtual Reality Tool to Assist Operations in Nuclear Facilities

Technical Sessions

Wedge 4: Innovations in Capacity Building and Inspector Support

(Venue: Press Room)

ID	PRESENTERS		TITLE
CN267-115	Z. Gastelum	USA	Human Performance Testing for Cognitive Science-Informed Information Provision for International Nuclear Safeguards Inspectors
CN267-183	A. Muti	VERTIC	3S integration to support efficient and effective implementation of key Safeguard requirements: an overview of emerging state practices
CN267-200	L. Qassim	UAE	UAE Safeguards: A Frontline in Nuclear Non-Proliferation
CN267-273	C. Norman	IAEA	Plutonium Diversion Detection Training (PDDT) for IAEA inspectors at the Idaho National Laboratory
CN267-294	K. Vetter	USA	3D Mapping and Visualization of Radioactive Sources for Nuclear Safeguards Applications

Relevant ESPACE:

- Tuesday, 6 November, 09:00-09:30
D. Parise (IAEA)
“Integration of OLEM, Load Cells, Temperature and Pressure Data for Effective SGs at Enrichment Plants”
- Tuesday, 6 November, 09:30-10:00
D. Finker (IAEA)
“Demonstration of Robotics for Safeguards”

[TEC-S2] Automating and Optimizing Data Collection and Processing at HQ

How do we enable the analyst to leverage the machine to keep up in the age of expanding data streams?

Date Tuesday, 6 November
 Time 11:00-12:30
 Venue Board Room A
 Style Panel Session

Chairs: **T. Skoeld** (IAEA), C. Hobbs (UK)
 Facilitator: M. Peters (IAEA)
 Session Reporter: Sarah Laderman (IAEA)
 Scene Setter: T. Skoeld

11:00-11:05	Scene Setting
11:05-11:45	Short presentation from Panelists (7 min/person)
11:45-12:30	Discussion / Q&A

Panelists

ID	PRESENTERS		TITLE
CN267-080	J. Diab	Australia	Using machine learning and natural language processing to enhance uranium mining and milling safeguards
CN267-091	Z. Gastelum	USA	Semantic Graphs for Safeguards Data Integration, Pattern Matching, and Event Classification
CN267-128	M. Moran	UK	Exploring Strategic Partnerships Between Algorithms and Analysts: Information Analysis Systems in an Age of 'Big Data'
CN267-188	R. Haddal	USA	Autonomous Systems, AI and Safeguards
CN267-285	I. Stewart	VCDNP	Big Data Analysis for Non-proliferation Purposes
CN267-389	T. Edwald	CTBTO	CTBTO: Learning from Our Data

Technical Sessions

Contributors

ID	PRESENTERS		TITLE
CN267-059	T. Skoeld	IAEA	OSIS 2.0: Optimizing Analyst-Driven Automation of Open Source Information Collection and Processing for Safeguards State Evaluation
CN267-286	I. Stewart	KCL	Report back on International Workshop on the Applicability of New Tools and Technologies for Non-Proliferation
CN267-378	C. Norman	IAEA	The STEPS Project: Re-engineering, Upgrade and Integration of Safeguards Statistical Tools

Relevant ESPACE:

- Monday, 5 November, 13:30-14:30
J. Baute, T. Stepanek, J. Idinger, E. Crawford, A. Keskinen, C. Norman, K. Vilece, T. Mock, M. Kisémbó, T. Skoeld, E. Marinova, M. Fowler, I. Sikaneta, A. Yeoh (IAEA)
"Innovative Approaches to Information Analysis in Safeguards"
- Tuesday, 6 November, 09:30-10:00
I. Stewart (KCL)
"Report Back on International Workshop on the Applicability of New Tools and Technologies for Non-Proliferation"
- Tuesday, 6 November, 12:30-13:00
T. Skoeld (IAEA)
"OSIS 2.0: Optimizing Analyst-Driven Automation of Open Source Information Collection and Processing"

[TEC-S3] Advancements in Instrumentation, Data Processing and Analysis

How can advanced acquisition and analysis tools improve verification activities?

Date Tuesday, 6 November
 Time 16:00-17:30
 Venue Board Room A
 Style Panel Session

Chairs: A. Anichenko (IAEA), M. Morichi (Italy)
 Facilitator: **K. Baird** (IAEA)
 Session Reporter: A. Alessandrello (IAEA)
 Scene Setter: A. Anichenko (IAEA), K. Baird (IAEA)

16:00-16:05	Scene Setting
16:05-16:55	Short presentation from Panelists (7 min/person)
16:55-17:30	Discussion / Q&A

Panelists

ID	PRESENTERS		TITLE
CN267-018	M. Kuett	Germany	Building Safeguards Technologies using Open Source Software and Hardware - Learning from the Maker Movement
CN267-292	L. Worrall	USA	Verification Data Pattern Recognition and Change Detection at the Neutron Instrument Level
CN267-045	L. Holzleitner	EC	Estimation of Dead-Time Loss for High Neutron Count-Rates and associated Multiplicity Correction using Multi-Channel List-Mode Data
CN267-211	A. Trahan	USA	Improved Analysis of Verification Data Using List Mode Neutron Data Collection
CN267-103	M. Corbo	Italy	Developments in Fresh Fuel Collar Measurements with Fast Neutron Detection
CN267-110	M. Grund	Brazil	Fast Neutron Collar Tests at Nuclear Fuel Fabrication Plant in Brazil
CN267-058	E. Branger	Sweden	Improved Cherenkov light prediction model for enhanced DCVD performance
CN267-390	K. Khrustalev	IAEA	Feasibility Form for External Publications and Reports (EPRs)

Technical Sessions

Continued

ID	PRESENTERS		TITLE
CN267-234	K. Miller	USA	Disparate Data Integration for Advanced Facility Monitoring
CN267-097	A. Smejkal	EC	IRAP: A New System for Integrated Analysis and Visualization of Multi-source Safeguards Data: Challenges and Techniques
CN267-391	A. Alessandrello A. Biro	IAEA	Safeguard Vision for Verification Software Tools Based on IRAP

Relevant ESPACE:

- Wednesday, 7 November, 11:00-11:30
J. Longo (IAEA), S. Bertl (IAEA)
“*The Integrated Review and Analysis Package (IRAP)*”

[TEC-S4] Visualization for Information Integration

How can use of visualization be optimized for safeguards information analysis, aggregation and evaluation?

Date Wednesday, 7 November
 Time 11:00-12:30
 Venue Board Room A
 Style Panel Session

Chairs: **M. Barletta** (IAEA), C. Versino (EC)
 Facilitator: Y. Feldman (USA)
 Session Reporter: M. Zarucka (IAEA)
 Scene Setter: M. Barletta (IAEA)

11:00-11:07	Scene Setting
11:10-12:00	Short presentation from Panelists (10 min/person)
12:00-12:30	Discussion / Q&A

Panelists

ID	PRESENTERS	TITLE
CN267-116	J. Reed USA	Visualizing Safeguards Data in a Geographic Information System
CN267-250	M. Auer USA	Interactive data visualization techniques in the statistical analysis of multi-source data
CN267-267	V. Sequeira JRC	3D technologies for nuclear safeguards applications – current and future developments
CN267-393	J.Kusmierczyk- Michulec CTBTO	CTBTO Experience in Visualization, Post-Processing and Fusion of Atmospheric Data
CN267-392	M. Barletta IAEA	Geo-based Data Integration (GDI)

Contributors

ID	PRESENTERS	TITLE
CN267-184	C. Listner Germany	Developing a Tool for Acquisition Path Analysis and Strategy (TAPAS)
CN267-233	K. Miller USA	Capabilities of the Acquisition Path Analysis Tool (APAT) for Integration of Multisource Data

Relevant ESPACE:

- o Wednesday, 7 November, 17:30-18:00
 C. Norman (IAEA)

“SNAKEY: Versatile and Interactive Visualization of Nuclear Material Flows, Inventories and Material Balance Evaluation Results at State Level”

[TEC-S5] Improving Cooperation and Coordination in Safeguards R&D

Leveraging traditional and non-traditional partnerships

Date Wednesday, 7 November
Time 14:00-15:30
Venue Board Room A
Style Panel Session

Chairs: A. Lebrun (IAEA), I. Niemeyer (Germany)

Facilitator: **D. Peranteau** (IAEA)

Session Reporter: S. Laderman (IAEA)

Scene Setter: D. Peranteau (IAEA)

14:00-14:05	Scene Setting
14:05-14:40	Short presentation from Panelists (7 min/person)
14:40-15:30	Discussion / Q&A

Panelists

ID	PRESENTERS		TITLE
CN267-208	A. Prosyantov	Russian Federation	Development of the IAEA Safeguards System and the Role of National Support Programmes in this Process
CN267-215	K. Robertson	Australia	The IAEA Robotics Challenge – Demonstrating Robots for Safeguards Inspections
CN267-203	Z. Palajova	EC	JRC Euratom research and training programme in support to Euratom and international safeguards regimes
CN267-228	K. Abbas	EC	R&D on NDA techniques for nuclear safeguards and security in JAEA-JRC partnership in Ispra
CN267-256	C. Ramos	USA	DNN Safeguards Research and Development: Providing Capabilities that Shape the Future

Contributors

ID	PRESENTERS		TITLE
CN267-010	A. Borella	Belgium	The Belgian Support Programme to IAEA: Past, Present and Future
CN267-109	A. Favalli	USA	An Example of International Collaboration: the Evolution of Active Neutron Interrogation Collar Methods for Modern Fresh Fuel Assemblies
CN267-121	B. Moran	USA	Assessment of the Multi-State Collaboration on Geological Repository Safeguards
CN267-269	A. Weber	France	International Database of Gamma-ray Spectra for U and Pu Isotopic Analysis

[TEC-S6] Integration and Evaluation of Verification Data

Advances and challenges in the analysis of measurement and sample data – how can you help?

Date Wednesday, 7 November
 Time 16:00-17:30
 Venue M6
 Style Roundtable

Chairs: T. Burr (IAEA), T. Krieger (Germany)

Facilitator: **A. Dejeant** (IAEA)

Session Reporters: A. Bevill (IAEA); K. Krzysztozek (IAEA); A. Dejeant (IAEA)

Scene Setter: C. Norman (ID 364)

16:00-16:05	Scene Setting
16:05-16:45	Short statements from Roundtable Members (5 min/person)
16:45-17:30	Discussion / Q&A

Roundtable Members

ID	PRESENTERS		TITLE
CN267-364	C. Norman	IAEA	Evolving Statistical Methodologies for Safeguards (Scene Setter)
CN267-365	C. Norman	IAEA	Towards International Target Values (ITV) 2020
CN267-291	T. Burr	IAEA	Change Detection for Item Differences in Verification Data with Unknown Groups
CN267-366	A. Walczak-Typke	IAEA	Fields of Poppies: A Novel Visualization for Understanding Top-Down Measurement Uncertainty Components
CN267-363	A. Bevill	IAEA	Hybrid Top-Down/Bottom-Up Uncertainty Quantification for Nuclear Material Accountancy
CN267-073	T. Krieger	Germany	Optimal Scheduling of Inspections: Models and Approaches
CN267-232	K. Jarman	USA	Examining Inspection Frequency under the State-Level Concept

Relevant ESPACE:

- o Wednesday, 7 November, 09:30-10:00
 K. Jarman (USA)

“Inspection Frequency Implications of the Broader Conclusion: Case Studies”

[TEC-S7] Blockchain and Safeguards

Can distributed ledger technology benefit IAEA Safeguards?

Date Thursday, 8 November
 Time 09:00-10:30
 Venue M2
 Style Roundtable

Facilitator: **E. Crawford** (IAEA)
 Chairs: **J. Disser** (IAEA), C. Vestergaard (Denmark)
 Session Reporter: B. Adigun (IAEA)
 Scene Setter: E. Crawford; J. Disser

09:00-09:05 Scene Setting
 09:05-09:50 Short statements from Roundtable Members (5 min/person)
 09:50-10:30 Discussion / Q&A

Roundtable Members

ID	PRESENTERS		TITLE
CN267-024	C. Berghoff	Germany	IT Security and Consensus Mechanisms in Private Blockchains
CN267-041	C. Vestergaard	Denmark	Blockchain and Safeguards Information Management: The Potential for Distributed Ledger Technology
CN267-087	S. Frazar	USA	Identifying Safeguards Use Cases for Blockchain Technology
CN267-093	E. Yu	Korea, Republic of	Evaluation of a Blockchain-based Nuclear Materials Accounting Platform in Australia
CN267-129	P. McBurney	UK	Blockchains for Safeguards: Technical, Legal and Political Considerations
CN267-224	J. Jeon	Korea, Republic of	The Conceptual Introduction of Internet of Things (IoT) and Blockchain Technology in Nuclear Material Accounting and Control at Facilities
CN267-265	S. Nonneman	EC	Distributed Ledger Technology Used in Nuclear Non-proliferation Safeguards?
CN267-394	I. Naumann	IAEA	Information Security in Nuclear Safeguards: Authentication, Encryption and Compliance with IT Security Standards: How does Blockchain Fit In?

[TEC-S8] Collection, Processing and Analysis of Surveillance Data

Safeguards surveillance technologies for the 2030s?

Date Thursday, 8 November
 Time 09:00-10:30
 Venue Press Room
 Style Panel Session

Facilitator: **M. Moeslinger** (IAEA)
 Chairs: A. Lavietes (IAEA), S. Rocchi (IAEA), V. Sequeira (EC)
 Session Reporter: S. Uygur (IAEA)
 Scene Setter: M. Moeslinger (IAEA)

09:00-09:05	Scene Setting
09:05-09:40	Short presentation from Panelists (7 min/person)
09:40-10:30	Discussion / Q&A

Panelists

ID	PRESENTERS		TITLE
CN267-068	Y. Cui	USA	Using Deep Machine Learning to Conduct Object-based Identification and Motion Detection on Safeguards Video Surveillance (Surv)
CN267-220	C. Versino	EC	VideoZoom Roadmap
CN267-141	P. Sankaran Nair	India	Implementation experiences on IAEA remote monitoring in India
CN267-097	A. Smejkal	EC	IRAP: a new system for integrated analysis and visualization of multi-source safeguards data. Challenges and techniques

Contributors

ID	PRESENTERS		TITLE
CN267-396	J. Longo	IAEA	IAEA Perspective on IRAP, Surveillance Review

Relevant ESPACE:

- o Wednesday, 7 November, 11:00-11:30
 J. Longo (IAEA), S. Bertl (IAEA)
 “IRAP and its Application”

[TEC-S9] Collection, Processing, and Analysis of Satellite Imagery and Open Source Image Data

How can open source or commercially available visual data be best utilized in IAEA Safeguards?

Date Thursday, 8 November
 Time 11:00-12:30
 Venue M2
 Style Roundtable

Chairs: **M. Fowler** (IAEA), M. Hanham (USA)

Facilitator: **A. Larson** (IAEA)

Session Reporter: S. Duckworth (IAEA), G. Dupuy (IAEA), S. Ates Gunes (IAEA)

Scene Setter: A. Larson (IAEA), M. Fowler (IAEA)

11:00-11:05	Scene Setting
11:05-11:50	Short statements from Roundtable Members (5 min/person)
11:50-12:30	Discussion / Q&A

Roundtable Members

ID	PRESENTERS		TITLE
CN267-032	M. Canty	Germany	Change Detection Using Sentinel-1 Synthetic-aperture Radar on the Google Earth Engine Platform
CN267-189	R. Haddal	USA	Detection via Persistence: Leveraging Commercial Imagery from Small Satellites
CN267-257	T. Warner	USA	Exploitation of high frequency acquisition of imagery from satellite constellations within a semi-automated change detection framework for IAEA safeguards purposes
CN267-360	I. Sikaneta	IAEA	Change Detection Methods for Radar Images - an overview of promising methods
CN267-165	C. Dill	USA	Leveraging Computer Vision for Imagery Analytics
CN267-064	Y. Feldman	USA	Integrating Visual Data into Safeguards Implementation and the State Evaluation Process
CN267-305	L. Bodo	UK	Safeguards and Multi Media Data: Appraisal of New Techniques

Relevant ESPACE:

- o Wednesday, 7 November, 15:30-16:00
 M. Fowler (IAEA)

“Optimizing the Use of Multimedia Information in IAEA Safeguards: Introducing the Safeguards Multimedia Information Analysis and Integration Project (SG-MM)”

[NEW-S1] The Safeguards Challenges of New and Advanced Reactors- Partnerships

How can partnerships improve safeguards implementation in new NPPs?

Date Tuesday, 6 November
 Time 09:00-10:30
 Venue Board Room A
 Style Panel Session

Chairs: C. Ciuculescu (IAEA), S. Abousahl (EC)

Facilitator: **D. Tadjer** (IAEA)

Session Reporter: Jay Disser (IAEA)

Scene Setters: P. Becker (IAEA), J. Doo (IAEA)

09:00-09:05	Scene Setting
09:05-09:40	Short presentation from Panelists (7 min/person)
09:40-10:30	Discussion / Q&A

Panelists

ID	PRESENTERS		TITLE
CN267-022	B. Van der Ende	Canada	Stand-Off Nuclear Safeguards and Monitoring for Remote Micro-SMRs
CN267-063	S. Adams	USA	Challenges and Notional Solutions for the Application of Agency Safeguards on Transportable Small Modular Reactors
CN267-231	A. Finan	USA	Addressing Nonproliferation Needs in Advanced Reactors
CN267-261	J. Lee	Korea, Republic of	Contribution of the ROK for Supporting Establishment of National Safeguards System through Bilateral Cooperation in the Middle East Region

Contributors

ID	PRESENTERS		TITLE
CN267-397	R. Labella Y. Afifi	IAEA	Safeguarding Modular Reactors and Safeguards Approach for new Research Reactors

[NEW-S2] The Safeguards Challenges of New and Advanced Reactors

How can the Agency implement safeguards on new reactor types and deal with proliferation resistance and safeguardability?

Date Tuesday, 6 November
 Time 11:00-12:30
 Venue Press Room
 Style Interactive Corner

Corner Facilitator: **J. Morizot** (IAEA)

Facilitators: Wedge 1 – P. Becker (IAEA)
 Wedge 2 – Y. Afifi (IAEA)
 Wedge 3 – S. Morrell (IAEA)

Session Reporters: Wedge 1 – J. Doo (IAEA)
 Wedge 2 – Y. Afifi (IAEA)
 Wedge 3 – C. Krawec (IAEA)

11:00-11:40 Presentation on posters (5 min/person)
 11:40-12:00 Facilitated discussion
 12:00-12:30 1-to-1 poster presentation/Q&A/networking

Wedge 1: Safeguards Approaches for Advanced Reactors

ID	PRESENTERS		TITLE
CN267-084	A. Worrall	USA	Molten Salt Reactors and Associated Safeguards Challenges and Opportunities
CN267-107	J. Guo	China	Safeguards challenges and consideration on nuclear safeguards for HTR-PM
CN267-114	D. Al-Jilani	Jordan	Wet Solid Radioactive Waste and Shielding as Alternate Detective Measures
CN267-151	B. Xia	China	On the Correlations of Burnup and Material Amounts in PB-HTR Material Accounting
CN267-152	T. Shiba	Japan	Proliferation Resistance and Safeguardability of Very High Temperature Reactor
CN267-276	A. Nilsson	Sweden	Advanced Reactor Design – Ensuring Excellence in Non-Proliferation and Security
CN267-002	D. De Bruyn	Belgium	MYRRHA Safeguards Approach by Design

Technical Sessions

Wedge 2: Small Modular Reactors (SMRs)

ID	PRESENTERS		TITLE
CN267-178	R. Otto	USA	International Safeguards for Microreactors: Opportunities and Challenges for the International Atomic Energy Agency
CN267-247	V. Galitskikh	Russian Federation	Design Solutions for Nuclear Transportable Power Plants with SMRs to Facilitate the Application of the IAEA Safeguards and Support the Non-proliferation Regime
CN267-248	N. Salnikova	Russian Federation	Non-proliferation Aspects for Transportable Nuclear Plant Lifecycle

Wedge 3: New Fuel Cycles

ID	PRESENTERS		TITLE
CN267-089	E. Uribe	USA	Protactinium presents a challenge for safeguarding thorium reactors
CN267-102	A. Chebeskov	Russian Federation	Fast reactors, fuel cycles, and problems of nuclear nonproliferation
CN267-127	G. Cojazzi	EC	The Gen-IV Proliferation Resistance and Physical Protection methodology applied to Gen-IV system designs: some reflections
CN267-230	D. Henzlova	USA	Alternative Fuel cycle Materials Verification and Monitoring Using Advanced High-Dose Neutron Detectors
CN267-293	L. Worrall	USA	Safeguards Challenges and Safeguards Technology Needs Assessment for Leading Thorium Fuel Cycles

[NEW-S3] Experience in Safeguards by Design for New Facility Types

How can the community work better in application of safeguards by design?

Date Tuesday, 6 November
 Time 14:00-15:30
 Venue M2
 Style Roundtable

Chairs: J. Whitlock (IAEA), N. Khlebnikov (Russia)

Facilitator: **J. Dissler** (IAEA)

Session Reporter: **B. Boyer** (IAEA)

Scene Setter: M. Ingegneri (IAEA)

14:00-14:05	Scene Setting
14:05-14:50	Short statements from Roundtable Members (5 min/person)
14:50-15:30	Discussion / Q&A

Roundtable Members

ID	PRESENTERS		TITLE
CN267-083	M. Murtezi	EC	Getting ready for final disposal of spent fuel in Finland – lessons learned down the path of the Safeguards by Design cooperation
CN267-105	S. Agrawal	India	Incorporating Safeguards by Design Concepts in 700 MW Indian PHWR KAPS-3&4
CN267-156	J. Shimizu	Japan	Experiences and Challenges of Safeguards By Design for J-MOX
CN267-194	K. Pellinen	Finland	Starting from scratch – Safeguards by design work in the Hanhikivi-1 NPP Project
CN267-197	M. Goodman	USA	New safeguards tools for research reactors
CN267-221	K. Robertson	Australia	Safeguards by Design for Storage and Disposal of Nuclear Waste
CN267-289	B. Xia	China	Implementation of Safeguards Measures at the High Temperature Gas-Cooled Reactor Pebble-Bed Module (HTR-PM) in China and Proposed Safeguards by Design for Units to be Exported to Other States

Technical Sessions

Continued

ID	PRESENTERS		TITLE
CN267-398	J. Phillips	IAEA	Perspective of IAEA-NE on Early Engagement, Partnership between SG-NE
CN267-399	M. Krause	IAEA	IAEA Plans for Engagement and New Partnerships with Reactor Vendors
CN267-400	S. Poirier P. Becker	IAEA	Experiences in Safeguards by Design – IAEA's Perspective

[NEW-S4] Safeguards for New and Operational Facilities and Cooperation between States and IAEA in Safeguards

What are the challenges in safeguarding new and operational facilities and how cooperation between States and IAEA Safeguards could contribute?

Date Wednesday, 7 November
Time 09:00-10:30
Venue Board Room A
Style Panel Session

Chairs: S. Goncalves (IAEA), V. Kuchinov (Russia)

Facilitator: **S. Hambaryan** (IAEA)

Session Reporter: A. Baravikova (IAEA)

Scene Setter: S. Hambaryan (IAEA)

09:00-09:05	Scene Setting
09:05-09:40	Short presentation from Panelists (7 min/person)
09:40-10:30	Discussion / Q&A

Panelists

ID	PRESENTERS	TITLE
CN267-067	M. Hori Japan	Status of Nuclear Reactors Nuclear Fuel Cycle and R&D Facilities in Japan
CN267-280	S. Burger Canada	Safeguards for New Types of Nuclear Facilities and Campaigns in Canada
CN267-036	K. Aymanns Germany	Cooperation between Germany, the European Commission and the IAEA in safeguarding spent fuel intermediate storage facilities
CN267-139	M. Lahti Finland	Implementation of Safety, Security and Safeguards in the Finnish Encapsulation plant and Geological repository project from the operator's perspective

Technical Sessions

Contributors

ID	PRESENTERS		TITLE
CN267-52	J. Heinonen	Finland	Regulating the first spent fuel final repository in the world – Finnish pioneering solutions
CN267-174	S. Watanabe	Japan	A proposal of decommissioning procedures for bulk facilities
CN267-281	S. Burger	Canada	New Technologies for Safeguards Implementation: A Case Study for Improving Measurement of Bulk Uranium
CN267-367	C. Portaix	IAEA	Evolution of Material Balance Evaluation at Gas Centrifuge Enrichment Plants
CN267-401	N. Edmonds	UK	Experiences at Sellafield
CN267-426	N. Kozlova	Russian Federation	Safeguards Significance, Support and Activities - Perspective of Vendor

[NEW-S5] Safeguards Techniques for New Facilities and Campaigns

Repositories and spent fuel measurements

Date Wednesday, 7 November
Time 11:00-12:30
Venue Press Room
Style Interactive Corner

Corner Facilitator: **M. Ingegneri** (IAEA)
Facilitators: Wedge 1 – M. Ingegneri (IAEA)
Wedge 2 – A. Shephard (IAEA), T.White (IAEA)
Session Reporter: Wedge 1 – A. Kaminski (IAEA)
Wedge 2 –P. Peura (IAEA)

Wedge 1: Safeguards for Long Term Storage and Geologic Repository

11:00-11:40 Presentation on posters (5 min/person)
11:40-12:00 Facilitated discussion
12:00-12:30 1-to-1 poster presentation/Q&A/networking

ID	PRESENTERS		TITLE
CN267-026	O. Okko	Finland	Safeguards Usability of Monitoring for Safety at the Olkiluoto Repository Site
CN267-069	J. Iwafuchi	Japan	Study on Applicability of Ultrasonic Inspection Technique to Improve the CoK of Geological Disposal Canister Containing Spent Fuels
CN267-120	B. Moran	USA	Performance Requirements of Technical Measures for Geological Repository Safeguards
CN267-218	C. Vieh	Germany	A generic safeguards approach for a High Level Waste (HLW) repository in Germany
CN267-227	I. Dricker	USA	Comparison of Detection and Location Capabilities of Surface and Subsurface Microseismic Monitoring Algorithms for The Purposes of Monitoring Underground Storage Facilities

Technical Sessions

Wedge 2: Novel techniques for spent fuel measurement

11:00-11:10	Introduction by Inspectors of Current Techniques and Operational Needs Regarding Spent Fuel Verification
11:10-11:20	Development and Implementation of PGET (poster 377)
11:20-11:40	New SNF Verification Approaches (posters 169 and 214 + discussion)
11:40-11:55	Models of Multivariate Analysis for SNF Verification (presentation of posters 037 and 057 + discussion)
11:55-12:20	Muon Techniques for Safeguards Verification (presentation of posters 048, 090 and 179 + discussion)
12:20-12:30	1-to-1 poster presentation/Q&A/networking

ID	PRESENTERS		TITLE
CN267-214	A. Iyengar	USA	Development of a Nuclear Fuel Safeguards Verification Technology for New Facility Types
CN267-037	L. Caldeira Balkestahl	Sweden	Nuclear Safeguards Verification of Modelled Partial Defect PWR fuel using Multivariate Analysis
CN267-057	Z. Elter	Sweden	Nuclear Safeguards Verification of Modelled Spent BWR Fuel using a Multivariate Analysis Approach
CN267-048	P. Checchia	Italy	Muography of Spent Fuel Containers for Safeguards Purposes
CN267-090	R. Kaiser	UK	Cosmic-Ray Muography
CN267-179	G. Yang	UK	Muon Imaging for Safeguards Applications

[NEW-S6] Nuclear Newcomers – Strategies and Experiences with Enhancing Safeguards Infrastructure to Support the Introduction of Nuclear Power

Perspectives from regulators and operators

Date Wednesday, 7 November
Time 16:00-17:30
Venue M2
Style Roundtable

Chairs: S. Fanielle (IAEA), E. Martikka (Finland)
Facilitator: **S. Poe** (IAEA)
Session Reporter: D. Springfels (IAEA)
Scene Setter: S. Poe (IAEA)

16:00-16:05	Scene Setting
16:05-16:50	Short statements from Roundtable Members (5 min/person)
16:50-17:30	Discussion / Q&A

Roundtable Members

ID	PRESENTERS		TITLE
CN267-005	P. Tawfick	Egypt	Effective Implementation of Safeguards by Design at Nuclear New Builds
CN267-038	I. Mundia	Kenya	Embracing Nuclear Safeguards Culture in Kenya
CN267-167	J. Ayivor	Ghana	Establishing SSAC for embarking countries – case study of Ghana
CN267-308	L. Artsiomava	Belarus	Implementation of IAEA Safeguards at Belarus NPP
CN267-261	J. Lee	Korea, Republic of	ROK's Supplier Support to Strengthening Newcomer Preparedness
CN267-356	N. Al Ketbi	UAE	New Build, New Safeguards – Barakah

[NEW-S7] Safeguards on Spent Fuel

Finding efficiencies without compromising effectiveness

Date Thursday, 8 November
Time 11:00-12:30
Venue Press Room
Style Panel Session

Chairs: G. Morris (IAEA), S. Johnson (USA)

Facilitator: **M. Ingegneri** (IAEA)

Session Reporter: A. Kaminski (IAEA)

Scene Setter: G. Morris (IAEA)

11:00-11:05	Scene Setting
11:05-11:40	Short presentation from Panelists (7 min/person)
11:40-12:30	Discussion / Q&A

Panelists

ID	PRESENTERS		TITLE
CN267-101	S. Vaccaro	EC	Challenges and advancements in spent fuel safeguards in the European Union
CN267-358	T. White	IAEA	Verification of Spent Nuclear Fuel Using Passive Gamma Emission Tomography
CN267-043	J. Gerza	Czech Republic	Cask sealing procedure applied in NPP Dukovany
CN267-053	L. Hildingsson	Sweden	Disposal of Spent Nuclear Fuel in Sweden: Safeguards Considerations
CN267-085	R. Finch	USA	Effective Access Monitoring at Geological Repositories: A Systems Study

[SGI-S1] Enhancements and Innovation in Sample Collection and Analysis

Spotlight on new methodologies and quality assurance of analytical results for Safeguards

Date Tuesday, 6 November
 Time 09:00-10:30
 Venue Press Room
 Style Interactive Corner

Corner Facilitator: **S. Balsley** (IAEA)

Facilitator: Wedge 1 – Y. Aregbe (EC)

Wedge 2 – C. Kim (IAEA)

Wedge 3 – S. Bulyha (IAEA)

Session Reporter: M. Humphrey (IAEA), S. Balsley (IAEA)

09:00-09:05	Introduction from Session Owner
09:05-09:10	Introduction from Wedge Owners
09:10-09:45	Presentation on posters (5 min/person)
09:45-10:30	1-to-1 poster presentation/Q&A/networking

Wedge 1: Destructive Analysis - DA Measurement Enhancements through Collaboration

ID	PRESENTERS		TITLE
CN267-034	H. Okazaki	Japan	Technical Support from the IAEA for Improvement of Operator's Analytical Quality for Safeguards
CN267-039	M. Crozet	France	Contribution of Interlaboratory Comparison in the Production of a ²⁴³ Am Spike Certified Reference Material
CN267-106	E. Zuleger	EC	Strengthening Safeguards Laboratories – A Benefit to IAEA
CN267-134	J. Zsigrai	EC	Shaping Together the Future of the Hybrid K-Edge / K-XRF Technique
CN267-168	S. Hara	Japan	Japanese SSAC Contribution to the International Target Values
CN267-229	S. Puydarrieux	France	When Non-significant Measurements Values have been Censored
CN267-260	M. Crozet	France	Inter-Laboratory Comparison for Trace Analysis: EQRAIN Traces Proficiency Testing Organized by CETAMA

Technical Sessions

Wedge 2: Destructive Analysis – Technological Advancements

ID	PRESENTERS		TITLE
CN267-023	M. Yamamoto	Japan	Separation Technique Using Single Column Chromatography for Safeguards Verification Analysis of Uranium and Plutonium in Highly Active liquid Waste by Isotope Dilution Mass Spectrometry
CN267-253	C. Ramos	USA	Alternative Destructive Analyses (DA) Methods for Safeguards
CN267-297	B. McDonald	USA	Determining Uranium Mass in Powder Samples with Spectral Radiography
CN267-320	C. Kim	IAEA	A Combined Method of TIMS and HRGS for Rapid Determination of Pu Concentrations in Safeguards Samples at the On-Site Laboratory in the Rokkasho Reprocessing Plant

Wedge 3: Environmental Sampling and Analysis

ID	PRESENTERS		TITLE
CN267-328	S. Neumeier	Germany	Establishing Production and Provision of Microparticle Reference Materials for Particle Analysis through Collaboration
CN267-147	S. Shaban	Egypt	Optimization of SEM and EDX Measurements for Swipes and Samples Containing Uranium by MATLAB
CN267-357	L. Sangely	IAEA	Isotopic Analysis of U-Pu Mixed Particles Using Large-Geometry Secondary Ion Mass Spectrometry (LG-SIMS)
CN267-209	I. Elantsev	Russian Federation	SIMS Application to Determination of the Age of Uranium Materials on the Results of Microparticle Analysis
CN267-319	C. Brennan	USA	Age Dating of Uranium Particles
CN267-226	S. Konegger-Kappel	IAEA	Analysis of Single U-rich Particles by Fission Track Laser Ablation ICP-MS
CN267-213	K. Zhizhin	Russian Federation	Determination of Trace Amounts of Plutonium Isotopes in Environmental Samples Containing Uranium and Plutonium Particles by Using ICP MS

Relevant ESPACE:

- Tuesday, 6 November, 13:00-13:30
T. Mock, (IAEA)
“*alCHEMy: A Structured Approach to Exploit Elemental Data in Particles*”
- Thursday, 8 November, 12:30-13:00
M. Humphrey, S. Vogt, (IAEA)
“*Environmental Sampling Demonstration*”

[SGI-S2] Establishing and Strengthening State and Regional Systems of Accounting for and Control of Nuclear Material (S/RSACs)

Sharing experiences in safeguards implementation at the State and Regional level

Date Tuesday, 6 November
 Time 11:00-12:30
 Venue M2
 Style Roundtable

Chairs: V. De Villiers (IAEA), M. Marzo (ABACC)
 Facilitator: **T. Jeffrey** (IAEA)
 Session Reporter: T. Stepanek (IAEA)
 Scene Setter: T. Jeffrey (IAEA)

11:00-11:05	Scene Setting
11:05-11:50	Short statements from Roundtable Members (5 min/person)
11:50-12:30	Discussion / Q&A

Roundtable Members

ID	PRESENTERS		TITLE
CN267-056	I. Popovici	Romania	Guidelines for the application of the EURATOM / IAEA safeguards for small holders of nuclear materials from Romania
CN267-060	V. Pitel	Russian Federation	Russian Federation System of State's Control of Nuclear Materials and its role at IAEA Safeguards Implementation
CN267-100	K. Mrabit	Morocco	Implementing safeguards within Kingdom of Morocco: Achievements and challenges
CN267-138	H. Kasiwattanawut	Thailand	Updated Relevant Thailand Regulatory Framework in the Nuclear Energy for Peace Act (2016) Regarding Nuclear Safeguards and Additional Protocol
CN267-202	H. Al Shehhi	UAE	UAE Safeguards Implementation: A Roadmap to 3S Information Management
CN267-277	K. Heppell-Masys	Canada	Updating the Domestic Compliance Program to Strengthen Canada's SSAC
CN267-331	N. Johnson	Liberia	Steps in Bridging Gaps of Safeguards Activities for Developing Countries

[SGI-S3] Establishing and Strengthening State and Regional Systems

Experiences of the States: challenges faced, solutions and needs for further support

Date Tuesday, 6 November
 Time 14:00-15:30
 Venue Press Room
 Style Interactive Corner

Corner facilitator: Bob L'Heureux (IAEA)

Facilitator: Wedge 1 – **E. Agboraw** (IAEA)

Wedge 2 – C. de Francia (IAEA)

Wedge 3 – M. Basturk-Tatlisu (IAEA)

Session Reporters: N. Mlwilo (IAEA), S. Fanielle (IAEA), A. Galizzi de Scheitl (IAEA)

14:00-14:05	Introduction from Wedge Owners
14:05-15:10	Presentation on posters (5 min/person) + Q&A
15:10-15:30	1-to-1 poster presentation/Q&A/networking

Wedge 1: Establishing and Strengthening S/RSACs

ID	PRESENTERS		TITLE
CN267-015	R. Zaghouane	Algeria	Strengthening the SSAC Capabilities through the Establishment of a Safeguards Laboratory (SGL)
CN267-020	R. Pashayev	Azerbaijan	Achieved progress and faced challenges in implementation of the safeguards obligations in the Republic of Azerbaijan
CN267-054	A. Djibo	Niger	Safeguards and Additional Protocol Implementation in Niger, Prospects and Challenges
CN267-124	C. Manda	Malawi	Malawi's Experience in the Implementation of Safeguards: Achievements and Challenges
CN267-155	G. Basilia	Georgia	Implementation of Safeguards in Georgia
CN267-322	L. Alsamwi	Iraq	State's Competent Authority and Sustainability of Safeguard System for Iraqi Facilities
CN267-376	F. Taha	Sudan	Establishing Safeguards in the Republic of Sudan

Technical Sessions

Wedge 2: Legal/Regulation

ID	PRESENTERS		TITLE
CN267-008	M. Addo	Ghana	Accession to the Safeguards Agreements: Sharing Ghana's Experience from the Historical Perspective
CN267-029	R. Karanam	India	An Overview of Important Features of India's Safeguards Agreement (INFCIRC/754)
CN267-123	K. Tun	Myanmar	Strengthening National Safeguards Implementation Infrastructure and Building Future Safeguards Capabilities in Myanmar
CN267-158	A. Riahi	Tunisia	Tunisia's Plan to Develop a New Legal and Regulatory Framework to Bring the Additional Protocol into Force
CN267-278	J. Sample	Canada	Development of a Comprehensive Safeguards Regulatory Document for the Canadian Nuclear Industry
CN267-313	K. Gaihre	Nepal	Regulatory Infrastructure in Nepal

Wedge 3: Cooperation and Engagement

ID	PRESENTERS		TITLE
CN267-246	O. Aruga	Japan	Enhancing Productivity and Efficiency in Safeguards Implementation through Upgraded Collaboration between the IAEA and Member States
CN267-204	L. Pardo	Argentina	Reinforcing Nuclear Safeguards Effectiveness through Cooperation
CN267-245	Y. Hwang	Korea, Republic of	ROK-IAEA Enhanced Cooperation Arrangements (ECA)
CN267-148	N. Boye Faye	Senegal	Implementation of the Comprehensive Safeguards Agreement and ratification of the Additional Protocol in Senegal
CN267-145	N. Bello	Nigeria	Strategic Plan for Safeguards Implementation in Nigeria

[SGI-S4] Tools, Approaches, and IT Systems for State Safeguards Reporting

Streamlining and simplifying collection, validation and submittal of Safeguards information to the IAEA

Date Tuesday, 6 November
 Time 16:00-17:30
 Venue Press Room
 Style Interactive Corner

Facilitator: Wedge 1 – **J. Murray** (IAEA)
 Wedge 2 – **E. Crawford** (IAEA)
 Session Reporter: Wedge 1 – V. Thomas (IAEA)
 Wedge 2 – E. Crawford (IAEA)
 Scene setters: J. Murray (IAEA), E. Crawford (IAEA)

16:00-16:05	Scene Setting
16:05-17:10	Presentation on posters (5 min/person) + Q&A
17:10-17:30	1-to-1 poster presentation/Q&A/networking

Wedge 1: State Experiences with State Declarations Portal (SDP)

ID	PRESENTERS	TITLE
CN267-099	L. Millot France	Benefits of using a Declarative Web Portal to Make the Additional Protocol Declarations-Application with the French Portal PASTEL
CN267-135	S. Birikorang Ghana	The Safeguards State Declarations Portal: A Perspective from the Safeguards Department of the Nuclear Regulatory Authority, Ghana
CN267-162	V. Nguyen Viet Nam	Experiences of Vietnam in Applying Information Technology to Streamline and Simplify Its Safeguards Implementation Processes: Benefits and Challenges
CN267-192	M. Humbert-Brun France	Use of an Electronic Reporting System to Increase the Efficiency and the Effectiveness of Safeguards Implementation

Technical Sessions

Wedge 2: SSAC Information Management Systems

ID	PRESENTERS		TITLE
CN267-016	A. Tichy	Czech Republic	Improving SSAC Capability through the Application of an Appropriate NMAC (and reporting) Software: Experience of the Czech Republic
CN267-028	S. Bznuni	Armenia	NUCMAT: Integrated National-level Nuclear Material Inventory Management Software
CN267-078	A. Apostol	Romania	National Nuclear Forensics Library as a System for NMAC
CN267-242	C. Everton	Australia	NUMBAT: Lessons learnt from Australia's database development
CN267-298	J. Darphin	France	Pre-NRTA Systems: Opportunities and Challenges
CN267-312	S. Yakubekov	Uzbekistan	Control and Accounting of Nuclear Material in Uzbekistan
CN267-186	M. Mladenovic	Serbia	Managing the Interface Between NMAC and Nuclear Security within Public Company Nuclear Facilities of Serbia

Relevant ESPACE:

- Wednesday, 7 November, 10:30-11:00
C. Everton, (Australia)
"NUMBAT: Lessons Learnt from Australia's Database Development"
- Wednesday, 7 November, 11:00-11:30
S. Bznuni, (Armenia)
"NUCMAT: Integrated National-level Nuclear Material Inventory Management Software"
- Wednesday, 7 November, 12:30-13:00
T. Stepanek, (IAEA)
"Potential Upgrades to Fixed Format Code 10 Excel Spreadsheets"
- Wednesday, 7 November, 12:30-13:00
O. Stastny, (Czech Republic)
"Improving SSAC capability through the Application of an Appropriate NMAC (and reporting) Software: Experience of the Czech Republic"
- Wednesday, 7 November, 13:00-13:30
T. Stepanek, E. Crawford (IAEA)
"Re-thinking Reporting: Good practices for 21st-Century NMA Reporting"
- Wednesday, 7 November, 13:00-13:30
V. Nguyen (Viet Nam)
"Experiences of Vietnam in Applying Information Technology to Streamline and Simplify Its Safeguards Implementation Processes: Benefits and Challenges"

[SGI-S5] Streamlining Information-related Workflows: Small Holders/LOFs and AP Declarations

Learning from Peers: Finding effective and efficient approaches for AP declarations and LOF reporting

Date Wednesday, 7 November
 Time 09:00-10:30
 Venue Press Room
 Style Interactive Corner

Facilitators: Wedge 1 – **J. Idinger** (IAEA), **A. Keskinen** (IAEA)

Wedge 2 – **M. Keselica** (IAEA)

Session reporters: Wedge 1 – A. Lenk (IAEA)

Wedge 2 – L. Evans (Australia)

09:00-09:05 Scene Setting

09:05-10:30 Presentation on posters (5 min/person) + Q&A

Wedge 1: State experiences/PR3/DDSM

ID	PRESENTERS		TITLE
CN267-012	O. Chernysh	Ukraine	10 years of the AP Information and Analytical System of Ukraine
CN267-096	V. Janjic	Serbia	Implementation of Additional Protocol in Serbia
CN267-125	H. Kasiwattanawut	Thailand	Thailand's Additional Protocol: Experience and Challenge
CN267-130	E. Ampomah-Amoako	Ghana	Safeguards and Additional Protocol Reporting Regime at Nuclear Regulatory Authority
CN267-182	R. Thorn	Cambodia	Streamlining and Simplifying Collection, Validation, and Submittal of Information to the IAEA
CN267-288	G. Monnehan	Côte d'Ivoire	Implementation of the AP in Cote d'Ivoire: Review and Prospects
CN267-282	B. Tyler	Canada	Future of Safeguards: Use of New Information Technologies to Improve Information Exchange Between Canada and the IAEA
CN267-027	T. Mermer	Turkey	State Declarations Portal and Protocol Reporter 3 experiences of Turkey
CN267-318	J. Idinger	IAEA	Impact of using Protocol Reporter 3 (PR3) software on the quality and consistency of AP data and on workflows
CN267-317	J. Idinger	IAEA	Extending Protocol Reporter 3 into a Universal AP Reporting Tool that Supports EURATOM AP Workflows

Technical Sessions

Continued

ID	PRESENTERS		TITLE
CN267-007	J. Rutkowski	Germany	Creating Digital Site Maps for the Additional Protocol
CN267-272	A. Keskinen	IAEA	Preparation of Additional Protocol (AP) Declarations using Protocol Reporter 3 and Attached Digital Declaration Site Maps for AP Article 2.a.(iii): Experiences of AP Workflows from Finland
CN267-368	A. Riitsaar	IAEA	Lost in Translation: Improving the Accuracy of the Offline Automatic Translations of the Additional Protocol Declarations.

Wedge 2: Small Holders and LOFs

ID	PRESENTERS		TITLE
CN267-171	H. Rodriguez-Luccioni	USA	Implementing a Modified Small Quantities Protocol in the U.S. Caribbean Territories
CN267-196	H. Niittymäki	Finland	Safeguards with Small Holders – From Headache to Optimal Safeguards Implementation
CN267-240	L. Evans	Australia	LOF Management in Australia
CN267-284	J. Sample	Canada	Practical Considerations for Location Outside Facility Designation and for Efficient Safeguards
CN267-301	H. Khedr Ibrahim	Egypt	Absolute Method for Characterization of Disused Depleted Uranium Containers

Relevant ESPACE:

- Tuesday, 6 November, 12:30-13:00
B. Tyler, (Canada)
“Future of Safeguards: Use of New Information Technologies to Improve Information Exchange Between Canada and the IAEA”
- Tuesday, 6 November, 15:00-15:30
J. Idinger, A. Keskinen, G. Shcherbinin (IAEA)
“Extending Protocol Reporter 3 into a Universal AP Reporting Tool that Supports EURATOM AP Workflows”
- Tuesday, 6 November, 15:30-16:00
A. Keskinen, J. Idinger (IAEA), T. Honkamaa, E. Martikka, T. Ilander, T. Ansaranta (STUK), T. Nissinen (Fortum)
“Preparation of Additional Protocol (AP) Declarations using Protocol Reporter 3 and Attached Digital Declaration Site Maps for AP Article 2.a.(iii): Experiences of AP Workflows from Finland”
- Tuesday, 6 November, 17:30-18:00
E. Crawford (IAEA)
“Novel Data Extraction and Processing for AP R&D Declarations”

[SGI-S6] ISSAS Missions and SSAC Self-Assessment

Working together to improve safeguards implementation

Date Wednesday, 7 November
Time 11:00-12:30
Venue M2
Style Roundtable

Facilitator: **V. Cisar** (Czech Republic)
Chairs: **S. Pickett** (IAEA), **A. Vincze** (Hungary)
Session Reporter: **S. Ates Gunes** (IAEA)
Scene setter: **I. Tsvetkov** (IAEA)

11:00-11:05	Scene Setting
11:05-11:50	Short statements from Roundtable Members (5 min/person)
11:50-12:30	Discussion / Q&A

Roundtable Members

ID	PRESENTERS		TITLE
CN267-081	Z. Stefanka	Hungary	Assessment of Nuclear Facility's Safeguards System By Using Safeguards Performance Assessment Indexes
CN267-086	S. Frazar	USA	Developing an SSAC Self-Assessment Tool for Operators and Regulators
CN267-331	A. Sidorencu	Republic of Moldova	Strengthening Moldova's Safeguards Implementation Infrastructure, including through use of ISSAS
CN267-315	D. Humagain	Nepal	Nepal's Experience in Regulation
CN267-403	M. Ceyhan	IAEA	Assessment and Assistance – the NIDS Model

[SGI-S7] Insights and feedback from SSAC discussions

What have we learned in the topical sessions regarding the common challenges in safeguards implementation, and how could States and the IAEA work better together to ensure assistance is having an impact?

Date Wednesday, 7 November
 Time 14:00-15:30
 Venue M2
 Style Roundtable

Facilitator: O. Elkhamri (USA)
 Chairs: H. Barroso (IAEA), N. Bello (Nigeria)
 Session Reporter: L. Evans (Australia)
 Scene setter: **C. Mathews** (IAEA)

14:00-14:40	Summary of relevant sessions (5 min/session)
14:40-15:15	Facilitated Discussion
15:15-15:30	Wrap-up by the Facilitator

IAEA Roundtable Members

PRESENTER	
M. Van Sickle (CHA-S2)	IAEA (NENP)
S. Poe (NEW-S6)	IAEA (SGOC)
T. Jeffrey (SGI-S2)	IAEA (SGOB)
E. Agboraw (SGI-S3)	IAEA (SGIM)
E. Crawford (SGI-S4)	IAEA (SGIM)
T. Stepanek (SGI-S4)	IAEA (SGIM)
J. Idinger (SGI-S5)	IAEA (SGCP)
S. Pickett (SGI-S6)	IAEA (SGCP)

External Roundtable Members

PRESENTER		PRESENTER	
O. Aruga	Japan	K. Mrabit	Morocco
S. Birikorang	Ghana	D. Moroz	Canada
G. Dahlin	Sweden	A. Muti	VERTIC
G. Diaz	Argentina	B. Srimok	Thailand
K. Durbin	USA	A. Tichy	Czech Republic
C. Everton	Australia	A. Vincze	Hungary
W. Janssens	EC/JRC	N. Vi	Viet Nam
H. Khedr Ibrahim	Egypt	H. Yoo	Republic of Korea

[SGI-S8] Improvements in the Field: Enhancements to Measurement Techniques

Finding better ways to measure and track nuclear material, including in bulk form

Date Wednesday, 7 November
 Time 14:00-15:30
 Venue Press Room
 Style Interactive Corner

Facilitator: Wedge 1 – R. Binner (IAEA)
 Wedge 2 – **M. Mayorov** (IAEA)
 Session Reporters: Wedge 1 – K. Zhao (IAEA)
 Wedge 2 – G. Spence (IAEA)

14:00-15:00 Presentation on posters (5 min/person)
 15:00-15:30 1-to-1 poster presentation/Q&A/networking

Wedge 1: Process Monitoring and Near Real Time Accountancy at Bulk Facilities

ID	PRESENTERS		TITLE
CN267-019	K. Nakahara	Japan	Features of Statistical Tests Adopted in the Near Real Time Accountancy System
CN267-299	B. Dinh	France	Potentiality of Simulation Tools for NRTA
CN267-065	S. Kumakura	Japan	Material Balance Evaluation at Bulk-handling Facilities in the Decommissioning Stage or Partially Shutdown
CN267-070	T. Tamura	Japan	An Improvement of Maintainability and Reliability for Nuclear Material Accountancy Equipment in RRP
CN267-072	D. Rodriguez	Japan	Concepts for and Demonstration of Gamma-ray Process Monitoring for Reprocessing Facilities
CN267-074	M. Sekine	Japan	Feasibility Study Result of Advanced Solution Measurement and Monitoring Technology for Reprocessing Facility
CN267-251	S. Richet	IAEA	25 Years of NRTA as an IAEA Safeguards Tool

Technical Sessions

Wedge 2: NDA Techniques

ID	PRESENTERS		TITLE
CN267-033	G. Radocz	Hungary	Characterization of CdZnTe Gamma Detector for MCNP-based Efficiency Calibration of in-situ Gamma Spectrometry of Radioactive Waste Materials
CN267-082	R. El-Tayebany	Egypt	Enhancement of Peak to Compton Ratio (P/C) using a New Array Design for Safeguards Applications
CN267-153	M. Koizumi	Japan	Development of Active Neutron Non-destructive Assay (NDA) Techniques
CN267-157	S. Bogdanov	Russian Federation	New Software for HKED Densitometer of RT-1 Plant
CN267-181	D. Sullivan	USA	Activity Quantification with the SPIR-Ace RID
CN267-216	Y. Cheng	China	A New Technology of Neutron Multiplicity Counting for Nuclear Safeguards
CN267-237	J. Shao	China	Passive Neutron Counting and Gamma Segment Scanning for Waste Measurements
CN267-249	W. El-Gammal	Egypt	Investigation of a Dynamic Measurement Methodology for Fast Detection of Gross Defects in Regularly Distributed Nuclear Material Samples
CN267-262	M. Mayorov	IAEA	Development of the NDA Technique for Verification of a Critical Assembly with Partial Defect Test
CN267-270	J. Dufour	France	Uranium Enrichment Measurement in UF ₆ Cylinders by HRGS : an Evaluation of the Measurement Uncertainty
CN267-314	T. Leshilo	South Africa	HA-AWCC Instrument Test for Characterization of U Residue from ⁹⁹ Mo Production in South Africa

[SGI-S9] Performance Monitoring in Safeguards

How might the Department of Safeguards improve the collection and reporting of key performance measures to enhance the efficiency and effectiveness of safeguards implementation?

Date Wednesday, 7 November
 Time 16:00-17:30
 Venue Board Room A
 Style Panel Session

Chairs: F. Claude (IAEA), K. Heppell-Masys (Canada)
 Facilitator: **T. Newton** (IAEA), **R. Fitzgerald** (IAEA)
 Session Reporter: A. Karadzhyan (IAEA)
 Scene Setter: V. De Villiers (IAEA)

16:00-16:05	Scene Setting
16:05-16:40	Short presentation from Panelists (7 min/person)
16:40-17:30	Discussion / Q&A

Panelists

ID	PRESENTERS	TITLE
CN267-283	D. Moroz Canada	Performance Management for Safeguards Implementation
CN267-176	J. Cooley USA	Performance Monitoring through Quality Control for Enhancing the Effectiveness of IAEA Safeguards Implementation
CN267-206	M. Belyaeva Russian Federation	Effectiveness of IAEA Safeguards
CN267-177	D. Lockwood USA	The Role of Performance Targets in Safeguards
CN267-359	G. Soudry IAEA	The Use of New Analytical Capabilities Established under MOSAIC to Support the Department's Use of Performance Indicators
CN267-117	J. Reed USA	Visualization of [SIR] Data for Enhanced Safeguards Communication and Analysis

Contributors

ID	PRESENTERS	TITLE
CN267-300	D. Al-Jilani Jordan	Structural Equation Modelling to Reinforce IAEA Safeguards Methodology and Effectiveness Evaluation
CN267-404	E. Franklin Saburido IAEA	Performance Monitoring during the Planning and Implementation of SGs Activities in the Field
CN267-405	T. Assef IAEA	Safeguards Equipment Performance Monitoring
CN267-406	E. Quai IAEA	Logistics of Safeguards Verification Equipment
	M. Peltoranta	

[SGI-S10] Partnerships, Networks and Regional Collaboration

How could partnerships, networks and regional collaboration assist in building safeguards capacity?

Date Thursday, 8 November
 Time 09:00-10:30
 Venue Board Room A
 Style Panel Session

Chairs: P. Rance (IAEA), K. Durbin (USA)
 Facilitator: **A. Vasmant** (IAEA), **W. Bekiert** (IAEA)
 Session Reporter: K. Madden (IAEA)
 Scene Setter: A. Vasmant (IAEA)

09:00-09:05	Scene Setting
09:05-09:55	Short presentation from Panelists (7 min/person)
09:55-10:30	Discussion / Q&A

Panelists

ID	PRESENTERS	TITLE
CN267-244	Y. Hwang Korea, Republic of	Asia-Pacific Regional Safeguards Network, APSN
CN267-296	K. Durbin USA	Innovations in DOE/NNSA's International Nuclear Safeguards Engagement Program
CN267-303	D. Mosbah Tunisia	AAEA Role in Strengthening Safeguards Infrastructure in Arab Countries
CN267-193	V. Nguyen Viet Nam	Viet Nam's Safeguards Implementation: Cooperation with International Partners and the IAEA
CN267-330	S. Fernandez Moreno ABACC	ABACC – Cooperation and Engagement: Prospects for Raising Regional-International Cooperation to a Higher Level

Relevant ESPACE:

- Thursday, 8 November, 11:00-11:30
 R. Binner (IAEA)
“Proactively Monitoring the Quality of the Operator’s Measurement and Accountancy Systems in the Framework of Trilateral Liaison Meetings – Experiences Gained and Maturing the System”

Technical Sessions

Contributors

ID	PRESENTERS		TITLE
CN267-146	V. Lozova	USA	Undergirding the IAEA: How Regional Safeguards Agreements Can Take the Pressure Off
CN267-198	M. Kikuchi	Japan	Future Cooperation Scheme between IAEA and SSAC/RSAC
CN267-287	R. Binner	IAEA	Proactively Monitoring the Quality of the Operator's Measurement and Accountancy Systems in the Framework of Trilateral Liaison Meetings – Experiences Gained and Maturing the System
CN267-407	N. Bello	Nigeria	Networks in Africa and Their Potential for Contributions in Safeguards
CN267-408	W. Janssens	EC	Networks and Their Potential for Contributions for Safeguards
CN267-413	S. Poirier J. Morizot	IAEA	SGTS-ROK Collaboration for Training National Inspectors

ESPACE

ESPACE



The ESPACE areas are open spaces in M-building dedicated to the Symposium, contributions favoring a visual presentation or demonstration can be presented.

[ESP-S1] ESPACE – Monday, 5 November

Venue: ESPACE 1

TIME	ID	PRESENTERS	TITLE	LINK
13:30-14:30	CN267-379	J. Baute T. Stepanek J. Idinger E. Crawford A. Keskinen C. Norman K. Vilece T. Mock M. Kitembo T. Skoeld E. Marinova M. Fowler I. Sikaneta A. Yeoh	IAEA Innovative Approaches to Information Analysis in Safeguards	TEC-S2

[ESP-S2] ESPACE – Tuesday, 6 November

Venue: ESPACE 1

TIME	ID	PRESENTERS		TITLE	LINK
09:00-09:30	CN267-409	D. Parise	IAEA	Integration of OLEM, Load Cells, Temperature and Pressure Data for Effective SGs at Enrichment Plants	TEC-S1
09:30-10:00	CN267-410	D. Finker	IAEA	Demonstration of Robotics for Safeguards	TEC-S1
12:30-13:00	CN267-059	T. Skoeld	IAEA	OSIS 2.0: Optimizing Analyst-Driven Automation of Open Source Information Collection and Processing	TEC-S2
13:00-13:30	CN267-370	T. Mock	IAEA	alCHEMy: A Structured Approach to Exploit Elemental Data in Particles	SGI-S1
15:00-15:30	CN267-317	J. Idinger	IAEA	Extending Protocol Reporter 3 into a Universal AP Reporting Tool that Supports EURATOM AP Workflows	SGI-S5
15:30-16:00	CN267-272	A. Keskinen	IAEA	Preparation of Additional Protocol (AP) Declarations using Protocol Reporter 3 and Attached Digital Declaration Site Maps for AP Article 2.a.(iii): Experiences of AP Workflows from Finland	SGI-S5
17:30-18:00	CN267-371	E. Crawford	IAEA	Novel Data Extraction and Processing for AP R&D Declarations	SGI-S5

Venue: ESPACE 2

TIME	ID	PRESENTERS	TITLE	LINK
09:30-10:00	CN267-286	I. Stewart KCL	Report Back on International Workshop on the Applicability of New Tools and Technologies for Non-Proliferation	TEC-S2
10:30-11:00	CN267-411	Reserved for Exhibitor		
12:30-13:00	CN267-282	B. Tyler Canada	Future of Safeguards: Use of New Information Technologies to Improve Information Exchange Between Canada and the IAEA	SGI-S5
13:00-13:30	CN267-419	Reserved for Exhibitor		
13:30-14:00	CN267-412	Reserved for Exhibitor		
15:30-16:00	CN267-421	Reserved for Exhibitor		

[ESP-S3] ESPACE – Wednesday, 7 November

Venue: ESPACE 1

TIME	ID	PRESENTERS		TITLE	LINK
11:00-11:30	CN267-414	J. Longo S. Bertl	IAEA	The Integrated Review and Analysis Package (IRAP)	TEC-S3
12:30-13:00	CN267-373	T. Stepanek	IAEA	Potential Upgrades to Fixed Format Code 10 Excel Spreadsheets	SGI-S4
13:00-13:30	CN267-374	E. Crawford	IAEA	Re-thinking Reporting: Good Practices for 21st-Century NMA Reporting	SGI-S4
15:30-16:00	CN267-369	M. Fowler	IAEA	Optimizing the use of multimedia information in IAEA Safeguards: Introducing the Safeguards Multimedia Information Analysis and Integration Project (SG-MM)	TEC-S9
17:30-18:00	CN267-372	C. Norman	IAEA	SNAKEY: Versatile and Interactive Visualization of Nuclear Material Flows, Inventories and Material Balance Evaluation Results at State Level	TEC-S4

Venue: ESPACE 2

TIME	ID	PRESENTERS		TITLE	LINK
09:30-10:00	CN267-232	K. Jarman	USA	Inspection Frequency Implications of the Broader Conclusion: Case Studies	TEC-S6
10:30-11:00	CN267-242	C. Everton	Australia	NUMBAT: Lessons Learnt from Australia's Database Development	SGI-S4
11:00-11:30	CN267-028	S. Bznuni	Armenia	NUCMAT: Integrated National-level Nuclear Material Inventory Management Software	SGI-S4
12:30-13:00	CN267-016	O. Stastny	Czech Republic	Improving SSAC Capability through the Application of an Appropriate NMAC (and reporting) Software: Experience of the Czech Republic	SGI-S4
13:00-13:30	CN267-162	V. Nguyen	Viet Nam	Experiences of Vietnam in Applying Information Technology to Streamline and Simplify Its Safeguards Implementation Processes: Benefits and Challenges	SGI-S4
13:30-14:00	CN267-422	Reserved for Exhibitor			
15:30-16:00	CN267-420	Reserved for Exhibitor			

[ESP-S4] ESPACE – Thursday, 8 November

Venue: ESPACE 1

TIME	ID	PRESENTERS		TITLE	LINK
11:00-11:30	CN267-287	R. Binner	IAEA	Proactively Monitoring the Quality of the Operator's Measurement and Accountancy Systems in the Framework of Trilateral Liaison Meetings – Experiences Gained and Maturing the System	SGI-S10
12:30-13:00	CN267-418	S. Vogt M. Humphrey	IAEA	Environmental Sampling Demonstration	SGI-S1

Venue: ESPACE 2

TIME	ID	PRESENTERS		TITLE	LINK
10:00-10:30	CN267-014	R. Rossa	Belgium	The Education and Training Offer in Nuclear Safeguards within the EURATOM Research and Training Project "ANNETTE"	CHA-S6

OTHER SESSIONS

Regional Mixers



Regional Mixers are 60-minute sessions to provide networking and discussion opportunities for participants from the same region. The sessions will encourage information exchange and free discussion. IAEA Staff will also be available to support the discussion.

[MIX-S1] Latin America and Caribbean

Date Tuesday, 6 November
Time 12:00-13:00
Venue M7
Style Regional Mixer
Facilitator: M. Alvarez-Diequez (IAEA)

[MIX-S2] Safeguards Network Forum

Date Tuesday, 6 November
Time 15:30-16:30
Venue M7
Style Mixer for Safeguards/Nuclear Regional Networks
Facilitator: R. Floyd (APSN)

[MIX-S3] Asia and Pacific

Date Wednesday, 7 November
Time 12:00-13:00
Venue M7
Style Regional Mixer
Facilitator: J. Morizot; A. Garcia Carrera (IAEA)

[MIX-S4] Africa

Date Wednesday, 7 November
Time 15:30-16:30
Venue M7
Style Regional Mixer
Facilitator: E. Agboraw (IAEA)

Recruiting Events



A number of sessions are scheduled during the Symposium to describe to interested participants how the IAEA competency-based process of recruiting is performed. In addition, there are opportunities to meet IAEA staff working in areas of Safeguards to feel how it is to work with the Agency.

[REC-S1] Launching Session: Working for the IAEA

Date Monday, 5 November
 Time 16:00-17:00
 Venue Board Room A
 Style Workshop

Session Owner: **M. Leonardi** (IAEA)
 Chair: M.A. Hayward (IAEA)
 Facilitator: M. Leonardi (IAEA)

TIME	SPEAKER		TITLE
16:00-16:10	M.A. Hayward	IAEA	Opening Remarks
16:10-16:20	K. Rojkov	IAEA	HR Remarks
16:20-16:25	Audience Polling		
16:25-16:35	V. Z. de Villiers	IAEA	IAEA Department of Safeguards
	M. Monteith	IAEA	Recruiting Needs and Challenges
16:35-16:50	Working for the IAEA – Voices of IAEA Staff Members		
	E. Agboraw		Senior Inspector for State Level Coordination (<i>SGOB</i>)
	S. Poe		Nuclear Safeguards Inspector (<i>SGOC</i>)
	M. Ardhammar		Senior Safeguards Analyst (<i>SGIM</i>)
	D. Finker		Technology Foresight Specialist (<i>SGTS</i>)
	U. Repinc		Analytical Chemist (<i>SGAS</i>)
16:50-17:00	Q&A / Audience Polling		

[REC-S2] Networking with IAEA Staff

Date Monday, 5 November
Time 17:00-17:45
Venue Outside Board Room A
Style Networking

IAEA Participants

PARTICIPANTS	
M.A. Hayward	Deputy Director General (<i>MT</i>)
K. Rojkov	Director (<i>MTHR</i>)
V. Z. de Villiers	Director (<i>SGOB</i>)
M. Monteith	Administrative Officer (<i>SG</i>)
E. Agboraw	Senior Inspector for State Level Coordination (<i>SGOB</i>)
S. Poe	Nuclear Safeguards Inspector (<i>SGOC</i>)
M. Ardhammar	Senior Safeguards Analyst (<i>SGIM</i>)
D. Finker	Technology Foresight Specialist (<i>SGTS</i>)
U. Repinc	Analytical Chemist (<i>SGAS</i>)
M. Leonardi	Programme Officer (<i>SGCP</i>)

[REC-S3] Competency Based Interview with IAEA

Date Tuesday, 6 November
Time 13:15-14:15
Venue M6
Style Workshop

TIME	SPEAKER	TITLE
13:15-13:45	N. Macharia	IAEA What is Competency Based Recruiting?
13:45-14:15		Q&A

[REC-S4] Planning and Preparing a Job Application - ‘Personal History Form (PHF)’

Date Wednesday, 7 November
Time 13:15-14:15
Venue M6
Style Workshop

TIME	SPEAKER		TITLE
13:15-13:45	L. Nicodemo	IAEA	Preparing an IAEA Application - How to Write a Good PHF?
13:45-14:15			Q&A

[REC-S5] Preparing for Interviews and SONRU

Date Thursday, 8 November
Time 09:00-10:00
Venue M6
Style Workshop

TIME	SPEAKER		TITLE
09:00-09:30	C. Sim	IAEA	What is SONRU? How to Prepare for Asynchronous Interviews
09:30-10:00			Q&A

Side-Events



The Department of Safeguards would like to make sure that participants would utilize the opportunity of staying at IAEA to clarify any questions you may have working with us. Various side-events are prepared to meet IAEA staff specialized in the field to answer your questions.

[SSE-S1] Collaborative Analysis Platform (CAP)

Date Monday, 5 November
 Time 16:00-17:00
 Venue M2
 Style Presentation

Facilitator: D.Gagne (IAEA)

ID	PRESENTERS		TITLE
CN267-207	I. Iancu	IAEA	Detection of undeclared nuclear material and activities using the Collaborative Analysis Platform
CN267-264	D. Gagne	IAEA	Additional Protocol Verification Using the Collaborative Analysis Platform
CN267-266	D. Calle	IAEA	Nuclear Material Accountancy Network Analysis at Scale

[SSE-S2] Q&A on Safeguards Regulatory Framework with IAEA-Office of Legal Affairs

Participants may drop-in anytime during the session for individual/group consultation on safeguards legislative and regulatory topical matters with IAEA Office of Legal Affairs (OLA) staff.

Date Tuesday, 6 November
 Time 10:00-11:00
 Venue M6
 Style Drop-in

IAEA Expert: C. de Francia; S. Fanielle
Legal Officers (Non-Proliferation and Policy Making)

[SSE-S3] SPRICS for MSSP Task Administration: Demo and Q&A

Drop by for a quick tour and get answers to your MSSP- and SPRICS-related questions. SPRICS (sprics.iaea.org) gives Member State Support Programme (MSSP) task officers access to proposals (SP-1s), tasks, review meeting materials, processes, FAQs, etc. Staff are also available for individual consultations to address any specific issues.

[SSE-S3a]

Date Tuesday, 6 November
Time 12:30-13:00
Venue M6
Style Drop-in

[SSE-S3b]

Date Wednesday, 7 November
Time 14:30-15:00
Venue M6
Style Drop-in

IAEA Expert: C. Dierickx

Associate Programme Information and Communication Officer

[SSE-S4] Safeguards by Design in Advanced Nuclear Reactors

A Transatomic Test Bed for safeguards by design?

Date Tuesday, 6 November
Time 16:00-17:00
Venue M6
Style Roundtable

Chair: L. Holgate (NTI)

16:00-16:10	Opening by the Chair
16:10-16:40	Overview
16:40-17:00	Call for Action / Q&A

Roundtable Members

ID	PRESENTERS		TITLE
CN267-423	L. Holgate	NTI	Opening Remarks: Adoption of Safeguards by Design through Earlier Collaboration between Experts
CN267-424	S. Hobbs Baker	USA	Potential for the Adoption of Safeguards by Design in the Advanced Nuclear Age - Overview of Recent Report by Third Way (U.S. Think Tank)
CN267-425	L. Dewan	USA	Overview of Open Source Molten Salt Reactor for Safeguards by Design

[SSE-S5] SG SDP and PR3 for State Safeguards Reporting

Participants may drop-in anytime during the session for individual/group consultation with IAEA staff on the State Declarations Portal and PR-3. Pick-up a SDP kit to start using this today!

Date Wednesday, 7 November
Time 10:30-11:30
Venue M6
Style Drop-in

IAEA Expert: J. Murray
Senior Business Analyst
J. Idinger
Safeguards Information Analyst

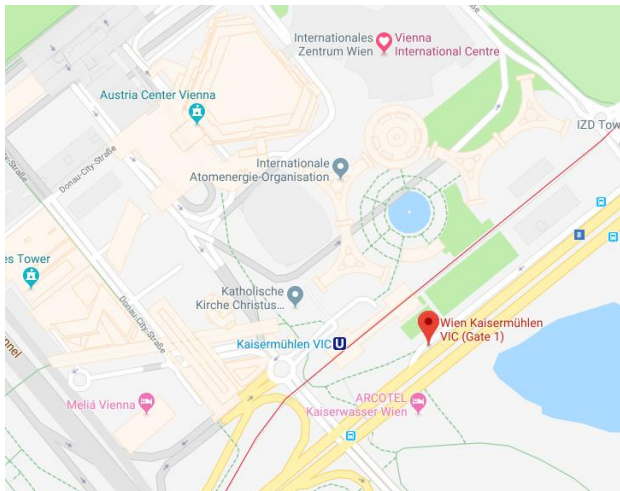
[SSE-S6] Workshop on Safeguards Analytical Services

Pre-registered participants will visit Safeguards Analytical Laboratories in Seibersdorf. The tour is fully-booked.

Date Friday, 9 November
Time 08:00-14:30

Meeting Point:

The tour will meet at Airport Bus stop at Kaisermühlen VIC (Wagramer Straße, street level). The bus will be leaving to Seibersdorf at 8:00 sharp.



ANNEX

Acknowledgements

Symposium Secretariat gratefully acknowledges the support of external contributors.

James TUSHINGHAM
Joao GONCALVES
Bruce MORAN
Jill COOLEY
Michael WHITAKER
Laura ROCKWOOD

Technical Programme Meeting Attendees

Kåre AXELL	Nikolai KHLEBNIKOV
Bertrand BOUCHET	Nadia KOZLOVA
Göran DAHLIN	Elina MARTIKKA
Ivan DAVYDOV	David MOROZ
Rob FLOYD	Irmgard NIEMEYER
Joao GONCALVES	Ondrej STASTNY
Tom GRAY	Ian STEWART
Corey HINDERSTEIN	James TUSHINGHAM
Masato HORI	Arpad VINCZE
Keiichiro HORI	Michael WHITAKER
Willem JANSSENS	Nikolai KHLEBNIKOV

And acknowledges the substantial contributions of the internal Departmental Symposium Team

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Cristian de FRANCIA	Jean Philippe MORIZOT
Rehab ELTAYB HASSAN ELTAYB	Prae NEERANATRANGSAN
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Abbreviations

ABACC	Brazilian-Argentine Agency for Accounting and Control of Nuclear Materials
AP	Additional Protocol
APAT	Acquisition Path Analysis Tool
APSN	Asia Pacific Safeguards Network
BWR	Boiling Water Reactor
CAP	Collaborative Analysis Platform
CHA	Challenges
CoK	Continuity of Knowledge
CTBTO	Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization
CTE	Comité Technique Euratom
DA	Destructive Analyses
DCVD	Digital Cerenkov Viewing Device
DNN	Defense Nuclear Non-proliferation
EC	European Commission
ECA	Enhanced Cooperation Arrangements
ECFA	Egyptian Council for Foreign Affairs
EC-JRC	European Commission Joint Research Centre
EDX	Energy-dispersive X-ray
EPGR	Encapsulation Plant and Geologic Repository
ESARDA	European Safeguards Research and Development Association
EU	European Union
EURATOM	European Atomic Energy Commission
GDI	Geo-based Data Integration
GEN IV	Generation Four (Reactors)
HA-AWCC	High Activity – Active Well Coincidence Counter
HKED	Hybrid K-Edge Densitometer
HLW	High Level Waste
HRGS	High Resolution Gamma Spectrometry
HTR-PM	High Temperature Reactor - Pebble-Bed Module
IAEA	International Atomic Energy Agency
SG	Department of Safeguards
DDGO	Office of Deputy Director General
SGAS	Safeguards Analytical Services
SGCP	Safeguards Concepts and Planning
SGIM	Safeguards Information Management
SGIS	Safeguards Information and Communication Systems
SGOA	Safeguards Operations ‘A’
SGOB	Safeguards Operations ‘B’
SGOC	Safeguards Operations ‘C’
SGTS	Safeguards Technical Support
SGIV	Office for Verification in Iran

MT	Department of Management
MTHR	Department of Management, Human Resources
ICP MS	Ion Coupled Plasma Mass Spectrometer
IEC	Incident and Emergency Centre
INMM	Institute of Nuclear Materials Management
INSEP	International Nuclear Safeguards and Engagement Program
IoT	Internet of Things
IRAP	A system for integrated analysis and visualization of multi-source safeguards data
IRRS	Integrated Regulatory Review Service
ISCN	Integrated Support Center for Nuclear Nonproliferation and Nuclear Security
ISSAS	IAEA SSAC Advisory Service
IT	Information Technology
JAEC	Japan Atomic Energy Agency
J-MOX	Japan Mixed Oxide Fuel Fabrication Facility
JRC	Joint Research Centre
KCL	King's College of London
K-XRF	K-Edge X-Ray Fluorescence
LG-SIMS	Large-Geometry Secondary Ion Mass Spectrometry
LOFs	Locations Outside Facilities
MCNP	Monte Carlo
MSSP	Member State Support Programmes
NDA	Non-destructive Assay
NE	IAEA Department of Nuclear Energy
NEW	New Facilities and Campaigns
NMA	Nuclear Material Accountancy
NMAC	Nuclear Material Accounting and Control
NMCC	Nuclear Material Control Centre (Japan)
NPP	Nuclear Power Plant
NRTA	Near Real Time Accounting
NSSC	Nuclear Security Support Centres
NTI	Nuclear Threat Initiative
OLEM	On Line Enrichment Monitor
OSIS	Open Source Information System
PB-HTR	Pebble Bed – High Temperature Reactor
PDDT	Plutonium Diversion Detection Training
PGET	Passive Gamma Emission Tomography
PHF	Personal History Form
PHWR	Pressurized Heavy Water Reactor
PR3	IAEA Protocol Reporter software version 3
PWR	Pressurized Water Reactor
RRP	Rokkasho Reprocessing Plant (Japan)
S/RSACs	State and Regional Systems of Accounting for and Control of Nuclear Materials
SDP	State Declarations Portal
SEM	Scanning Electron Microscopy

SGI	Safeguards Implementation
SGL	Safeguards Laboratory
SIMS	Secondary Ion Mass Spectrometry
SMR	Small Modular Reactor
SNF	Spent Nuclear Fuel
SONRU	IAEA video based remote interview tool
SPRICS	Support Programme Information and Communication System
SQP	Small Quantities Protocol
STEM	Science, Technology, Engineering and Math
STEPS	Statistical Testing, Evaluation and Planning for Safeguards
Surv	Safeguards Video Surveillance
TAPAS	Tool for Acquisition Path Analysis and Strategy
TEC	Technological Advancements
TIMS	Thermal Ionization Mass Spectrometry
UNODC	United Nations Office on Drugs and Crime
VCDNP	Vienna Center for Disarmament and Non-Proliferation
VIC	Vienna International Centre
WIN	Women in Nuclear
WINS	World Institute for Nuclear Security

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Ministerial Conference on Nuclear Science and Technology: Addressing Current and Emerging Development Challenges (CN-262), 28–30 November; Vienna, Austria

International Conference on the Security of Radioactive Material: The Way Forward for Prevention and Detection (CN-269), 3–7 December, Vienna, Austria

International Symposium on Understanding the Double Burden of Malnutrition for Effective Interventions (CN-268), 10–13 December, Vienna, Austria

2019

International Symposium on Isotope Hydrology (CN-271), 20–24 May; Vienna Austria

International Symposium on Standards, Applications and Quality Assurance in Medical Radiation Dosimetry (IDOS 2019) (CN-273), 18–21 June; Vienna, Austria

International Conference on the Management of Spent Fuel from Nuclear Power Reactors: Learning from the Past, Enabling the Future, (CN-272), 24–28 June, Vienna, Austria

Scientific Forum, (CN-274), September; Vienna, Austria

International Conference on Climate Change and the Role of Nuclear Power (CN-275), 7–11 October; Vienna, Austria

International Symposium on Trends in Radiopharmaceuticals (ISTR-2019) (CN-276), 28 October–1 November; Vienna, Austria

International Conference on Effective Regulatory Systems for Nuclear and Radiation Safety (CN-270), November, TBD

International Conference on Research Reactors: Addressing Challenges and Opportunities to Ensure Effectiveness and Sustainability: (CN-277), 25–29 November, Buenos Aires, Argentina

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