



**ADVANCING TOGETHER:
INNOVATION AND RESILIENCE IN
NUCLEAR MATERIALS MANAGEMENT**

**INMM & ESARDA
JOINT ANNUAL MEETING
VIRTUAL MEETING**

SAVE THE DATES
AUGUST 23 - 26 & AUGUST 30 - SEPTEMBER 1

inmm.org/INMMESARDA2021

INMM
INSTITUTE OF
NUCLEAR MATERIALS
MANAGEMENT

ESARDA
European Safeguards Research & Development Association

- ISD • International Safeguards
- NDA • Non-destructive Assay
- DA • Destructive Assay
- MC&A • Materials Control & Accountability
- NSPP • Nuclear Security & Physical Protection
- NAC • Nonproliferation & Arms Control
- PTD • Packaging, Transportation & Disposition
- FO • Facility Operations
- ETK • Education, Training and Knowledge
- ET & Cyber • Emerging Technologies & Cyber

- ISD • Implementation of Safeguards
- NDA • Non-destructive Assay
- DA • Destructive Assay
- VTM • Verification Technologies and Methodologies
- C/S • Containment & Surveillance
- TKM • Training and Knowledge Management
- MBE • Material Balance Evaluation
- FD • Final Disposal
- EXC • Export Control

XX Cross Cutting
WMD Women of Mass Distinction

Technical Divisions / Working Groups

As of August 18, 2021

To search for individual abstracts and detailed session information, please visit: <https://www.abstractsonline.com/pp8/#!/10383>

Week One: August 23-26, 2021			
Time (US Eastern Daylight Time)	Monday, August 23		
9:00 am - 9:30 am	Exhibit/Poster Hall Dedicated Time		
9:30 am - 10:15 am	Presidents Welcome		Susan E. Pepper, President, INMM and Julie Oddou, President, ESARDA
10:15 am -10:30 am	Break		
10:30 am - 11:45 am	Keynote Address		Director General Rafael M. Grossi, International Atomic Energy Agency Moderators: Susan E. Pepper, President, INMM and Julie Oddou, President, ESARDA
11:45 am - 12:00 pm	Exhibit/Poster Hall Dedicated Time		
12:00 pm - 12:45 pm	Plenary Speaker		Ms. Jill Hruby, Under Secretary for Nuclear Security of the U.S. Department of Energy and Administrator of the National Nuclear Security Administration
12:45 pm - 1:30 pm	Plenary Speaker		Mr. Massimo Garribba, Deputy Director General, European Commission, Directorate-General for ENERGY Moderators: Dr. Deborah Gracio, Associate Laboratory Director, Pacific Northwest National Laboratory and Willem Janssens, Joint Research Centre, Ispra Italy
1:30 pm - 1:45 pm	Closing Remarks		Susan E. Pepper, President, INMM and Julie Oddou, President, ESARDA
1:45 pm - 2: 00 pm	Break		
2:00 pm - 2:30 pm	INMM Awards & Recognition		Susan E. Pepper, President, INMM
2:45 pm - 3:30 pm	Special Event: Presidents' Reception (Event to be held off meeting platform in REMO)		

Tuesday, August 24				
9:00 am - 9:30 am	Exhibit/Poster Hall Dedicated Time			
9:30 am - 10:30 am	Panels / Short Oral Sessions I			
		INMM	ESARDA	
	Short Oral Session A	ISD	IS	Ideas for Further Strengthening International Safeguards
	Short Oral Session B	CET/ISD	VTM	Enabling Localization through Machine Learning
	Panel C	ISD	NDA / C/S	Safeguarding the Back End of the Fuel Cycle
	Short Oral Session D	XX	XX	Increasing Diversity in Nuclear Fields I
	Panel E	NAC	VTM	An Introduction To Arms Control At The Intersection Of Policy And Technology (Selected Topics From The ACTVD Arms Control Primer)
	Panel F	NSPP		INFCIRC/908 International Working Group
	Panel G	ISD	NDA	Outreach on Key NDA Topics
	Panel H	ISD/NAC	VTM & EXC	International Nuclear Safeguards and Export Controls: A Discussion on Complementary Data, Analysis, and Goals
10:30 am -10:45 am	Break			
10:45 am - 12:30 pm	Concurrent Oral I			
	Session A	ISD	IS	Opportunities for Strengthening IAEA Safeguards - Fresh Thinking
	Session B	MC&A		Electrochemical Reprocessing Safeguards and Security by Design: The MPACT 2020 Milestone
	Session C	ISD	DA	UF6 Sampling and Analysis
	Session D	CET/FO	VTM	Applications of Machine Learning in Nonproliferation
	Session E	ETK	TKM	International Nuclear Forensics: Engagements in the Virtual World
	Session F	NSPP	VTM & C/S	Unmanned Aerial Systems and Nuclear Security
	Session G	ETK	TKM	Going Virtual: New Approaches & Technology I
	Session H	FO/PTD	FD	Material Management and Disposition
12:30 pm - 1:00 pm	Exhibit/Poster Hall Dedicated Time			
1:00 pm - 2:45 pm	Concurrent Oral II			
	Session A	ISD	IS	Resilient safeguards implementation under the pandemic conditions (Covid-19) I
	Session B	NAC	IS	Verification of Absence Declarations and Completeness
	Session C	MC&A	IS & MBE	Material Control Techniques and Approaches
	Session D	CET	VTM & C/S	Cyber Crime and Cyber Threats in the Nuclear Industry
	Session E	NSPP		Insiders I
	Session F	ISD	NDA	Active Interrogation
	Session G	ISD	IS & VTM	Novel Approaches for Evaluating the Effectiveness of Sampling Plans on Facility Level
	Session H	ETK	TKM	Going Virtual: Best Practices & Lessons Learned I
3:00 pm - 4:30 pm	INMM Annual Business Meeting			

Time	Wednesday, August 25			
9:00 am - 9:30 am	Exhibit/Poster Hall Dedicated Time			
9:30 am - 10:30 am	Plenary: Industry Perspectives		Dr. Sama Bilbao y Leon, Director General, World Nuclear Association Mr. Dale Atkinson, Chief Nuclear Officer and Chief Operating Officer, NuScale Power Mr. Kenneth Luongo, President, Partnership for Global Security Moderators: Karen Hogue, Oak Ridge National Laboratory, and Matthew Van Sickle, International Consultant	
10:30 am -10:45 am	Break			
10:45 am - 12:30 pm	Concurrent Oral III		INMM	ESARDA
	Session A	ISD	CS	Development of novel C/S measures
	Session B	ISD	NDA & FD	NDA Techniques for Spent Fuel Verification
	Session C	CET/ISD	VTM	Assessing and Deploying Emerging Technologies for Nuclear Material Management
	Session D	ISD	NDA	Tomography and Imaging I
	Session E	NSPP		Sustaining Nuclear Security during COVID
	Session F	ISD	NDA	Detection Technology & Methods I
	Session G	ETK	TKM	Knowledge Retention & Transfer
	Session H	All	All	Live Thematic Poster Sessions I (<i>Session to be held off meeting platform in REMO</i>)
				Destructive Analysis, Reference Materials and Forensics
				Insiders II
				Material outside of regulatory control III
				Safeguards Concepts, Methods and Technologies
12:30 pm - 1:00 pm	Exhibit/Poster Hall Dedicated Time			
1:00 pm - 2:45 pm	Concurrent Oral IV			
	Session A	ISD	CS & FD	Presentations and Panel: C/S and NDA Safeguards Measures for Facilities at the Back End of the Fuel Cycle
	Session B	NAC	VTM	International Partnership for Nuclear Disarmament Verification
	Session C	MC&A	MBE	Material Balance Evaluation
	Session D	CET/FO	VTM	Data Science Applications in Operations
	Session E	NSPP		International Cooperation in Nuclear Security
	Session F	NSPP		Radioactive Materials Security I
	Session G	FO	IS & DA	Nuclear Archiving and Forensics I
	Session H	ETK/NSPP	TKM	Nuclear Security and 3S Education & Training Programs

Time	Thursday, August 26			
8:30 am - 9:30 am	Special Event: Career Fair			
	<i>(Event to be held off meeting platform in REMO)</i>			
9:00 am - 9:30 am	Exhibit/Poster Hall Dedicated Time			
9:30 am - 10:30 am	Panel / Short Oral Sessions II			
		INMM	ESARDA	
	Panel A	Women of Mass Distinction	All	Women in Nuclear Security (Part I of II): Challenges and Opportunities for “Generation Now”
CANCELLED	Panel B	CET	All	Techniques, Challenges, And Concerns In Cyber Security
	Panel C	ISD	IS	Cooperation in Safeguards Implementation: Lessons Learned and Opportunities for Improvement
	Short Oral Session D	XX	All	Increasing Diversity in Nuclear Fields II
	Panel E	NAC	IS	Contributions of NGOs to Nuclear Materials Management
	Panel F	NAC	IS & TKM	Nonproliferation and Peaceful Uses in Africa
	Panel G	ISD	NDA	Overview of Key NDA Projects
	Short Oral Session H	NAC	DA	Nuclear Archeology
10:30 am -10:45 am	Break			
10:45 am - 12:30 pm	Concurrent Oral V			
	Session A	ISD	IS & VTM	New and Innovative Safeguards Approaches
	Session B	NAC	VTM	CTBT Technologies & Applications
	Session C	MC&A	IS & MBE	State System of Accounting and Control / Competent Authorities
	Session D	CET/ISD/FO	VTM & C/S	Deep Learning for Verification
	Session E	ETK	TKM	Capacity Building Programs I
	Session F	NSPP		Material Outside of Regulatory Control I
	Session G	FO	IS	Nuclear Archiving and Forensics II
	Session H	All	All	Live Thematic Poster Sessions II <i>(Session to be held off meeting platform in REMO)</i>
				Going Virtual: Best Practices & Lessons Learned II
				Going Virtual: New Approaches & Technology II
				Innovative Techniques for Reactors
				NDA Techniques and Methods
12:30 pm - 1:00 pm	Exhibit/Poster Hall Dedicated Time			
1:00 pm - 2:45 pm	Concurrent Oral VI			
	Session A	ISD	IS	Safeguards-by-Design and Approaches for Advanced Reactors
	Session B	NAC	VTM	Verification: Systems & Regimes
	Session C	ISD	IS & DA	Environmental Sample Analysis: Particle Production and Characterisation
	Session D	CET	VTM & C/S	Cyber Security Approaches in Nuclear
	Session E	NSPP	VTM	Alternate Technologies I
	Session F	FO	VTM	Robotics and Unmanned Vehicles - Considerations for Facility Operations
	Session G	PTD	FD	Spent Nuclear Fuel Management - Policy Dimensions
	Session H	All	All	Live Thematic Poster Sessions III <i>(Session to be held off meeting platform in REMO)</i>
				Detection Technologies for Nuclear Security
				Surveillance technology, review software & RDT
				Verification Technologies

3:00 pm - 4:00 pm	Special Event: Career Fair		
	<i>(Event to be held off meeting platform in REMO)</i>		
	Friday, August 27		
	Topical Meetings, Workshops and Special Events		
Time	<i>(All Friday sessions will be held off the meeting platform)</i>		
10:00am - 11:30am	International Safeguards Technical Division		
	Facility Operations Technical Division		
	Nuclear Security and Physical Protection Technical Division		
	MC&A Technical Division Meeting		
10:00 - 12:00pm	Joint INMM-ESARDA C/S Working Group		
	INMM ASC N15 and INMM N15-5.1 Subcommittee Annual Meeting		
11:45am - 1:15pm	Verification Technologies and Methods/Open Source and Geospatial Information Working Group		
	Nonproliferation and Arms Control Technical Division		
	Education, Training and Knowledge Management Committees		
1:30pm - 2:45pm	INMM International Safeguards Professional Certification Program - Preview and Discussion		
	DA Working Group		
	Cyber and Emerging Technologies (CET) Committee and Data Science Working Group		
	Week Two: August 30 - September 1, 2021		
Time	Monday, August 30		
9:00 am - 9:30 am	Exhibit/Poster Hall Dedicated Time		
9:30 am - 10:30 am	Thematic Panel Sessions: Advancing Together - Resilience and Innovation in Nuclear Materials Management		
	Session A	Innovation: Women Leaders in Emerging Tech - Views and Experiences in Nuclear Materials Management	
	Session B	Resilience: Executing the Mission during COVID	
	Session C	Advancing Together: Insights from Collaborative Leaders	
10:30 am -10:45 am	Break		
10:45 am - 12:30 pm	Concurrent Oral VII	INMM	ESARDA
	Session A	CET/ISD	VTM & IS
	Session B	XX	All
	Session C	ISD	DA
	Session D	CET/ISD	VTM & C/S
	Session E	NSPP	VTM
	Session F	FO	All
	Session G	NSPP	C/S
	Session H	ETK	TKM
12:30 pm - 1:00 pm	Exhibit/Poster Hall Dedicated Time		

1:00 pm - 2:45 pm	Concurrent Oral VIII			
	Session A	ISD	IS & VTM	The State of Information Management for Safeguards
	Session B	ISD	IS	Resilient Safeguards Implementation Under the Pandemic Conditions (Covid-19) II
	Session C	MC&A	DA & MBE	Nuclear Reference Materials
	Session D	ISD	VTM & NDA	Machine Learning & Neural Networks
	Session E	NSPP		Security Culture/Insiders
	Session F	PTD	FD	Advancements in Spent Nuclear Fuel Management (featuring Pacific Rim Collaboration)
	Session G	FO	IS	Innovative Fuel Cycles and SMRs
	Session H	All	All	Live Thematic Poster Sessions IV (<i>Session to be held off meeting platform in REMO</i>)
				CTBT Verification Technologies and DPRK Nonproliferation Issues
				Detection technology & Methods II
				Microcalorimetry for SFG
				Nuclear Data
				Nuclear Security Policies and Approaches
Time	Tuesday, August 31			
9:00 am - 9:30 am	Exhibit/Poster Hall Dedicated Time			
9:30 am - 10:30 am	Panel / Short Oral Sessions III			
		INMM	ESARDA	
	Panel A	ISD/CET	VTM	Ethical Uses of Emerging Technologies for Nuclear Materials Management
	Panel B	XX	All	Synergies and Conflicts for Interfaces of Nuclear and Radioactive Materials Transportation Packages 3S
	Short Oral Session C	NSPP		Security of Advanced Reactors
	Short Oral Session D	PTD	FD	Testing for Packaging and Transportation
	Panel E	NAC	VTM	Special Session on the Treaty on The Prohibition of Nuclear Weapons
	Panel F	NAC	VTM	The Work Of The Quad Nuclear Verification Partnership: Systematising Nuclear Arms Control Verification
	Short Oral Session G	ISD	IS & NDA	Neutrino Detectors for Safeguards and Nonproliferation
	Short Oral Session H	NSPP		Radioactive Materials Security II
10:30 am -10:45 am	Break			
10:45 am - 12:30 pm	Concurrent Oral IX			
	Session A	ISD	IS	Further Developments in State Level Safeguards
	Session B	NAC	IS & VTM	Today's Verification Challenges: Lessons from the Past
	Session C	MC&A	IS & MBE	Information Management and Analysis
	Session D	NDA	NDA	Panel: What can Neutrino Detectors do for Nonproliferation, Arms Control, and Safeguards: Results of the Nu Tools Study
	Session E	NSPP		Material Outside of Regulatory Control II
	Session F	PTD		Radioactive Material Transport
	Session G	ISD	IS	ESARDA Special Panel: Safeguards Inspection Regimes in Different Countries
	Session H	NAC	All	Panel: Breaking the Stigma: LGBTQ+ Inclusion in Nuclear Materials Management
12:30 pm - 1:00 pm	Exhibit/Poster Hall Dedicated Time			

1:00 pm - 2:45 pm	Concurrent Oral X			
	Session A	ISD	CS	Advancements in Surveillance for Safeguards
	Session B	XX	All	Security and Licensing of Advanced Reactors
	Session C	ISD	DA	Hybrid K-Edge Densitometry and X-Ray Fluorescence
	Session D	ISD	NDA	Tomography and Imaging II
	Session E	NSPP		Transportation Security
	Session F	CET	VTM & C/S	Novel Techniques in Cyber and Risk Assessments
	Session G	ISD	FD & MBE	Holdup, Decommissioning and Waste
	Session H	Women of Mass Distinction	All	Women in Nuclear Security (Part II of II): Panel Discussion on Empowerment, Growth, and Maximizing Impact
3:00 pm - 4:00 pm	Special Event: Women of Mass Distinction Networking <i>(Event to be held off meeting platform in REMO)</i>			
Time	Wednesday, September 1			
9:00 am - 9:30 am	Exhibit/Poster Hall Dedicated Time			
9:30 am - 10:30 am	Panel / Short Oral Sessions IV			
		INMM	ESARDA	
	Panel A	XX	IS	Advanced Reactors and Nuclear Policy: Building Toward the Future
	Short Oral Session B	NSPP	TKM	Training in Nuclear Security
	Panel C	ISD	NDA & DA	Uncertainty in Measurements
	Panel D	ISD	IS	New and Future Treaties
	Panel E	NAC	VTM	The International Partnership for Nuclear Disarmament Verification: Advancing Technology and Approaches
	Panel F	ETK	TKM	The Fading Pipeline: Global Nonproliferation Education And Professional Development - Lessons Learned For A Changing World
	Panel G	NAC	EXC	Special Session on Export Control: National Laboratory Challenges
	Panel H	NSPP		Material Outside of Regulatory Control, Featuring Miami, Florida Case Study
10:30 am -10:45 am	Break			
10:45 am - 12:30 pm	Concurrent Oral XI			
	Session A	ISD	IS & VTM	Shaping of Safeguards in the Digital Era: Exploiting Data and Information
	Session B	XX	VTM	Safeguards Technologies and Approaches for Molten Salt Reactors
	Session C	NAC	EXC	Policy Considerations, Recent Trends and Techniques in the Implementation of Strategic Trade Controls
	Session D	ETK	TKM	Capacity Building Programs II
	Session E	ISD	IS & NDA	Modeling and Simulation Tools
	Session F	XX	All	Strategies for Efficiently Addressing the 3S's: Safety, Security and Safeguards
	Session G	NSPP		Panel: Remediation and Recommissioning of the University of Washington's Research and Training Building (Harborview) Following the 2019 Cs-137 Source Accident
	Session H	FO	IS	Future Facilities and Processing Technologies
12:30 pm - 12:45 pm	Break			

12:45 pm - 1:45 pm	Closing Plenary			
	Ensuring our Future Workforce through Partnership and Engagement			
				Dr. Karen Skubal, Program Manager, DOE Office of Science
				Moderators: Ana Raffo-Caiado, Group Leader, Safeguards Concepts & Implementation Measures, Nuclear Non-Proliferation Division, Oak Ridge National Laboratory and Willem Janssens, Joint Research Centre, Ispra Italy
1:45 pm - 2:30 pm	Closing Remarks, Prizes, Student Paper Awards and Poster Awards			Susan E. Pepper, President, INMM and Julie Oddou, President, ESARDA