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PROGRAM SCHEDULE

Sunday, July 14, 2013

		Location
11:00 a.m. – 5:00 p.m.	Speaker Ready Room	Director's Suite V
Noon – 5:00 p.m.	Registration	Grand Center and North Registration Counters
2:00 p.m. – 5:00 p.m.	Technical Division Meetings	
	Facility Operations	Shirley Cox Director's Suite VI
	International Safeguards	James Larrimore Desert Ballroom 4-6
	Materials Control and Accountability	Cary Crawford Desert Ballroom 12-14
	Nonproliferation and Arms Control	Joyce Connery Desert Ballroom 9-10
	Nuclear Security and Physical Protection	Tom Bonner Desert Ballroom 11
	Packaging, Transportation and Disposition	Steve Bellamy Director's Suite IV
5:00 p.m. – 6:00 p.m.	INMM New Student Orientation	Steve Ward Santa Rosa Ballroom
6:00 p.m. – 7:30 p.m.	President's Reception (Complimentary beer and wine)	Desert Ballroom 8
7:30 p.m. – 9:00 p.m.	Student Mixer Education and Training Committee	Steve Ward Santa Rosa Ballroom

Speaker Ready Room

Director's Suite V

Sunday 11:00 a.m. – 5:00 p.m.

Monday 6:30 a.m. – 5:00 p.m.

Tuesday 6:30 a.m. – 3:30 p.m.

Wednesday 6:30 a.m. – 3:30 p.m.

Thursday 6:30 a.m. – 10:30 a.m.



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PROGRAM SCHEDULE

Monday, July 15, 2013

		Location
6:30 a.m. – 5:00 p.m.	Speaker Ready Room	Director's Suite V
7:00 a.m. – 7:45 a.m.	Speakers' Breakfast Teressa McKinney (with Paul Ebel)	Springs Ballroom G
7:30 a.m. – 5:00 p.m.	Registration	Grand Center and North Registration Counters
7:45 a.m. – 10:00 a.m.	Companions' Continental Breakfast	Santa Rosa Ballroom
8:00 a.m. – 8:00 p.m.	Ad Hoc Committee Meeting Rooms	Director's Suite II and Director's Suite III
8:00 a.m. – 8:15 a.m.	Opening Remarks Ken Sorenson , <i>INMM President</i> Larry Satkowiak , <i>INMM Vice President</i>	Desert Ballroom 7
8:15 a.m. – 9:40 a.m.	Opening Plenary: Panel on Nonproliferation Policy and Implementation	Desert Ballroom 7
	 Panelists: Neile L. Miller Acting Administrator for National Nuclear Security Administration <i>U.S. Department of Energy</i>	
	 Anita E. Friedt Principal Deputy Assistant Secretary for Nuclear and Strategic Policy <i>Bureau of Arms Control, Verification and Compliance</i>	
9:40 a.m. – 10:00 a.m.	Coffee Break in the Exhibit Hall	
10:00 a.m. – Noon	Concurrent Technical Sessions I	
Session A	Facility Operations – Issues and Best Practices Co-Chairs: Morris Hassler, <i>Y-12 Security Complex, United States</i> , and Scott Davies, <i>Value Added Solutions, United States</i>	Springs Ballroom D-E
10:00 a.m. Abstract #426	Savannah River Site's H-Canyon Facility: Impacts of Foreign Obligations on Special Nuclear Material Disposition Virginia E. Magoulas <i>Savannah River National Laboratory, Aiken, SC, USA</i>	
10:20 a.m. Abstract #385	Suspension on Release of Uncontaminated Scrap from DOE Radiological Areas: Current Status and Strategies for Management Richard Meehan <i>National Nuclear Security Administration, Oak Ridge, TN, USA</i>	
10:40 a.m. Abstract #476	Accredited Standards Committee N15 Developments and Activities Melanie May ¹ , Lynne Preston ¹ , Steven Ward ² ¹ <i>U.S. Department of Energy, Washington, DC, USA</i> , ² <i>Entergy Operations, Inc., Port Gibson, MS, USA</i>	
11:00 a.m. Abstract #386	Feedback from Industry on Unique UF₆ Cylinder Identifier and Global Monitoring Concept Jessica L. White-Horton ¹ , J. Michael Whitaker ¹ , Dan M. Collier ² , Karyn R. Durbin ³ ¹ <i>Oak Ridge National Laboratory, Oak Ridge, TN, USA</i> , ² <i>NAC International, Norcross, GA, USA</i> , ³ <i>National Nuclear Security Administration, Washington, DC, USA</i>	



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11:20 a.m. Abstract #381	Remote Imaging of Critical Facilities with Cosmic Rays Guy Jonkmans ¹ , Jacques Dubeau ² , Victor Golovko ¹ , Bhaskar Sur ¹ , Sampath Witharana ² <i>¹Atomic Energy of Canada Ltd, Chalk River, ON, Canada, ²DETEC-rad, Gatineau, QC, Canada</i>	
Session B	International Safeguards/Nonproliferation and Arms Control – International Safeguards Challenges Co-Chairs: James Larrimore, <i>Consultant, United States</i> and Herman Nackaerts, <i>International Atomic Energy Agency, Austria</i>	Desert Ballroom 7
10:00 a.m. Abstract #580	IAEA Safeguards -- Evolving Its 40-Year-Old Obligations to Meet Today's Verification Undertakings Olli J. Heinonen <i>Belfer Center for Science & International Affairs, Harvard Kennedy School, Cambridge, MA, USA</i>	
10:20 a.m. Abstract #212	The IAEA Safeguards Function – Responsibilities Under Safeguards Agreements, the NPT and the Statute John Carlson ¹ , Andreas Persbo ² <i>¹Consultant, Queanbeyan NSW, Australia, ²Verification Research and Information Centre, London, United Kingdom</i>	
10:40 a.m. Abstract #423	Enhancing the Effectiveness of the IAEA Safeguards System J. Stephen Adams <i>U.S. Department of State, Washington, DC, USA</i>	
11:00 a.m. Abstract #370	Challenges to the 2015 NPT Review Conference Susan Burk , Katherine Bachner <i>Brookhaven National Laboratory, Upton, NY, USA</i>	
11:20 a.m. Abstract #587	Panel: Safeguards and the NPT Panel Moderator: James A. Larrimore <i>Consultant, Del Mar, CA, USA</i> J. Stephen Adams <i>U.S. Department of State, Washington, DC, USA</i> Susan Burk <i>Brookhaven National Laboratory, Upton, NY, USA</i> John Carlson <i>Consultant, Queanbeyan NSW, Australia</i> Olli J. Heinonen <i>Belfer Center for Science & International Affairs, Harvard Kennedy School, Cambridge, MA, USA</i>	
Session C	Materials Control and Accountability – Destructive Analysis Techniques Co-Chairs: Peter Mason, <i>New Brunswick Laboratory, United States</i> and Sunil Chirayath, <i>Texas A&M University, United States</i>	Desert Ballroom 4-6
10:00 a.m. Abstract #486	IAEA Nuclear Material Round Robin: Summary of Results and Recommendations for Safeguards Laboratories Steven Balsley , David Amaraggi, Josef Berger, Stefan Bürger, Markus Kohl, Urska Repinc, Andreas Schachinger, Steven Walsh <i>International Atomic Energy Agency, Vienna, Austria</i>	
10:20 a.m. Abstract #218	Comparison of Femtosecond and Nanosecond Boron Isotopic Ratio Measurements with Laser-induced Breakdown Spectroscopy Phyllis Ko <i>The Pennsylvania State University, University Park, PA, USA</i>	



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10:40 a.m. Abstract #427 STUDENT PAPER	Shadowgraphic Imaging with High Temporal Resolution as a Diagnostic Tool for Laser-induced Breakdown Spectroscopy Jessica McNutt <i>The Pennsylvania State University, State College, PA, USA</i>	
11:00 a.m. Abstract #377 STUDENT PAPER	Investigation of Trace Uranium in Biological Matrices James Miller¹ , William Charlton ¹ , Robert Steiner ² ¹ <i>Nuclear Security Science and Policy Institute, College Station, TX, USA,</i> ² <i>Los Alamos National Laboratory, Los Alamos, NM, USA</i>	
11:20 a.m. Abstract #409	Adaptation of HPLC-ICPMS Actinide Measurement Protocols for Nuclear Projects at the Oak Ridge National Laboratory Joe M. Giaquinto , Tammy Keever, Ralph Ilgner, Ben Roach <i>Oak Ridge National Laboratory, Oak Ridge, TN, USA</i>	
11:40 a.m. Abstract #125	Standards for Uranium Hexafluoride (UF₆) Mass Spectrometry Stephan Richter¹ , Heinz Kuehn ² , Jan Truyens ¹ , Sebastien Mialle ¹ , Yetunde Aregbe ¹ ¹ <i>Institute for Reference Materials and Measurements, Geel, Belgium,</i> ² <i>Institute for Reference Materials and Measurements (retired), Geel, Belgium</i>	
Session D	Nonproliferation and Arms Control – Proliferation Resistance Chair: Steve Mladineo, <i>Pacific Northwest National Laboratory, United States</i>	Springs Ballroom H-J
10:00 a.m. Abstract #534	Molten Salt Reactors: Resource Requirements and Proliferation-Risk Attributes of Single-Fluid and Dual-Fluid Designs Edward B. McClamrock, Alexander Glaser <i>Princeton University, Princeton, NJ, USA</i>	
10:20 a.m. Abstract #217 STUDENT PAPER	Bayesian Network Environment for Agent Based Modeling Proliferation Risk Analysis Royal A. Elmore , William S. Charlton <i>Texas A&M University, College Station, TX, USA</i>	
10:40 a.m. Abstract #127 STUDENT PAPER	Study and Assessment of Proliferation Resistance Effectiveness Thibault Clement , Yusuke Kuno, Satoru Tanaka <i>The University of Tokyo, Tokyo, Japan</i>	
11:00 a.m. Abstract #572	Proliferation Resistance Assessment of Aqueous Homogeneous Solution Reactor for Medical Isotope Production Fnu Sihana , Susetyo Hario Putero, Ester Wijayanti, Fnu Mondjo <i>Universitas Gadjah Mada, Yogyakarta, Indonesia</i>	
11:20 a.m. Abstract #296 STUDENT PAPER	Simulating State Proliferation for Nuclear Weapons Latency David J. Sweeney , William S. Charlton <i>Texas A&M University, College Station, TX, USA</i>	
Session E	Nonproliferation and Arms Control – Transparency and Verification Chain of Custody Methods Chair: Arden Dougan, <i>U.S. Department of Energy/National Nuclear Security Administration, United States</i>	Springs Ballroom A-C
10:00 a.m. Abstract #470	Chain of Custody Backbone System Evaluation Experiments Regina Griego ¹ , Jay Brotz ¹ , Michael Coram ¹ , Justin Fernandez ¹ , Larry Bruskas ¹ , Sharon DeLand¹ , Geoffrey Forden ¹ , Lloyd Montoya ² , Gerald Schotik ³ ¹ <i>Sandia National Laboratories, Albuquerque, NM, USA,</i> ² <i>National Security Technologies, Las Vegas, NV, USA,</i> ³ <i>Nuclear Security Technologies, Las Vegas, NV, USA</i>	
10:20 a.m. Abstract #199	An Alternative, Frangible, Tamper-indicating Material for Use within Nuclear Weapon Dismantlement Verification Sarah E. McOmish , Andrew Cox, Cheryl Macqueen, Nicholas Bazin, Ian Hayes, <i>Atomic Weapons Establishment, Reading, United Kingdom</i>	



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10:40 a.m. Abstract #452	Controlling Technical Diversity in Monitoring Regimes Using the Secure Sensor Platform Jay K. Brotz , Michael Coram, Maikael Thomas <i>Sandia National Laboratories, Albuquerque, NM, USA</i>	
Session F	Packaging, Transportation, and Disposition – Packaging, Design and Content Co-Chairs: Jeffrey England, <i>Savannah River National Laboratory, United States</i> , and James Shuler, <i>U.S. Department of Energy, United States</i>	Springs Ballroom F
10:00 a.m. Abstract #397	Defining a Plutonium Oxide Content Envelope for Shipment Dan Leduc , Robert Watkins, Steven Nathan <i>Savannah River National Laboratory, Aiken, SC, USA</i>	
10:20 a.m. Abstract #404	Recertification of the Model 9977 Radioactive Material Packaging Glenn Abramczyk ¹ , J S. Bellamy ¹ , S J. Nathan ² , B M. Loftin ¹ ¹ <i>Savannah River National Laboratory, Aiken, SC, USA</i> , ² <i>Savannah River Nuclear Solutions, Aiken, SC, USA</i>	
10:40 a.m. Abstract #531	Scraping the Bottom of the Barrel: Oddball Wastes from the Savannah River Site Robert N. Ceo ¹ , Daniel Remington ² , Joe Wachter ³ ¹ <i>Canberra Industries, Oak Ridge, TN, USA</i> , ² <i>Canberra Industries, Greenwood Village, CO, USA</i> , ³ <i>Canberra Industries, Los Alamos, NM, USA</i>	
Session G	Nuclear Security and Physical Protection – Nuclear and Radiological Detection Technologies I Co-Chairs: Nancy Jo Nicholas, <i>Los Alamos National Laboratory, United States</i> , and Corey Hinderstein, <i>Nuclear Threat Initiative, United States</i>	Desert Ballroom 1–3
10:00 a.m. Abstract #189 STUDENT PAPER	Gamma Response in a Synthetic Aperture System for Roadside Detection of Special Nuclear Material Christopher A. Edgar , Jessica N. Paul, Ce Yi, Glenn E. Sjoden <i>Georgia Institute of Technology, Atlanta, GA, USA</i>	
10:20 a.m. Abstract #186	Radiation Monitoring System in Helsinki Airport – Lessons Learned Tapani P. Honkamaa , Philip Holm, Sakari Ihantola, Harri Toivonen <i>STUK, Radiation and Nuclear Safety Authority, Helsinki, Finland</i>	
10:40 a.m. Abstract #352	FLASH Portals: Radiation Portal Monitor SNM Detection Using Time Correlation Techniques David Murer ¹ , Douglas Blackie ² , Rico Chandra ³ , Giovanna Davatz ³ , Hannes Friederich ¹ , Leonard Goeltl ³ , Ramsey Al-Jebali ³ , Rebecca Marsh ² , Paolo Peerani ⁴ ¹ <i>ETH Zurich/Arktis Radiation Detectors, Zurich, Switzerland</i> , ² <i>Atomic Weapons Establishment, Aldermaston, United Kingdom</i> , ³ <i>Arktis Radiation Detectors, Zurich, Switzerland</i> , ⁴ <i>Joint Research Centre, Ispra, Italy</i>	
11:00 a.m. Abstract #555	Development of AIMS Hybrid Tool for Active Interrogation Alireza Haghghat ¹ , Katherine Royston ¹ , William Walters ¹ , Ce Yi ² , Glenn Sjoden ³ ¹ <i>Virginia Tech, Arlington, VA, USA</i> , ² <i>Georgia Tech Research Institute, Atlanta, VA, USA</i> , ³ <i>Georgia Institute of Technology, Atlanta, GA, USA</i>	
11:20 a.m. Abstract #282 STUDENT PAPER	SNM Detection via Electron Excitation in the Air that Surrounds the Source Geehyun Kim , John Nees, Anthony Bui, Inyong Kwon, Mark David Hammig, Teahoon Kang <i>University of Michigan, Ann Arbor, MI, USA</i>	



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Session H	Education and Training – Best Practices and Perspectives Chair: Debbie Dickman <i>Pacific Northwest National Laboratory, United States</i>	Springs Ballroom K-L
10:00 a.m. Abstract #488	2013 Snapshot of NGS Human Capital Development and Future Roadmap Melissa Scholz ¹ , Shaheen Dewji ² , Sarah Poe ³ , Michael Whitaker ² ¹ <i>U.S. National Nuclear Security Administration, Washington, DC, USA,</i> ² <i>Oak Ridge National Laboratory, Oak Ridge, TN, USA,</i> ³ <i>Brookhaven National Laboratory, Upton, NY, USA</i>	
10:20 a.m. Abstract #128	Teaching Nuclear Nonproliferation and International Safeguards: How We Got Here and Why History Matters J. Christian Kessler <i>NorthRaven Consulting LLC and SUNY Stony Brook University, Baiting Hollow, NY, USA</i>	
10:40 a.m. Abstract #174	How Effective Can Training Be? A Holistic Approach Jaime Vidaurre-Henry <i>International Consultant, Vienna, Austria</i>	
11:00 a.m. Abstract #541	Experience of Implementation of a System Approach to Training Personnel at Nuclear Sites in the Russian-American Project on Nuclear Security Culture Vladimir Kornelyuk <i>Central Institute for Continuing Education and Training, Obninsk, Russian Federation</i>	
11:20 a.m. Abstract #567	Establishing of the Center of Professional Training, Retraining and Professional Development on the Counteraction to Nuclear Terrorism Issues in Modern Conditions at SNUNEI Dmytro A. Cherkashyn <i>Sevastopol National University of Nuclear Energy and Industry, Sevastopol, Ukraine</i>	
11:40 a.m. Abstract #540	IAEA Safeguards Training: Building on Synergies between Education and Training in International Safeguards Susan E. Pickett , Jean-Maurice Crete, Rebecca Stevens <i>International Atomic Energy Agency, Vienna, Austria</i>	
10:00 a.m. – 1:00 p.m.	Exhibits Open	Desert Ballroom 8
Noon – 2:00 p.m.	Lunch Break (<i>On Your Own</i>)	
Noon – 2:00 p.m.	<i>JNMM Roundtable (By Invitation Only)</i>	Dennis Mangan Desert Ballroom 13
2:00 p.m. – 5:00 p.m.	Poster Setup	North Foyer
2:00 p.m. – 5:00 p.m.	Exhibits Open	Desert Ballroom 8
2:00 p.m. – 5:20 p.m.	Concurrent Technical Sessions II	
Session A	Facility Operations/International Safeguards – Safety, Security and Safeguards Co-Chairs: Skip Kerschner, <i>Pacific Northwest National Laboratory, United States</i> , and Rick Poland, <i>Savannah River National Laboratory, United States</i>	Springs Ballroom D-E
2:00 p.m. Abstract #318	Report on the University of New Mexico Workshop “Success Through Safety, Security, and Safeguards by Design (3SBD): From Concept to Application” Edward D. Blandford, Chantell L. Murphy <i>University of New Mexico, Albuquerque, NM, USA</i>	



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<p>2:20 p.m. Abstract #382</p>	<p>The 3S Concept — Safety, Security and Safeguards: 2012 IAEA Workshop Jessica L. White-Horton¹, Donald N. Kovacic¹, Elina Martikka², Tapani Hack², Jose Bastos³ <i>¹Oak Ridge National Laboratory, Oak Ridge, TN, USA, ²STUK - Radiation and Nuclear Safety Authority, Helsinki, Finland, ³Federal Authority for Nuclear Regulation, Abu Dhabi, United Arab Emirates</i></p>
<p>2:40 p.m. Abstract #224 STUDENT PAPER</p>	<p>Application of Fault Detection, Diagnosis and Fault Tolerant Control Algorithm to a Benchmark Multi-Input Multi-Output Quadruple Tank Process Manit D. Shah¹, Nishant Parikh² <i>¹Texas A&M University, College Station, TX, USA, ²Electrical Engineering Department, School of Technology, Pandit Deendayal Petroleum University, Gandhinagar, India</i></p>
<p>3:00 p.m. - 3:20 p.m. Coffee Break in the Exhibit Hall</p>	
<p>3:20 p.m. Abstract #374</p>	<p>IAEA Safeguards in New Nuclear Facilities James Sprinkle, Jill Cooley, Neil Tuley, Rebecca Stevens, Christina Ciuculescu <i>International Atomic Energy Agency, Vienna, Austria</i></p>
<p>3:40 p.m. Abstract #441</p>	<p>Comparative Study of the Implementation of Safeguards in the United States, United Kingdom, Germany and the Netherlands Amy Johnson <i>URENCO USA, Eunice, NM, USA</i></p>
<p>4:00 p.m. Abstract #207</p>	<p>Managing the Safety, Security, and Safeguards (3S) Relationship: A National Regulatory Authority Perspective U.S. Nuclear Regulatory Commission David H. Hanks <i>U.S. Nuclear Regulatory Commission, Washington, DC, USA</i></p>
<p>4:20 p.m. Abstract #360</p>	<p>Safeguards for a Disposal Facility for Spent Nuclear Fuel — Challenge for 3S Elina Martikka, Tapani Hack, Tapani Honkamaa, Kai Hämäläinen, Marko Hämäläinen, Mikael Moring, Olli Okko <i>STUK, Radiation and Nuclear Safety Authority, Helsinki, Finland</i></p>
<p>Session B International Safeguards — Process Monitoring for Safeguards Desert Ballroom 1-3 Co-Chairs: Scott DeMuth, <i>Los Alamos National Laboratory, United States</i>, and Kory Budlong-Sylvester, <i>Los Alamos National Laboratory, United States</i></p>	
<p>2:00 p.m. Abstract #167</p>	<p>Opening the Data Spigots with PM Data: Data Indigestion or Improved Safeguards? Tom Burr, Michael S. Hamada <i>Los Alamos National Laboratory, Los Alamos, NM, USA</i></p>
<p>2:20 p.m. Abstract #166</p>	<p>Using Operator Solution Monitoring in International Safeguards Tom Burr, Michael S. Hamada <i>Los Alamos National Laboratory, Los Alamos, NM, USA</i></p>
<p>2:40 p.m. Abstract #142</p>	<p>Detecting Proliferation Activities via System-centric Integration and Interpretation of Multi-Modal Data Collected from a System of Sensor Humberto E. Garcia, Michael F. Simpson, Wen-Chiao Lin, Tae-Sic Yoo, Reed B. Carlson <i>Idaho National Laboratory, Idaho Falls, ID, USA</i></p>
<p>3:00 p.m. - 3:20 p.m. Coffee Break in the Exhibit Hall</p>	



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3:20 p.m. Abstract #439	Developing Analysis Algorithms for Feed and Withdrawal Operations Ross D. Snow , James Garner, Michael Whitaker <i>Oak Ridge National Laboratory, Oak Ridge, TN, USA</i>
3:40 p.m. Abstract #549 STUDENT PAPER	A New Multivariable Sensor Technique to Measure Temperature, Pressure and Flow Rate in Nuclear Power Plant Vivek J. Maradia , Gunjan Indauliya <i>Pandit Deendayal Petroleum University, Gandhinagar, India</i>
4:00 p.m. Abstract #407	Conceptual Development of the Remote Monitoring System for Safeguarding of the Dry Cask Storage Facilities Alexandra Khudoleeva , Sunil S. Chirayath, William S. Charlton <i>Texas A&M University, College Station, TX, USA</i>
4:20 p.m. Abstract #165	Estimating Alarm Thresholds for Process Monitoring Data Tom Burr ¹ , Michael Hamada ¹ , Misha Skurikhin ¹ , John Howell ² , Brian Weaver ¹ , Larry Ticknor ¹ <i>¹Los Alamos National Laboratory, Los Alamos, NM, USA, ²University of Glasgow, Glasgow, United Kingdom</i>
Session C	International Safeguards/Nuclear Security and Physical Protection – Desert Ballroom 7 Virtual Reality and Immersive Learning for Nuclear Safeguards Co-Chairs: Susan Pickett, <i>International Atomic Energy Agency, Austria</i> , and João Gonçalves, <i>European Commission – Joint Research Centre, Italy</i>
2:00 p.m. Abstract #202	Safeguards Training in Virtual Environments: Pilot Developments at the IAEA Susan E. Pickett ¹ , Carlos Olivieri ¹ , Chris Owens ² , Teofilo Moltó-Caracena ³ <i>¹International Atomic Energy Agency, Vienna, Austria, ²Applied Research Associates, Alexandria, VA, USA, ³European Commission-Joint Research Centre, Ispra, Italy</i>
2:20 p.m. Abstract #564	Lessons Learned and Potential Paths Forward in Virtual Reality Developments for the International Atomic Energy Agency Josh K. Tackettien ¹ , Chris Owens ² , Randy Brown ³ <i>¹Brookhaven National Laboratory, Upton, NY, USA, ²Applied Research Associates, Alexandria, VA, USA, ³Applied Research Associates, Virtual Heroes Division, Raleigh, NC, USA</i>
2:40 p.m. Abstract #332	Development of Training Software for Fuel Fabrication Plant Byung Marn Koh, Na Young Lee <i>Korea Institute of Nuclear Nonproliferation and Control, Daejeon, South Korea</i>
3:00 p.m. – 3:20 p.m.	Coffee Break in the Exhibit Hall
3:20 p.m. Abstract #161	Hands-on Training of IAEA Safeguards Surveillance Concepts Using a VR-based Application Teofilo Moltó-Caracena ¹ , João G. M. Gonçalves ¹ , Susan Pickett ² <i>¹European Commission - Joint Research Centre, Ispra, Italy, ²International Atomic Energy Agency, Vienna, Austria</i>
3:40 p.m. Abstract #162	Real-time, Accurate Radioactive Source Representation for Virtual Reality-based Training on Radiation Detection Teofilo Moltó-Caracena ¹ , João G. M. Gonçalves ¹ , Paolo Peerani ¹ , Eduardo Vendrell-Vidal ² <i>¹European Commission - Joint Research Centre, Ispra, Italy, ²Universidad Politécnica de Valencia, Valencia, Spain</i>
4:00 p.m. Abstract #593	Roundtable: Virtual Reality and Immersive Learning for Nuclear Security and Safeguards Susan Pickett ¹ , João G. M. Gonçalves ² <i>¹International Atomic Energy Agency, Vienna, Austria, ²European Commission - Joint Research Centre, Ispra, Italy</i>



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Session D	Materials Control and Accountability – Nondestructive Analysis Neutron Measurements I	Desert Ballroom 4-6
2:00 p.m. Abstract #123	Analytic Model for Dead Time Effect in Neutron Multiplicity Counting Chen Dubi ¹ , Tal Ridnik ² , Itamar Israelshvili ³ <i>¹Nuclear Research Center of the Negev, Beer Sheva, Israel, ²Israel Atomic Energy Commission, Tel Aviv, Israel, ³Nuclear Research Center of the Negev, Beer Sheva, Israel</i>	
2:20 p.m. Abstract #124 STUDENT PAPER	Optimization of the Photoneutron Flux Emitted by an Electron Accelerator for Neutron Interrogation Applications Using MCNPX and TRIPOLI-4 Monte Carlo Codes and Performance Assessment on 220 Liter Nuclear Waste Mock-up Drums Adrien Sari ¹ , Frédérick Carrel ¹ , Cédric Jouanne ² , Frédéric Lainé ¹ , Abdallah Lyoussi ³ , Odile Petit ² <i>¹CEA LIST, Gif-sur-Yvette, France, ²CEA DEN, Gif-sur-Yvette, France, ³CEA DEN, Saint-Paul-Lez-Durance, France</i>	
2:40 p.m. Abstract #134	Preliminary Progress of Developing the Plutonium Mass Attribute Assay Equipment Liu Xiaobo ¹ , Lu Yi ¹ , Bai Zhongxiong ¹ , Ying Yanpeng ¹ , Chen Ligao ² <i>¹Institute of Nuclear Physics and Chemistry, Mianyang, China, ²Dept of Engineering Physics, Tsinghua University, Beijing, China</i>	
3:00 p.m. – 3:20 p.m.	Coffee Break in the Exhibit Hall	
3:20 p.m. Abstract #196	Improvements in Known Multiplication Analysis: Passive Assay of High-impurity Plutonium Oxide and Metal Franklin DuBose <i>Savannah River National Laboratory, Aiken, SC, USA</i>	
3:40 p.m. Abstract #216 STUDENT PAPER	High Activity-Active Well Coincidence Counter Monte Carlo Verification Analysis for Non-destructive Measurement of HEU Residue from Molybdenum Separation Process Spencer Mickum <i>Georgia Institute of Technology, Atlanta, GA, USA</i>	
4:00 p.m. Abstract #223	Feasibility Study on Passive Neutron Technique Applied to Fuel Debris Measurement at Fukushima Daiichi Nuclear Power Plants Taketeru Nagatani , Shinji Nakajima, Takashi Asano <i>Japan Atomic Energy Agency, Tokai-mura, Japan</i>	
4:20 p.m. Abstract #243 STUDENT PAPER	Improvements in the MCNPX-PoliMi Post-processing Code for Determining Detector Response Marc L. Ruch , Shaun D. Clarke, Sara A. Pozzi <i>University of Michigan, Ann Arbor, MI, USA</i>	
4:40 p.m. Abstract #444 STUDENT PAPER	Pulse-Shape Discrimination Capabilities of the EJ-299 Plastic Scintillator Mark M. Bourne , Shaun D. Clarke, Sara A. Pozzi <i>University of Michigan, Ann Arbor, MI, USA</i>	
5:00 p.m. Abstract #591 STUDENT PAPER	Low-energy Neutron Measurements with EJ-309 Liquid Scintillator Detectors Mark A. Norsworthy , Cameron A. Miller, Shaun D. Clarke, Sara A. Pozzi <i>University of Michigan, Ann Arbor, MI, USA</i>	



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Session E	Materials Control and Accountability – NNSA Special Session Chair: Amy Whitworth, U.S. Department of Energy/National Nuclear Security Administration, United States	Springs Ballroom F
2:00 p.m. Abstract #547	Supporting Documentation-Aids for NNSA MC&A Operations Deborah Aguero <i>National Security Technologies, LLC, Mercury, NV, USA</i>	
2:20 p.m. Abstract #301	MC&A Lessons Learned from a Security Event Amy Wilson, Harold Wheat <i>Y12 National Security Complex, Oak Ridge, TN, USA</i>	
2:40 p.m. Abstract #246	Y-12 Legacy Measurement Techniques for Enriched Uranium Solution Tanks Harold Wheat <i>B&W Y-12, Oak Ridge, TN, USA</i>	
3:00 p.m. – 3:20 p.m.	Coffee Break in the Exhibit Hall	
3:20 p.m. Abstract #215	LANL Implementation of an Automated Tamper-indicating Device Process Dana Sandoval <i>Los Alamos National Laboratory, Los Alamos, NM, USA</i>	
Session F	Nonproliferation and Arms Control – Nonproliferation Policy Chair: Corey Hinderstein, Nuclear Threat Initiative, United States	Springs Ballroom H-J
2:00 p.m. Abstract #428	Responding to Nuclear Nonproliferation J. Stephen Adams , Mark W. Goodman <i>U.S. Department of State, Washington, DC, USA</i>	
2:20 p.m. Abstract #178	Implications of the United Nations Security Council Approach to Nonproliferation Enforcement in the 21st Century Jonathan D. Herbach <i>Centre for Conflict and Security Law, Utrecht University, Utrecht, Netherlands</i>	
2:40 p.m. Abstract #558	Nuclear Latency, Nonproliferation and Disarmament Joseph F. Pilat <i>Los Alamos National Laboratory, Los Alamos, NM, USA</i>	
3:00 p.m. – 3:20 p.m.	Coffee Break in the Exhibit Hall	
3:20 p.m. Abstract #535	Prospects for the Renewal of the U.S./ROK Nuclear Cooperation Agreement Catherine Dill <i>Monterey Institute of International Studies, Monterey, CA, USA</i>	
3:40 p.m. Abstract #536	A Study on the Legal Framework for the Nuclear Nonproliferation and Nuclear Security Sang Cheol Hyung , Kihyun Kim <i>Korea Institute of Nuclear Nonproliferation and Control, Daejeon, South Korea</i>	
4:00 p.m. Abstract #292	The ‘R’ in CBRN and UNSCR1540: Should the Scope of UNSCR1540 Be Expanded to Include Radiological Terrorism? Jerry S. Davydov <i>Monterey Institute of International Studies, Monterey, CA, USA</i>	
4:20 p.m. Abstract #526	Effective Modules of Export Control Management for the Nuclear Power Plants Sundo Choi , Seounghyo Yang, Jaewoong Tae, Youngwook Lee, Jongsook Kim <i>Korea Institute of Nuclear Nonproliferation and Control, Daejeon, South Korea</i>	
4:40 p.m. Abstract #537 STUDENT PAPER	Discouraging Illegal Exports: Prosecution and Conviction Rates in the United States, Germany and Japan Marc Quint <i>Monterey Institute of International Studies, Monterey, CA, USA</i>	



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PROGRAM SCHEDULE

Monday, July 15, 2013

Location

Session G	Nonproliferation and Arms Control – Special Nuclear Material Identification I Chair: Joyce Connery, <i>National Security Staff, United States</i>	Springs Ballroom K-L
2:00 p.m. Abstract #379	Imaging of Special Nuclear Materials with Cosmic Rays Guy Jonkmans , Cript Collaboration <i>Atomic Energy of Canada Ltd, Chalk River, ON, Canada</i>	
2:20 p.m. Abstract #358 STUDENT PAPER	Initial Results of Nuclear Fluorescence Imaging for Arms Control Verification Jessica S. Feener , William S. Charlton <i>Texas A&M University, College Station, TX, USA</i>	
2:40 p.m. Abstract #242 STUDENT PAPER	Fast Neutron Transmission Imaging of Objects Near Walls Blake Palles , John T. Mihalcz <i>Oak Ridge National Laboratory, Oak Ridge, TN, USA</i>	
3:00 p.m. – 3:20 p.m.	Coffee Break in the Exhibit Hall	
3:20 p.m. Abstract #387 STUDENT PAPER	Design and Analysis of a Two-plane Dual-particle Imaging System Michael C. Hamel , John K. Polack, Alexis Poitrasson-Rivière, Joe E. Cho, Shaun D. Clarke, Marek Flaska, Sara A. Pozzi <i>University of Michigan, Ann Arbor, MI, USA</i>	
3:40 p.m. Abstract #473 STUDENT PAPER	Material Discrimination for Treaty Verification with Multi-energy, X-ray Radiography Andrew J. Gilbert ¹ , Benjamin S. McDonald ¹ , Sean M. Robinson ¹ , Timothy A. White ¹ , Ken D. Jarman ¹ , Mark R. Deinert ² <i>¹Pacific Northwest National Laboratory, Richland, WA, USA, ²University of Texas at Austin, Austin, TX, USA</i>	
4:00 p.m. Abstract #280	The Influence of Shielding Measurements of Nuclear Material Monika Risse , Wolfram Berky, Hermann Friedrich, Theo Köble, Wolfgang Rosenstock, Olaf Schumann <i>Fraunhofer INT, Euskirchen, Germany</i>	
4:20 p.m. Abstract #241 STUDENT PAPER	Neutron Calibration of a Pulsed DT Generator Blake Palles , John T. Mihalcz <i>Oak Ridge National Laboratory, Oak Ridge, TN, USA</i>	



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Session H	Education and Training — Developing Education and Training Partnerships	Desert Ballroom 10-11	
	Chair: Zoe Gastelum, <i>Pacific Northwest National Laboratory, United States</i>		
2:00 p.m. Abstract #118	International Cooperation in the Area of Nonproliferation Education in Russia and Ukraine — The Case of Swedish Radiation Safety Authority Polina Sinovets ¹ , Grigoriy Zinovyev ² , Nina Rozhanovskaya ³ , Ekaterina Mikhaylenko ⁴ ¹ <i>Odesa National I.I. Mechnikov University, Odesa, Ukraine</i> , ² <i>Novouralsk Technological Institute of National Research Nuclear University MEPhI, Novouralsk, Russian Federation</i> , ³ <i>National Research Tomsk State University, Tomsk, Russian Federation</i> , ⁴ <i>Ural Federal University Named after the First President of Russia B. Yeltsin, Ekaterinburg, Russian Federation</i>		
2:20 p.m. Abstract #143	Development of Nuclear Security Education in Morocco: Role of Partnerships Oum Keltoum Hakam , Abdelmajid Choukri <i>University of Ibn Tofail, Faculty of Sciences, Kenitra, Morocco</i>		
2:40 p.m. Abstract #203	An Overview of Nuclear Security and Its Introduction into the Nigerian Educational System Sunday Jonah <i>Ahmadu Bello Uineristy, Zaria, Nigeria</i>		
3:00 p.m. – 3:20 p.m.	Coffee Break in the Exhibit Hall		
3:20 p.m. Abstract #438	National Analytical Management Program of the U.S. Department of Energy — Education and Training Subcommittee Activities Patricia Paviet-Hartmann ¹ , Mansour Akbarzadeh ² , John Griggs ³ , Steven Bakhtiar ⁴ , B. Srinivasan ⁴ ¹ <i>Idaho National Laboratory, Idaho Falls, ID, USA</i> , ² <i>Nuclear Waste Partnership, LLC, Carlsbad, NM, USA</i> , ³ <i>National Air & Radiation Environmental Laboratory, Montgomery, AL, USA</i> , ⁴ <i>New Brunswick Laboratory, Argonne, IL, USA</i>		
3:40 p.m. Abstract #465	Sharing Expertise and Experience through Focused Packaging and Transportation Related Training Courses Yung Y. Liu ¹ , Ralph R. Fabian ¹ , Hanchung Tsai ¹ , Ronald Pope ¹ , James Shuler ² ¹ <i>Argonne National Laboratory, Argonne, IL, USA</i> , ² <i>U.S. Department of Energy, Washington DC, DC, USA</i>		
5:30 p.m. – 6:30 p.m.	POTAS Coordinator's Meeting	Raymond Diaz	Director's Suite IV
6:00 p.m. – 7:00 p.m.	New Member/New Senior Member Reception (By Invitation Only)	Michelle Romano	Santa Rosa Ballroom



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PROGRAM SCHEDULE

Tuesday, July 16, 2013

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6:00 a.m. – 7:30 a.m.	17th Annual 3K Charity Run/Walk <i>The proceeds from the 2013 Fun Run/Walk will go to the late Ed Johnson's designated charity, the Edway R. and Geraldine L. Johnson Scholarship for the Sciences at Bowling Green State University in Bowling Green, Ohio USA.</i>	
6:30 a.m. – 3:30 p.m.	Speaker Ready Room	Director's Suite V
7:00 a.m. – 7:45 a.m.	Speakers' Breakfast	Teresa McKinney (with Paul Ebel) Springs Ballroom G
7:30 a.m. – Noon	Registration	Grand Center and North Registration Counters
7:45 a.m. – 10:00 a.m.	Companions' Continental Breakfast	Santa Rosa Ballroom
8:00 a.m. – 8:00 p.m.	Ad Hoc Committee Meeting Rooms	Director's Suite II and Director's Suite III
8:30 a.m. – 3:00 p.m.	Poster Session	North Foyer
8:30 a.m. – 11:50 a.m.	Concurrent Technical Sessions III	
Session A	Facility Operations — Nuclear Materials Management I Co-Chairs: Sheri Bone, <i>U.S. Department of Energy, United States</i> , and Dale Dunsworth, <i>U.S. Department of Energy/National Nuclear Security Administration, United States</i>	Springs Ballroom D-E
8:30 a.m. Abstract #267	Deinventory of AREA 5 Supporting the Accelerated Transition to the Uranium Processing Facility (UPF) at the Y-12 National Security Complex Ron Milligan , Jeniece May <i>Y-12 National Security Complex, Oak Ridge, TN, USA</i>	
8:50 a.m. Abstract #510	SRS Testing, Training and Exercise Capabilities Richard E. Koenig <i>Savannah River Nuclear Solutions, Aiken, SC, USA</i>	
9:10 a.m. Abstract #135	Establishment of the Heavy Isotopes Lead Materials Management Organization (LMMO) Brad D. Patton , Sharon Robinson <i>Oak Ridge National Laboratory, Knoxville, TN, USA</i>	
9:30 a.m. Abstract #393	Complexity in Developing an Integrated Plan for Department of Energy Management of Nuclear Materials Scott H. Davies ¹ , Dale R. Dunsworth ² ¹ <i>Value Added Solutions, North Augusta, SC, USA</i> , ² <i>U.S. Department of Energy, Washington, DC, USA</i>	
9:50 a.m. Abstract #277	U.S. Department of Energy's Tritium and Enriched Uranium Management Plan through 2060 Morris E. Hassler ¹ , Xavier Ascanio ² , Richard W. Meehan ³ , Becky G. Eddy ⁴ ¹ <i>Y-12 National Security Complex, Oak Ridge, TN, USA</i> , ² <i>U.S. Department of Energy/National Nuclear Security Administration, Office of Nuclear Material Integration, Washington, DC, USA</i> , ³ <i>U.S. Department of Energy/National Nuclear Security Administration, Office of Nuclear Material Integration, Oak Ridge, TN, USA</i> , ⁴ <i>U.S. Department of Energy/National Nuclear Security Administration, Production Office, Oak Ridge, TN, USA</i>	
10:10 a.m. – 10:30 a.m.	Coffee Break in the Exhibit Hall	



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10:30 a.m. Abstract #529	Overview of the Deinventory Effort at Lawrence Livermore National Laboratory David Riley <i>Lawrence Livermore National Laboratory, Livermore, CA, USA</i>	
10:50 a.m. Abstract #422	Savannah River Site's H-Canyon Facility: Recovery and Down Blend Uranium for Beneficial Use Virginia E. Magoulas <i>Savannah River National Laboratory, Aiken, SC, USA</i>	
11:10 a.m. Abstract #297	Risk Reduction Through Accelerated Disposition of Nuclear Materials at LANL Guy D. Baker, Laura Worl, Jim Rubin , Keith Fife, Peter Carson, David Prochnow, Kapil Goyal, Jeff Johnson <i>Los Alamos National Laboratory, Los Alamos, NM, USA</i>	
11:30 a.m. Abstract #403	Tracking Surplus Plutonium from Weapons to Disposition Jeffrey S. Allender ¹ , Jay D. Beams ² , Kenneth E. Sanders ³ , Leonard W. Myers ⁴ <i>¹Savannah River National Laboratory, Aiken, SC, USA, ²U.S. Department of Energy/National Nuclear Security Administration, Germantown, MD, USA, ³U.S. Department of Energy/National Nuclear Security Administration, Washington, DC, USA, ⁴Protection Strategies, Inc., Germantown, MD, USA</i>	
Session B	International Safeguards — Unattended System Developments and Experiences Co-Chairs: Chris Pickett, <i>Oak Ridge National Laboratory, United States</i> , and Raymond Diaz, <i>Brookhaven National Laboratory, United States</i>	Desert Ballroom 1-3
8:30 a.m. Abstract #115	Passive Optical Tag for Complex Geometric Applications with Non-Contact Reader Heidi A. Smartt ¹ , Michael B. Sinclair ¹ , William C. Sweatt ¹ , Juan A. Romero ¹ , Keith M. Tolk ² <i>¹Sandia National Laboratories, Albuquerque, NM, USA, ²Milagro Consulting, LLC, Albuquerque, NM, USA</i>	
8:50 a.m. Abstract #116	Status of the Gen II Ceramic Seal Prototype Heidi A. Smartt , Juan A. Romero, Maikael A. Thomas, Ross W. Hymel, Steve X. Dai, Billy Cunningham <i>Sandia National Laboratories, Albuquerque, NM, USA</i>	
9:10 a.m. Abstract #177	The Use of the RFID Seals in the National Safeguards Inspection in Korea Seung Sik Park , Jae Beum Park <i>Korea Institute of Nuclear Nonproliferation and Control, Daejeon, South Korea</i>	
9:30 a.m. Abstract #210	Development of a Ceramic Tamper-indicating Seal — SRNL Contributions Daniel Kremetz , Kyle S. Brinkman, Michael J. Martinez-Rodriguez, Adrian E. Mendez-Torres, George E. Weeks <i>Savannah River National Laboratory, Aiken, SC, USA</i>	
9:50 a.m. Abstract #294	Authenticated Sensor Interface Device for Joint Use Safeguards Applications — Concepts and Challenges Richard Poland , Rusty Coleman, Robert Drayer <i>Savannah River National Laboratory, Aiken, SC, USA</i>	
10:10 a.m. – 10:30 a.m.	Coffee Break in the Exhibit Hall	
10:30 a.m. Abstract #508	International Safeguards Experience at SRS Richard E. Koenig , Christine Hadden <i>Savannah River Nuclear Solutions, Aiken, SC, USA</i>	



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Session C	International Safeguards — Member State Support Program Contributions to International Safeguards I Co-Chairs: Jill Cooley, <i>International Atomic Energy Agency, Austria</i> , and Susan Pepper, <i>Brookhaven National Laboratory, United States</i>	Desert Ballroom 7
8:30 a.m. Abstract #504	IAEA Department of Safeguards Strategic Planning and the Role of Member State Support Programs Jill N. Cooley , Neil Tuley, Andrew Catton <i>International Atomic Energy Agency, Vienna, Austria</i>	
8:50 a.m. Abstract #497	The Australian Safeguards Support Program — A Long History of Support for IAEA Safeguards Ryan Hemsley , Craig Everton, Robert Floyd <i>Australian Safeguards and Non-Proliferation Office, Barton, Australia</i>	
9:10 a.m. Abstract #181	The Belgian Support Program — Small is Beautiful Klaas van der Meer <i>StudieCentrum voor Kernenergie, Mol, Belgium</i>	
9:30 a.m. Abstract #375	The Canadian Safeguards Support Program — 35 Years of Support to the International Safeguards Regime Rick Kosierb , Peter Button, Raoul Awad <i>Canadian Nuclear Safety Commission, Ottawa, ON, Canada</i>	
9:50 a.m. Abstract #160	The European Commission Cooperative Support Program — Activities and Cooperation João G. M. Gonçalves ¹ , Said Abousahl ² , Yetunde Aregbe ³ , Willem Janssens ¹ , Klaus Lützenkirchen ⁴ , Maurizio Boella ⁵ , Peter Schwalbach ⁵ ¹ <i>European Commission - Joint Research Centre, Ispra, Italy</i> , ² <i>European Commission - Joint Research Centre, Brussels, Belgium</i> , ³ <i>European Commission - Joint Research Centre, Geel, Belgium</i> , ⁴ <i>European Commission - Joint Research Centre, Karlsruhe, Germany</i> , ⁵ <i>European Commission - DG Energy, Luxembourg, Luxembourg</i>	
10:10 a.m. - 10:30 a.m.	Coffee Break in the Exhibit Hall	
10:30 a.m. Abstract #185	The Finnish Support Program to the IAEA Safeguards 1988 - 2013 — Importance and Future Perspectives Tapani Honkamaa , Elina H. Martikka, Matti Tarvainen, Juha Rautjärvi <i>STUK, Radiation and Nuclear Safety Authority, Helsinki, Finland</i>	
10:50 a.m. Abstract #266	The French Support Program to IAEA Safeguards - A 30-year Collaboration François Bonino ¹ , Stephane Baude ² ¹ <i>Alternative Energies and Atomic Energy Commission, Gif sur Yvette, France</i> , ² <i>Permanent Mission of France to the United Nations Office and International Organizations in Vienna, Vienna, Austria</i>	
11:10 a.m. Abstract #373	The German Support Program to the IAEA — 35 Years of Technical Developments and Further Improvement of IAEA Safeguards Irmgard Niemeyer ¹ , Martin Dürr ¹ , Bernd Richter ¹ , Wolfgang Trautwein ² , Hans Hermann Remagen ² ¹ <i>Forschungszentrum Jülich GmbH, Juelich, Germany</i> , ² <i>Federal Ministry of Economics and Technology, Bonn, Germany</i>	



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Session D	International Safeguards/Materials Control and Accountability – Developments in NDA in Plutonium and Uranium Detection in the Nuclear Fuel Cycle Chair: Thomas Grice, <i>U.S. Nuclear Regulatory Commission, United States</i>	Springs Ballroom A-C
8:30 a.m. Abstract #119 STUDENT PAPER	Multispectral Active Neutron Interrogation Analysis Jason M. Lewis <i>University of Florida, Gainesville, FL, USA</i>	
8:50 a.m. Abstract #122	Toward an Improved Burnup Measurement Equipment for Spent Fuel Assemblies in Belgian Nuclear Power Plants Alessandro Borella ¹ , Klaas van der Meer ¹ , Femke Flachet ² , Katja Cauwenbergh ³ , Rene Delporte ³ ¹ <i>SCK-CEN, Mol, Belgium</i> , ² <i>Electrabel - Kerncentrale Doel, Doel, Belgium</i> , ³ <i>Electrabel, Brussels, Belgium</i>	
9:10 a.m. Abstract #176	Design of an Alternative Plutonium Canister Assay System (APCA) Using Ceramic Scintillator Neutron Detectors for the Safeguards NDA Masatoshi Kureta , Akira Ohzu, Mitsuo Haruyama, Misao Takase, Noritaka Kurata, Nozomi Kobayashi, Kazuhiko Soyama, Tatsuya Nakamura, Hirinobu Nakamura, Michio Seya <i>Japan Atomic Energy Agency, Ibaraki, Japan</i>	
9:30 a.m. Abstract #187 STUDENT PAPER	Characterization of the Cosmic Ray Induced Neutron Multiplicity Background of a ³He Passive Drum Counter for Plutonium Waste Verification Marc G. Paff ¹ , Bent Pedersen ² , Jean Michel Crochemore ² , Valeriy Mayorov ² , Canadel Valenti ³ , Eric Roesgen ² , Marita Mosconi ² , Elisa Pirovano ² ¹ <i>University of Michigan, Ann Arbor, MI, USA</i> , ² <i>Nuclear Security Unit, Institute for Transuranium Elements, Joint Research Centre-European Commission, Ispra, Italy</i> , ³ <i>European Commission, Directorate General Energy, Nuclear Safeguards, Luxembourg, Luxembourg</i>	
9:50 a.m. Abstract #221	Proposal of Direct Alpha Estimation Technique by Using Ring Ratio in the Continuous Neutron Monitor (CNM) Hironobu Nakamura ¹ , Adrienne M. LaFleur ² , Yasunobu Mukai ¹ , Hiroyuki Hayashi ¹ , Howard O. Menlove ² , Johnna B. Marlow ² , Tsutomu Kurita ¹ ¹ <i>Japan Atomic Energy Agency, Tokai-mura, Ibaraki-pref., Japan</i> , ² <i>Los Alamos National Laboratory, Los Alamos, NM, USA</i>	
10:10 a.m. – 10:30 a.m.	Coffee Break in the Exhibit Hall	
10:30 a.m. Abstract #227	Development of a ZnS/¹⁰B₂O₃ Ceramic Scintillator Neutron Detector for Safeguards NDA Systems Tatsuya Nakamura, Kentaro Toh, Kaoru Sakasai , Hiroyuki Suzuki, Kazuhiko Soyama, Masatoshi Kureta, Akira Ohzu, Misao Takase, Hironobu Nakamura, Michio Seya <i>Japan Atomic Energy Agency, Tokai, Naka, Ibaraki, Japan</i>	
10:50 a.m. Abstract #390 STUDENT PAPER	Development of Integrated Online Monitoring Systems for Detection of Diversion at Natural Uranium Conversion Facilities Shaheen A. Dewji ¹ , Denise Lee ¹ , Stephen Croft ¹ , Bob McElroy ¹ , Nolan Hertel ² , Jeff Chapman ¹ , Steve Cleveland ¹ ¹ <i>Oak Ridge National Laboratory, Oak Ridge, TN, USA</i> , ² <i>Georgia Institute of Technology, Atlanta, GA, USA</i>	
11:10 a.m. Abstract #229	Derivation of Two Group Two Region Feynman-alpha Formulas and Their Application to Safeguards and Accelerator-driven System Dina Chernikova ¹ , Imre Pázsit ¹ , Lenard Pál ² , Wang Ziguan ¹ ¹ <i>Chalmers University of Technology, Göteborg, Sweden</i> , ² <i>KFKI Atomic Energy Research Institute, Budapest, Hungary</i>	



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11:30 a.m. Abstract #193	Integration of Domestic MC&A Requirements and International Safeguards Objectives Scott DeMuth <i>Los Alamos National Laboratory, Los Alamos, NM, USA</i>	
Session E	Materials Control and Accountability – Accounting Systems Chair: Steve Wyrick, <i>Savannah River National Laboratory, United States</i>	Desert Ballroom 4-6
8:30 a.m. Abstract #323	National Nuclear Security Administration Tritium Supply Chain Steven Wyrick ¹ , Joseph Cordaro ¹ , Nanette Founds ² , Curtis Chambellan ² ¹ <i>Savannah River National Laboratory, Aiken, SC, USA</i> , ² <i>National Nuclear Security Administration, Albuquerque, NM, USA</i>	
8:50 a.m. Abstract #130	Development of a Fundamental Scaling Rule for Nuclear Counting Experiments Tyler F. Guzzardo , Stephen Croft <i>Oak Ridge National Laboratory, Oak Ridge, TN, USA</i>	
9:10 a.m. Abstract #232	Comprehensive Nuclear Material Surveillance with Radiation Detectors Equipped ARG-US RFID System John H. Lee ¹ , Patrick DeLurgio ¹ , Brian Craig ¹ , Han-Chung Tsai ¹ , Yung Liu ¹ , James Shuler ² ¹ <i>Argonne National Laboratory, Lemont, IL, USA</i> , ² <i>Department of Energy, Washington, DC, USA</i>	
9:30 a.m. Abstract #184	Nuclear Material Control and Accounting Automation at the JSC Afrikantov OKBM Facility S. Yu. Valenkov ¹ , V. A. Sharygin ¹ , Philip W. Gibbs ² ¹ <i>Joint Stock Company Afrikantov OKBM, Nizhny Novgorod, Russian Federation</i> , ² <i>Brookhaven National Laboratory, Upton, NY, USA</i>	
9:50 a.m. Abstract #551	Justification for Acquiring an Automated State Accounting System Samuel L. Brown <i>NAC International Inc, Norcross, GA, USA</i>	
10:10 a.m. – 10:30 a.m.	Coffee Break in the Exhibit Hall	
10:30 a.m. Abstract #561	Development of a Generic Database Management System for Facility Level Nuclear Material Accountancy and Control Michael Bridson <i>Australian Nuclear Science and Technology Organization, Sydney, Australia</i>	
Session F	Materials Control and Accountability – Nondestructive Analysis Neutron Measurements II Chair: Harold Wheat, <i>Y-12 National Security Complex, United States</i>	Springs Ballroom F
8:30 a.m. Abstract #245	Energy-angle Correlation of Neutrons Emitted from ²³⁵U Induced Fission Andreas Enqvist ¹ , Brian M. Wieger ¹ , Shaun D. Clarke ¹ , Sara A. Pozzi ¹ , Robert C. Haight ² , Hye Young Lee ² , Brent A. Perdue ² , Elaine Kwan ³ , Ching-Yen Wu ³ ¹ <i>University of Michigan, Ann Arbor, MI, USA</i> , ² <i>Los Alamos National Laboratory, Los Alamos, NM, USA</i> , ³ <i>Lawrence Livermore National Laboratory, Livermore, CA, USA</i>	
8:50 a.m. Abstract #249	Neutron Multiplicity Counter Development with ⁶LiF/ZnS Azaree Lintereur ¹ , James Ely ² , Mitchell Woodring ² , Jean Stave ² , Sean Robinson ³ ¹ <i>Pacific Northwest National Laboratory/University of Florida, Richland, WA, USA</i> , ² <i>Pacific Northwest National Laboratory, Richland, WA, USA</i> , ³ <i>Pacific Northwest National Laboratory, Seattle, WA, USA</i>	
9:10 a.m. Abstract #286	Restrictions on the Bohnel Method in Neutron Multiplicity Counting Chen Dubi ¹ , Itamar Israelshvili ¹ , Tal Ridnik ² ¹ <i>Nuclear Research Center of the Negev, Beer Sheva, Israel</i> , ² <i>Israel Atomic Energy Commission, Beer Sheva, Israel</i>	



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9:30 a.m. Abstract #291	Integration of FREYA into MCNP6 – An Improved Fission Chain Modeling Capability Jerome M. Verbeke ¹ , Christian A. Hagmann ¹ , Jørgen Randrup ² , Ramona Vogt ¹ ¹ Lawrence Livermore National Laboratory, Livermore, CA, USA, ² Lawrence Berkeley National Laboratory, Berkeley, CA, USA
9:50 a.m. Abstract #303	Fissile Mass Estimation by Pulsed Neutron Source Itamar Israelashvili ¹ , Chen Dubi ¹ , Hanania Etedgy ¹ , Aaron Ocherashvili ¹ , Bent Pedersen ² , Tal Ridnik ¹ , Ilan Yaar ¹ ¹ Nuclear Research Center of the Negev, Beer Sheva, Israel, ² Nuclear Security Unit, Institute for Transuranium Elements, Joint Research Centre, Ispra, Italy
10:10 a.m. – 10:30 a.m.	Coffee Break in the Exhibit Hall
10:30 a.m. Abstract #314	Analytical Expressions for Dead Time Effects for Various Practical Cases Lenard Pal ¹ , Imre Pazsit ² ¹ Hungarian Academy of Sciences, Centre for Energy Research, Goteborg, Hungary, ² Chalmers University of Technology, Goteborg, Sweden
10:50 a.m. Abstract #321	Distinguishing Pu Metal from Pu Oxide Using Fast Neutron Counting Jerome M. Verbeke , George F. Chapline, Leslie F. Nakae, Ronald E. Wurtz, Steven A. Sheets Lawrence Livermore National Laboratory, Livermore, CA, USA
11:10 a.m. Abstract #394	New Models for Prompt Neutron Emissions from Nuclear Fission Sara A. Pozzi ¹ , Andreas Enqvist ¹ , Brian Wieger ¹ , Shaun D. Clarke ¹ , Marek Flaska ¹ , Matthew Marcath ¹ , Ed Larsen ¹ , Robert C. Haight ² , Natalia Puppato ³ , Enrico Padovani ³ ¹ University of Michigan, Ann Arbor, MI, USA, ² Los Alamos National Laboratory, Los Alamos, NM, USA, ³ Polytechnic of Milan, Milan, Italy
11:30 a.m. Abstract #398	Scintillation Detector for Fast Neutron Spectroscopy for Nuclear Material Characterization Andrey Gueorguiev , Jaroslav Glodo, Lakshmi Soundara-Pandian, Kanai Shah Radiation Monitoring Devices Inc, Watertown, MA, USA
Session G	Nonproliferation and Arms Control – Special Nuclear Material Identification II Springs Ballroom K-L Chair: Alan Icenhour, Oak Ridge National Laboratory, United States
8:30 a.m. Abstract #471	Spectrometer Development for High-resolution Fission Fragment Yield Data Adam Hecht , Drew Mader, Erin Dughie, Rick Blakeley University of New Mexico, Albuquerque, NM, USA
8:50 a.m. Abstract #466 STUDENT PAPER	Gamma-ray and Neutron Misclassification Rates versus Pulse-height in Organic Scintillation Detectors EJ309, EJ315, and EJ299 Christopher Lawrence , Andreas Enqvist, Marek Flaska, Sara A. Pozzi, F.D. Becchetti University of Michigan, Ann Arbor, MI, USA
9:10 a.m. Abstract #307	Materials Identification by Resonance Attenuation Nathalie Le Galloudec, James Brennan, Peter Marleau, Wondwoosen Mengesha, Stanley Mrowka, Aaron Nowack, Daniel Throckmorton, James Van De Vreugde, Melinda Sweaney Sandia National Laboratories, Livermore, CA, USA
9:30 a.m. Abstract #195 STUDENT PAPER	A Computer-aided, Visual, Charge-integration, Pulse-shape-discrimination Method for Organic Scintillators John K. Polack , Marek Flaska, Sara Pozzi University of Michigan, Ann Arbor, MI, USA



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9:50 a.m. Abstract #117	Monte Carlo Simulation of Neutron/Gamma-Ray Time-dependent Cross-correlation Functions in Source-driven Noise Analysis Measurements for Uranium Mass Evaluation Po Huang , Cenmin Ye, Xuan Lian, Jianshen Li, Xiaoqiang Fan, Qilin Xie <i>Institute of Nuclear Physics and Chemistry, China Academy of Engineering Physics, Mianyang of Sichuan Province, China</i>	
10:10 a.m. – 10:30 a.m.	Coffee Break in the Exhibit Hall	
10:30 a.m. Abstract #147 STUDENT PAPER	Variance Analysis for Plutonium Mass Determination by Neutron Multiplicity Counter Chen Ligao ¹ , Liu Xiaobo ¹ , Gong Jian ¹ , Wang Kan ² , Ying Yanpeng ¹ <i>¹Institute of Nuclear Physics and Chemistry, China Academy of Engineering Physics, Mianyang, Sichuan, China, ²Tsinghua University, Beijing, China</i>	
10:50 a.m. Abstract #335 STUDENT PAPER	Spectrally Matched Neutron Detectors Designed Using Computational Adjoint Sn for Plug-In Replacement of He-3 Scottie Walker ¹ , Glenn Sjoden ² <i>¹Sandia National Laboratories, Albuquerque, NM, USA, ²Georgia Institute of Technology, Atlanta, GA, USA</i>	
Session H	Nonproliferation and Arms Control – Efforts to Increase Safeguards and Nuclear Security Cooperation in the Asia-Pacific Co-Chairs: Risa Mongiello, <i>Sandia National Laboratories, United States</i> , and Orpet Peixoto, <i>Brazilian Argentine Agency for Accounting and Control of Nuclear Materials, Brazil</i>	Springs Ballroom H-J
8:30 a.m. Abstract #525	Enhancing Nuclear Safeguards and Security Cooperation in the Asia Pacific: Goals and Objectives George T. Baldwin, Risa Mongiello <i>Sandia National Laboratories, Albuquerque, NM, USA</i>	
8:50 a.m. Abstract #482	Challenges Faced in Bilateral or Multilateral Information Sharing for Enhancing Nuclear Transparency Eun-ha Kwon , Ho-dong Kim, Won-il Ko, Kwang-seok Lee <i>Korea Atomic Energy Research Institute, Daejeon, South Korea</i>	
9:10 a.m. Abstract #349	Survey on Experiences and Needs for Sharing Nonproliferation Relevant Information among Experts within JAEA Yoko Kawakubo ¹ , Naoko Inoue ¹ , Barbara Hoffheins ¹ , Risa Mongiello ² , George Baldwin ² , Na-Young Lee ³ , Jinho Chung ³ , Eun-ha Kwon ⁴ <i>¹Japan Atomic Energy Agency, Tokai-mura, Japan, ²Sandia National Laboratories, Albuquerque, NM, USA, ³Korea Institute of Nuclear Nonproliferation and Control, Daejeon, South Korea, ⁴Korea Atomic Energy Research Institute, Daejeon, South Korea</i>	
9:30 a.m. Abstract #341	Findings from the KINAC Transparency Survey and Its Implication for the Information Sharing Framework (ISF) Jinho Chung ¹ , Na-Young Lee ³ , Risa Mongiello ² , George Baldwin ² , Yoko Kawakubo ³ , Naoko Inoue ³ , Eun-ha Kwon ⁴ <i>¹Korea Institute of Nuclear Nonproliferation and Control, Daejeon, South Korea, ²Sandia National Laboratories, Albuquerque, NM, USA, ³Japan Atomic Energy Agency, Tokai, Japan, ⁴Korea Atomic Energy Research Institute, Daejeon, South Korea</i>	
9:50 a.m. Abstract #339	Development of Information Sharing Requirements for Regional Nuclear Transparency Naoko Inoue ¹ , Yoko Kawakubo ¹ , Barbara Hoffheins ¹ , Risa Mongiello ² , George Baldwin ² , Na-Young Lee ³ , Jinho Chung ³ , Eun-ha Kwon ⁴ <i>¹Japan Atomic Energy Agency, Tokai-mura, Ibaraki, Japan, ²Sandia National Laboratories, Albuquerque, NM, USA, ³Korea Institute of Nuclear Nonproliferation and Control, Daejeon, South Korea, ⁴Korean Atomic Energy Research Institute, Daejeon, South Korea</i>	



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10:10 a.m. – 10:30 a.m.	Coffee Break in the Exhibit Hall	
10:30 a.m. Abstract #338	From the Information Sharing Framework (ISF) Action Sheets to the Asia Pacific Safeguards Network – A Path Forward Na Young Lee ¹ , Jin Ho Chung ¹ , Hosik Yoo ¹ , R. Mongiello ² , G. Baldwin ² , Y. Kawakubo ³ , N. Inoue ³ , E. Kwon ⁴ ¹ <i>Korea Institute of Nuclear Nonproliferation and Control, Daejeon, South Korea,</i> ² <i>Sandia National Laboratories, Albuquerque, NM, USA,</i> ³ <i>Japan Atomic Energy Agency, Tokyo, Japan,</i> ⁴ <i>Korea Atomic Energy Research Institute, Daejeon, South Korea</i>	
10:50 a.m. Abstract #198	Nuclear Security – Role of NGOs in the Asia Pacific and Possible Mechanisms for Cooperation and Information Sharing John Carlson <i>Consultant, Queanbeyan NSW, Australia</i>	
11:10 a.m. Abstract #515	Increasing Nuclear Security Cooperation Through Networking Geoffrey Emi-Reynolds <i>Ghana Atomic Energy Commission, Accra, Ghana</i>	
11:30 a.m. Abstract #554	Information Sharing Mechanisms: Lessons Learned from Regional Nuclear Nonproliferation Cooperation in Latin America Orpet J. Peixoto , Sonia F. Moreno <i>Brazilian Argentine Agency for Accounting and Control of Nuclear Materials, Rio de Janeiro, Brazil</i>	
Session I	Nuclear Security and Physical Protection – Facility Design and Integration Co-Chairs: Steve Ortiz, <i>Sandia National Laboratories, United States,</i> and Howard Hall, <i>University of Tennessee, United States</i>	Desert Ballroom 13
8:30 a.m. Abstract #503	Reducing Risk: Creating a Nuclear Island at the Kurchatov Institute Sergey Mnozhin , Igor Briagin, Andrei Korolev, Sergey Chulkov <i>National Research Center Kurchatov Institute, Moscow, Russian Federation</i>	
8:50 a.m. Abstract #530 STUDENT PAPER	Physical Protection Systems and Technical Means for Northwest Russian Nuclear Sites: Design and Construction Rashid Tukhvatulin , Vladimir Kutko <i>Edvista, Saint Petersburg, Russian Federation</i>	
9:10 a.m. Abstract #456	Application of Design-centered Insider Protection Techniques Mark Snell, Felicia Durán <i>Sandia National Laboratories, Albuquerque, NM, USA</i>	
9:30 a.m. Abstract #356	Material Attractiveness and Categorization Activities at the Nuclear Regulatory Commission Joseph Rivers , Oleg Bukharin <i>United States Nuclear Regulatory Commission, Rockville, MD, USA</i>	
9:50 a.m. Abstract #357	Technical Analysis Supporting the Nuclear Regulatory Commission's Development of a New Approach to Material Attractiveness Joseph Rivers ¹ , Marc Klasky ² , Dean Sanzo ² ¹ <i>United States Nuclear Regulatory Commission, Rockville, MD, USA,</i> ² <i>Los Alamos National Laboratory, Los Alamos, NM, USA</i>	
10:10 a.m. – 10:30 a.m.	Coffee Break in the Exhibit Hall	



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10:30 a.m. Abstract #359	Activities in the Area of Chemical Security at Facilities Regulated by the Nuclear Regulatory Commission Rebecca Richardson, Joseph Rivers , Larry Harris <i>United States Nuclear Regulatory Commission, Rockville, MD, USA</i>
10:50 a.m. Abstract #205	Defensive Planning For Fixed Facilities Richard L. Donovan <i>U.S. Department of Energy, GTN Building, Washington, DC, USA</i>
11:10 a.m. Abstract #559	Developing an Emergency Response Capabilities for a New Nuclear Build Stephen O. Dahunsi ¹ , Cyril Schandorf ² <i>¹Nigeria Atomic Energy Commission, FCT, Nigeria, ²University of Ghana, Accra, Ghana</i>
8:30 a.m. – 3:00 p.m.	Session J – Poster Session North Foyer Chair: Taner Uckan, <i>Oak Ridge National Laboratory, United States</i>
Poster #1 Abstract #112	The Detection and Analysis of Special Nuclear Material in Pellets, Powders and Ore Form Using Laser-Induced Breakdown Spectroscopy Elizabeth J. Judge , James E. Barefield II, John M. Berg, Stephen P. Willson, Samuel M. Clegg, Loan A. Le, Leon N. Lopez, George J. Havrilla, Velma M. Montoya, Leonardo Trujillo <i>Los Alamos National Laboratory, Los Alamos, NM, USA</i>
Poster #2 Abstract #150	Non-Destructive Evaluation (NDE) within Nuclear Weapon Dismantlement Verification Helen M. White , Paul Tatum, Gill Bagley, Steve Phoenix, Alex Lyne, Martin Hillier, Tim Whiteside <i>Atomic Weapons Establishment, Berkshire, United Kingdom</i>
Poster #3 Abstract #157	Inventory Management System Using a Web-based technology In-Chul Kim , Byung-Doo Lee <i>Korea Atomic Energy Research Institute, Daejeon, South Korea</i>
Poster #4 Abstract #230	The Use of Unmanned Aircraft to Monitor for Nuclear and Radiation Hazardous Facilities Sergey Shilkin , Vladimir Agamalyan, Rashit Bikkinin, Gerhard Neufeld, Artur Hakimov, Aleksandra Demenshina <i>UVS Soft, Moscow, Russian Federation</i>
Poster #5 Abstract #235	Argentinean Safeguards Accountancy System – Requirements and Conceptual Design Sebastián Vigile , María Olano, Gustavo Díaz, Leonardo Pardo, Patricia Arrigoni, Stella Bonet Duran, Carlos Llacer <i>Autoridad Regulatoria Nuclear, Buenos Aires, Argentina</i>
Poster #6 Abstract #253	Waste Management Nuclear Calorimeter for Very Large Sample Christophe Mathonat ¹ , Guillaume Jossens ¹ , Franck Bachelet ² <i>¹SETARAM Instrumentation, Caluire, France, ²CEA Valduc, Is Sur Tilles, France</i>
Poster #7 Abstract #256	Development of Neutron Detection Module of Unified Non-Destructive Assay System for Pyroprocessing Facility Safeguards Hee Seo, Se-Hwan Park, Hee-Sung Shin, Sang-Ho Na, Dae-Yong Song, Seung Kyu Lee, Ho-Dong Kim, Seung Kyu Ahn <i>Korea Atomic Energy Research Institute, Daejeon, South Korea</i>
Poster #8 Abstract #257	The Geology – A New Tool for the Country Report Alexandra Colin , Danièle Buigues, Jean-Laurent Bernard <i>French Atomic Energy Commission, Arpajon Cedex, France</i>
Poster #9 Abstract #305	Nuclear Criticality Safety Implementation at Los Alamos National Laboratory Plutonium Facility Claudette Chavez , Margaret Trujillo <i>Los Alamos National Laboratory, Los Alamos, NM, USA</i>



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Poster #10 Abstract #317 STUDENT PAPER	Digital Pulse Shape Discrimination with the XIA Pixie-500 and EJ309 Zachary Bailey <i>North Carolina State University, Raleigh, NC, USA</i>		
Poster #11 Abstract #347	Development of a Code for the Isotopic Analysis of Uranium and Plutonium JunHyuck Kim , Minyoung Kang, HeeDong Choi <i>Seoul National University, Seoul, South Korea</i>		
Poster #12 Abstract #371 STUDENT PAPER	Nuclear-propelled Submarines and Plutonium: A New Proliferation Risk? Serena Kelleher-Vergantini <i>The George Washington University, Washington, DC, USA</i>		
Poster #13 Abstract #411	Hotcell Dissolution Protocol and Apparatus for High Precision Characterization of Spent Nuclear Fuels Jeff Delashmitt , Doug Canaan, Joe Giaquinto, Catherine Romano, Rob Smith <i>Oak Ridge National Laboratory, Oak Ridge, TN, USA</i>		
Poster #14 Abstract #487	Using a Lanthanum Bromide Detector to Monitor Pu Content in MOX Fuel Rods Nicholas Mascarenhas, Marie Cronholm, Anthony Lavietes, Romano Plenteda <i>International Atomic Energy Agency, Vienna, Austria</i>		
Poster #15 Abstract #507	Neutron Source Characterization Using a Scintillation Detector with Digital Pulse Shape Discrimination Alexander Barzilov <i>University of Nevada Las Vegas, Las Vegas, NV, USA</i>		
Poster #16 Abstract #513	Combined Gamma-Ray/Neutron Imaging System for Detecting Nuclear Material Lakshmi Soundara Pandian , Jarek Glodo, James F. Christian, Andrey Gueorguiev, Chad Whitney, Erik B. Johnson, Robert Vinci, Kanai S. Shah, Michael R. Squillante <i>Radiation Monitoring Devices, Inc., Watertown, MA, USA</i>		
Poster #17 Abstract #571	Present Status of Nuclear Security Policy in the Republic of Moldova Artur Buzdugan, Ionel Balan, Angela Sidorencu , Elena Mursa <i>National Agency for Regulation of Nuclear and Radiological Activities, Chisinau, Republic of Moldova</i>		
Poster #18 Abstract #589 STUDENT PAPER	Automatic Alert of Security Threat Through Video Surveillance System Vipin Shukla , Gaurav Kumar Singh <i>Pandit Deendayal Petroleum University, Gandhinagar, India</i>		
10:00 a.m. – 1:00 p.m.	Exhibits Open		Desert Ballroom 8
Noon – 3:20 p.m.	Lunch Break (<i>On Your Own</i>) Have a leisurely lunch, view the poster presentations and visit the Exhibitors.		
Noon – 1:30 p.m.	Membership Committee Luncheon (<i>By Invitation Only</i>)	Michelle Romano	Desert Suite III
Noon – 1:30 p.m.	Chapter Relations Committee Luncheon with Student Chapter Faculty Advisors (<i>By Invitation Only</i>)	Willem Janssens	Desert Suite II
Noon – 2:00 p.m.	JNMM Associate Editors' Luncheon (<i>By Invitation Only</i>)	Dennis Mangan	Desert Ballroom 13
1:30 p.m. – 3:00 p.m.	Strategic Planning Committee Meeting	Jack Jekowski	Director's Suite IV
2:00 p.m. – 5:00 p.m.	Exhibits Open		Desert Ballroom 8



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		Location
2:00 p.m. – 5:00 p.m.	Registration	Grand Center and North Registration Counters
3:00 p.m. – 5:00 p.m.	Poster Dismantle	North Foyer
3:20 p.m. – 5:00 p.m.	Concurrent Technical Sessions IV	
Session A	Facility Operations/International Safeguards – The “By Design” Concept for New Facilities	Springs Ballroom D-E
	Co-Chairs: Elina Martikka, <i>STUK - Radiation and Nuclear Safety Authority, Finland</i> , and Michael Miller, <i>Los Alamos National Laboratory, United States</i>	
3:20 p.m. Abstract #113	Safeguards and Security by Design – Considerations for Small Modular Reactors Michael Miller ¹ , Gennady Pshakin ² ¹ <i>Los Alamos National Laboratory, Los Alamos, NM, USA</i> , ² <i>Institute of Physics and Power Engineering, Obninsk, Russian Federation</i>	
3:40 p.m. Abstract #344	Security-by-Design for Pyroprocessing Facility Eun-ha Kwon , Ho-hee Lee, Seong-kyu Ahn, Ho-dong Kim <i>Korea Atomic Energy Research Institute, Daejeon, Republic of Korea</i>	
4:00 p.m. Abstract #491	Next Generation Safeguards Initiative Safeguards By Design Program Karyn R. Durbin ¹ , Dunbar Lockwood ¹ , Michael Whitaker ² ¹ <i>Department of Energy/National Nuclear Security Administration, Washington, DC, USA</i> , ² <i>Oak Ridge National Laboratory, Oak Ridge, TN, USA</i>	
4:20 p.m. Abstract #158	Design-aided Safeguards in Final Disposal installations – SbD Put in Practice in the EU Christos Koutsoyannopoulos , Herbert Dratschmidt, Wolfgang Kahnmeier, Mentor Murtezi, Peter Schwalbach <i>European Commission, Luxembourg, Luxembourg</i>	
4:40 p.m. Abstract #320	The INL Nuclear and Radiological Activity Center David Chichester , Jeff Sanders, Jennifer Turnage, James West, Mary Anne Willmore, Rebecca West, David Ceci, John Dwight <i>Idaho National Laboratory, Idaho Falls, ID, USA</i>	
Session B	International Safeguards – Modeling and Simulation for Safeguards	Desert Ballroom 1-3
	Chair: Catherine Romano, <i>Oak Ridge National Laboratory, United States</i>	
3:20 p.m. Abstract #204	Modeling of Interconnected UF₆ Enrichment Cascades for Nonproliferation Analysis Giovanni Mercurio , Paolo Peerani, Patrice Richir, Willem Janssens <i>European Commission Joint Research Centre, Ispra, Italy</i>	
3:40 p.m. Abstract #288	Simulations of Optical Photons for the EJ-309 Organic-Liquid Scintillator Syed F. Naeem , Shaun D. Clarke, Marek Flaska, Sara A. Pozzi <i>University of Michigan, Ann Arbor, MI, USA</i>	
4:00 p.m. Abstract #431	Game Theoretic Safeguards and Inspection Strategy Selection at an Enrichment Facility Rebecca Ward , Erich A. Schneider <i>The University of Texas at Austin, Austin, TX, USA</i>	



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Session C	International Safeguards — Member State Support Program Contributions to International Safeguards II Co-Chairs: Irmgard Niemeyer, <i>Forschungszentrum Juelich, Germany</i> , and William McCarthy, <i>United Kingdom Department of Energy and Climate Change, United Kingdom</i>	Desert Ballroom 7
3:20 p.m. Abstract #274	The Hungarian Safeguards Support Program to the IAEA — an Overview Arpad Vincze <i>Hungarian Atomic Energy Authority, Budapest, Hungary</i>	
3:40 p.m. Abstract #331	ROK Support Program and Enhanced Cooperation with IAEA Na Young Lee , Byung Marn Koh <i>Korea Institute of Nuclear Nonproliferation and Control, Daejeon, South Korea</i>	
4:00 p.m. Abstract #132	United Kingdom Support Program to IAEA Safeguards Jim Tushingham ¹ , Bill McCarthy ² ¹ <i>National Nuclear Laboratory, Harwell Science Campus, United Kingdom</i> , ² <i>Department of Energy and Climate Change, London, United Kingdom</i>	
4:20 p.m. Abstract #469	U.S. Support Program Contributions to the Implementation of IAEA Safeguards Susan E. Pepper <i>Brookhaven National Laboratory, Upton, NY, USA</i>	
Session D	International Safeguards — Safeguards Lessons Learned from Severe Nuclear Accidents Co-Chairs, Doug Akers, <i>Idaho National Laboratory, United States</i> , and Mark Schanfein, <i>Idaho National Laboratory, United States</i>	Springs Ballroom A-C
3:20 p.m. Abstract #496	Technology & Solutions Implemented at Fukushima NPP Site during Nuclear Accident Massimo Morichi ¹ , Herve Toubon ² , Philippe Dubart ³ ¹ <i>AREVA - R&D Corporate, Paris, France</i> , ² <i>AREVA R&D BG Mine, Paris, France</i> , ³ <i>AREVA - R&D BUA, Paris, France</i>	
3:40 p.m. Abstract #573	TMI Reactor Core Damage Progression and Comparisons with the Fukushima Accidents Douglas W. Akers <i>Idaho National Laboratory, Idaho Falls, ID, USA</i>	
4:00 p.m. Abstract #574	Characterization Technologies Used for the TMI-2 Accident and Their Application to the Fukushima Daiichi Accident Douglas W. Akers <i>Idaho National Laboratory, Idaho Falls, ID, USA</i>	
4:20 p.m. Abstract #499	Information-driven Methodology for Safeguards Implementation at a Damaged Nuclear Fuel Cycle Facility Using Chernobyl Shelter Safeguards Experience Brian D. Boyer ¹ , Colin C. Carroll ² , Michael C. Browne ¹ ¹ <i>Los Alamos National Laboratory, Los Alamos, NM, USA</i> , ² <i>Brookhaven National Laboratory, Upton, NY, USA</i> .	
Session E	Materials Control and Accountability — Policy and Best Practices Chair: Thomas Grice, <i>U.S. Nuclear Regulatory Commission, United States</i>	Desert Ballroom 4-6
3:20 p.m. Abstract #104	How Independent Oversight Opportunities for Improvements Affect DOE MC&A Programs Gary P. Kodman , Brenda Douglass, Karen Schaffer <i>Unwin, Oliver Springs, TN, USA</i>	
3:40 p.m. Abstract #163	Applicability of Table Top Exercises for Enhancing the Evaluation of Material Control and Accountability System Effectiveness D.L. Whaley ¹ , Kenneth Byers ² , David Shisler ³ , Frank Lamb ³ ¹ <i>Department of Energy, Washington, DC, USA</i> , ² <i>Pacific Northwest National Laboratory, Richland, WA, USA</i> , ³ <i>Unwin Co., Columbus, OH, USA</i>	



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4:00 p.m. Abstract #168	United States/Russian Experience in Maintaining the Effectiveness of Upgrades for Nuclear Material Control and Accounting Equipment and Methods Taisia A. Piskureva ¹ , Alexander M. Chlenov ¹ , Brent R. McGinnis ² <i>¹FSUE Research Institute of Scientific Instruments, Lytkarino, Russian Federation,</i> <i>²Innovative Solutions Unlimited, LLC, Piketon, OH, USA</i>	
4:20 p.m. Abstract #206	An NRC Perspective on Physical Inventories and Inventory Differences at Facilities Thomas N. Pham , Glenn W. Tuttle <i>U.S. Nuclear Regulatory Commission, Washington, DC, USA</i>	
4:40 p.m. Abstract #336	Integration of Safeguards and Security to Reconfigure Special Nuclear Material Storage Areas Thomas A. Grice <i>Former Department of Energy's Mound Facility, Miamisburg, OH, USA</i>	
Session F	Nonproliferation and Arms Control – Regimes and Treaties Chair: Mona Dreicer, <i>Lawrence Livermore National Laboratory, United States</i>	Springs Ballroom K-L
3:20 p.m. Abstract #556	Alternatives to Formal Arms Control Joseph F. Pilat , Kory Budlong-Sylvester, Bryan Fearey <i>Los Alamos National Laboratory, Los Alamos, NM, USA</i>	
3:40 p.m. Abstract #424	The Prospect for Complete Nuclear Disarmament – Clarifying the Terrain Steve Cleveland ¹ , Stephen Croft ¹ , Chantell Murphy ² <i>¹Oak Ridge National Laboratory, Oak Ridge, TN, USA,</i> <i>²Los Alamos National Laboratory, Los Alamos, NM, USA</i>	
4:00 p.m. Abstract #557	Reducing Tactical Nuclear Weapons in the Next Bilateral Arms Control Treaty – Challenges and Opportunities Ariana N. Rowberry , Emily Saunders, Bryan Fearey <i>Los Alamos National Laboratory, Los Alamos, NM, USA</i>	
4:20 p.m. Abstract #539	IAEA's Verification Experience Related to Disarmament and Its Applicability to the Future Multilateral Disarmament Treaties Vitaly Fedchenko <i>Stockholm International Peace Research Institute, Stockholm, Sweden</i>	
Session G	Packaging, Transportation, and Disposition – Disposition and Disposal Chair: Yung Liu, <i>Argonne National Laboratory, United States</i>	Desert Ballroom 13
3:20 p.m. Abstract #270	Applications of Current Technology for Continuous Monitoring of Spent Fuel Robert Drayer <i>Savannah River National Laboratory, Aiken, SC, USA</i>	
3:40 p.m. Abstract #372	Qualification of Existing Casks for Final Disposal of Non-heat Generating Radioactive Waste Eva Kasperek , Holger Vöelzke <i>BAM Federal Institute for Materials Research and Testing, Berlin, Germany</i>	
4:00 p.m. Abstract #400	Advance Monitoring and Structural Health Monitoring (SHM) for Screening and Aging Management of Radioactive Waste Systems and Structures Adrian E. Mendez-Torres <i>Savannah River National Laboratory, Aiken, SC, USA</i>	
6:00 p.m. – 7:00 p.m.	Annual Business Meeting	Springs Ballroom A-C
7:00 p.m. – 8:00 p.m.	Cash Bar Reception	Springs Ballroom F-G
8:00 p.m. – Midnight	Annual Awards Banquet and Entertainment	Springs Ballroom F-G



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			Location
6:30 a.m. – 3:30 p.m.	Speaker Ready Room		Director's Suite V
7:00 a.m. – 7:45 a.m.	Speakers' Breakfast	Teressa McKinney (with Paul Ebel)	JW Pavilion
7:30 a.m. – Noon	Registration		Grand Center and North Registration Counters
7:45 a.m. – 10:00 a.m.	Companions' Continental Breakfast		Santa Rosa Ballroom
8:00 a.m. – 8:00 p.m.	Ad Hoc Committee Meeting Rooms		Director's Suite II and Director's Suite III
8:30 a.m. – 12:10 p.m.	Concurrent Technical Sessions V		
Session A	Facility Operations – Nuclear Materials Management II Chair: Warren Strong, <i>Sandia National Laboratories, United States</i>		Springs Ballroom D-E
8:30 a.m. Abstract #312	H-Canyon/HB-Line Nuclear Materials Disposition Capabilities Kenneth S. Fuller , Charles R. Goergen <i>Savannah River Nuclear Solutions, Aiken, SC, USA</i>		
8:50 a.m. Abstract #264	The Implementation of DOE 441.1-1 Containers at the Y-12 National Security Complex and the Resulting Impact of the Uranium Processing Facility (UPF) Acceleration Ron F. Milligan <i>Y-12 National Security Complex, Oak Ridge, TN, USA</i>		
9:10 a.m. Abstract #528	Implementing the DOE M 441.1-1 Nuclear Materials Packaging Manual at Lawrence Livermore National Laboratory David Riley <i>Lawrence Livermore National Laboratory, Livermore, CA, USA</i>		
9:30 a.m. Abstract #425	Used Nuclear Materials at Savannah River Site – Asset or Waste? Virginia E. Magoulas <i>Savannah River National Laboratory, Aiken, SC, USA</i>		
9:50 a.m. Abstract #133	Mark-18A Target Materials Disposition Study Sharon Robinson ¹ , Charles Alexander ¹ , Jeff Allender ² , Emory Collins ¹ , Kenneth Fuller ² , Bradley Loftin ² , Bradley Patton ¹ ¹ <i>Oak Ridge National Laboratory, Oak Ridge, TN, USA</i> , ² <i>Savannah River National Laboratory, Aiken, SC, USA</i>		
10:10 a.m. – 10:30 a.m.	Coffee Break in the Exhibit Hall		
10:30 a.m. Abstract #283	Decision Guidelines for Managing Nuclear Material Stanley Haynes , Warren Strong <i>Sandia National Laboratories, Albuquerque, NM, USA</i>		
10:50 a.m. Abstract #511	Nuclear Materials Management at Savannah River Site with License to Operate William Bates <i>Savannah River Nuclear Solutions, Aiken, SC, USA</i>		
11:10 a.m. Abstract #322	Enhancing Staging Capabilities at the Device Assembly Facility (DAF) Rustin G. Long ¹ , Robert A. Kanning, Jr. ¹ , Benjamin O. Garcia ² , Victor D. Williams, Sr. ¹ ¹ <i>National Security Technologies, LLC, Mercury, NV, USA</i> , ² <i>National Security Technologies, LLC, Las Vegas, NV, USA</i>		
11:30 a.m. Abstract #136	Status of Mk-42 Material Processing to Recover Heavy Actinides Brad D. Patton , Sharon Robinson, Dennis Benker, Emory Collins <i>Oak Ridge National Laboratory, Knoxville, TN, USA</i>		



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11:50 a.m. Abstract #237	Estimating Impurities in Surplus Plutonium for Disposition Jeffrey S. Allender ¹ , Edwin N. Moore ² ¹ Savannah River National Laboratory, Aiken, SC, USA, ² Moore Nuclear Energy, LLC, Aiken, SC, USA	
Session B	International Safeguards – NDA of Spent Fuel: Update on the Next Generation Safeguards Initiative Spent Fuel Project, Field Deployments, Integration of NDA Techniques and Uncertainty Co-Chairs: Willem Janssens, <i>European Commission Joint Research Centre, Italy</i> and Orpet Peixoto, <i>Brazilian Argentine Agency for Accounting and Control of Nuclear Materials, Brazil</i>	Desert Ballroom 1-3
8:30 a.m. Abstract #474	Update on the Next Generation Safeguards Initiative's Spent Fuel Nondestructive Assay Project Stephen J. Tobin ¹ , Holly R. Trelue ¹ , Howard O. Menlove ¹ , Martyn T. Swinhoe ¹ , Marc A. Humphrey ² , Sophie Grape ³ , Henrik Liljenfeldt ⁴ , Se-Hwan Park ⁵ ¹ Los Alamos National Laboratory, Los Alamos, NM, USA, ² National Nuclear Security Administration, Washington, DC, USA, ³ Uppsala University, Uppsala, Sweden, ⁴ Swedish Nuclear Fuel and Waste Management Company, Stockholm, Sweden, ⁵ Korea Atomic Energy Research Institute, Daejeon, South Korea	
8:50 a.m. Abstract #179	Calculated Distributions of Pu Contents within Spent Fuel Assemblies from the Fugen Reactor Michio Seya ¹ , Yoshiaki Katano ¹ , Noriyasu Ebara ² ¹ Japan Atomic Energy Agency, Tokai-mura, Naka-gun, Ibaraki-ken, Japan, ² Japan Atomic Energy Agency, Tsuruga-shi, Fukui-ken, Japan	
9:10 a.m. Abstract #180	Rehearsal and Actual Measurement of Fugen Spent Fuel Assemblies by Integrated PNAR and SINRD under the JAEA United States DOE Collaboration Program Kenta Hayashi ¹ , Takahisa Nakamura ¹ , Hisatsugu Takagi ¹ , Kaoru Horie ¹ , Tamotsu Nakayama ¹ , Kazuhiko Hashimoto ¹ , Noriyasu Ebara ¹ , Alan Michael Bolind ² , Michio Seya ² . ¹ Japan Atomic Energy Agency, Tsuruga-shi, Fukui-ken, Japan, ² Japan Atomic Energy Agency, Tokai-mura, Naka-gun, Ibaraki-ken, Japan	
9:30 a.m. Abstract #396 STUDENT PAPER	Simulation of Spent Fuel Isotopic Content Measurement with the Differential Die-Away Self-Interrogation System Alexis C. Kaplan ¹ , Steven Tobin ² , Anthony Belian ² , Martyn Swinhoe ² , Marek Flaska ¹ , Sara Pozzi ¹ ¹ University of Michigan, Ann Arbor, MI, USA, ² Los Alamos National Laboratory, Los Alamos, NM, USA	
9:50 a.m. Abstract #565	A Summary of the Use of the BIC Set to Characterize Used Nuclear Fuel Assemblies for the Purpose of Nondestructive Assay Alan Michael Bolind Japan Atomic Energy Agency, Tokai-mura, Ibaraki, Japan	
10:10 a.m. – 10:30 a.m.	Coffee Break in the Exhibit Hall	
10:30 a.m. Abstract #464	Advances in Spent Fuel Libraries Holly Trelue , Jack D. Galloway, Noah A. Fischer, Stephen J. Tobin Los Alamos National Laboratory, Los Alamos, NM, USA	
10:50 a.m. Abstract #211	Sensitivity of Nondestructive Assay Techniques to Variations in the Spent Fuel Libraries and Neutron Absorbers Tom Burr , Holly Trelue, Jonathan Dowell, Stephen Tobin, Andrea Favalli, Vladimir Henzl Los Alamos National Laboratory, Los Alamos, NM, USA	



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11:10 a.m. Abstract #259	A Proposed Method for Integrating the PNAR, TN and CIPN Techniques for the Non-destructive Assay of Used Nuclear Fuel Assemblies Alan Michael Bolind <i>Japan Atomic Energy Agency, Tokai-mura, Ibaraki, Japan</i>	
11:30 a.m. Abstract #384	Gamma-ray Mirrors for Direct Measurement of Spent Nuclear Fuel Michael J. Pivovarov¹ , Klaus P. Ziock ² , Monica Fernandez-Perea ¹ , Mark J. Harrison ² , Regina Soufli ¹ ¹ Lawrence Livermore National Laboratory, Livermore, CA, USA, ² Oak Ridge National Laboratory, Oak Ridge, TN, USA	
11:50 a.m. Abstract #489	Status of NDA Techniques in Use for IAEA Verification of Light Water Reactor Spent Fuel Alain Lebrun, Stefan Jung, Sergey Zykov, Andriy Berlizov <i>International Atomic Energy Agency, Vienna, Austria</i>	
Session C	International Safeguards — Safeguards Technology and Instrumentation — Instruments and Measurements Co-Chairs: Marius Stein, <i>AREVA BUNM - Canberra, United States</i> and David Hanks, <i>U.S. Nuclear Regulatory Commission, United States</i>	Desert Ballroom 7
8:30 a.m. Abstract #226	Fast Neutron Spectroscopy for Materials Accountancy of Uranium Hexafluoride Scott D. Kiff , Erik Brubaker, Mark Gerling, Laura Kogler, Peter Marleau, Wondwosen Mengesha, Michael Streicher <i>Sandia National Laboratories, Livermore, CA, USA</i>	
8:50 a.m. Abstract #289	Experimental Measurement of Uranium Hexafluoride Fast Neutron Signatures Mark Gerling , Erik Brubaker, Scott Kiff, Laura Kogler, Peter Marleau, Stanley Mrowka, Wondwosen Mengesha, Michael Streicher <i>Sandia National Laboratories, Livermore, CA, USA</i>	
9:10 a.m. Abstract #233	Isotopic Quantification and Analysis of Uranium Oxide for Environmental Sampling and Nuclear Safeguard Applications Using Laser-induced Breakdown Spectroscopy (LIBS) James E. Barefield II, Elizabeth J. Judge , John M. Berg, Leonard Trujillo, Loan A. Le, Leon N. Lopez <i>Los Alamos National Laboratory, Los Alamos, NM, USA</i>	
9:30 a.m. Abstract #275	Quantification of Thorium Content in Mining Tailings Using Non-destructive Assay Techniques Alexander Solodov¹ , Tyler Guzzardo ² , M. Ilman Abidin ³ , K. Kusbandono ³ ¹ Texas A&M University, College Station, TX, USA, ² Oak Ridge National Laboratory, Oak Ridge, TN, USA, ³ BAPETEN, Jakarta, Indonesia	
9:50 a.m. Abstract #410	Boron-10/Helium-3 Hybrid Detectors for Nuclear Safeguards Kevin McKinny , Thomas Anderson, Nathan Johnson <i>GE Energy, Twinsburg, OH, USA</i>	
10:10 a.m. – 10:30 a.m.	Coffee Break in the Exhibit Hall	
10:30 a.m. Abstract #472	Potential Application of Boron-lined Proportional Counters for Safeguards Neutron Coincidence Assay Robert D. McElroy , Stephen Croft <i>Oak Ridge National Laboratory, Oak Ridge, TN, USA</i>	



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10:50 a.m. Abstract #350 STUDENT PAPER	Design of a Liquid Scintillator-based Prototype Neutron Coincidence Counter for Nuclear Safeguards Alice Tomanin ¹ , Paolo Peerani ² , Hamid Tagziria ² , Greet Janssens-Maenhout ¹ , Anthony Lavietes ³ , Romano Plenteda ³ , Nick Mascarenhas ³ , Marie L. Cronholm ³ <i>¹University of Ghent, Ghent, Belgium, ²European Commission - Joint Research Centre, Ispra, Italy, ³International Atomic Energy Agency, Vienna, Austria</i>	
11:10 a.m. Abstract #484	The Thick Target Integrated Over Angle (a,n) Yield Curve for U₃O₈ Over the Energy Range from 1.5 MeV to 10 MeV and Associated Specific (a,n) Yields of the Uranium Isotopes Stephen Croft , Robert D. McElroy <i>Oak Ridge National Laboratory, Oak Ridge, TN, USA</i>	
Session D	International Safeguards – Evolution of Safeguards – International Perspective Co-Chairs: James Casterton, <i>International Atomic Energy Agency, Austria</i> , and Odilon Marcuzzo de Canto, <i>Brazilian Argentine Agency for Accounting and Control of Nuclear Materials, Brazil</i>	Springs Ballroom A-C
8:30 a.m. Abstract #494	Evolving Safeguards Implementation James A. Casterton <i>International Atomic Energy Agency, Vienna, Austria</i>	
8:50 a.m. Abstract #455	Nuclear Material Control in Brazil Fabio C. Dias <i>Brazilian Nuclear Energy Commission, Rio de Janeiro, Brazil</i>	
9:10 a.m. Abstract #348	Developments at Euratom Safeguards and Integrated Management System Paul Meylemans, Oscar Alique , Maurizio Boella, Wolfgang Kahnmeyer, Christos Koutsoyannopoulos, Piotr Szymanski <i>European Commission, Luxembourg, Luxembourg</i>	
9:30 a.m. Abstract #342	Hungary's SSAC Experience and the IAEA State-level Concept Arpad Vincze <i>Hungarian Atomic Energy Authority, Budapest, Hungary</i>	
9:50 a.m. Abstract #524	Safeguards and Physical Protection Implemented by Jordan Nuclear Regulatory Commission Mohammad Al Bqoor <i>Jordan Nuclear Regulatory Commission, Amman, Jordan</i>	
10:10 a.m. – 10:30 a.m.	Coffee Break in the Exhibit Hall	
10:30 a.m. Abstract #141	U.S. Additional Protocol: Specific Issues and Status J. Stephen Adams <i>U.S. Department of State, Washington, DC, USA</i>	
10:50 a.m. Abstract #590	The Potential Role of the IAEA in the Verification of Nuclear Disarmament Lars van Dassen <i>Swedish Radiation Safety Authority, Stockholm, Sweden</i>	
Session E	Materials Control and Accountability – Nondestructive Analysis Neutron Measurements III Chair: Arden Dougan, <i>U.S. Department of Energy/National Nuclear Security Administration, United States</i>	Desert Ballroom 4-6
8:30 a.m. Abstract #399	Enhanced Variance Reduction Capabilities in MCNPX-PoliMi Shaun D. Clarke , Mark L. Ruch, Matthew J. Marcatth, Sara A. Pozzi, Edward W. Larsen <i>University of Michigan, Ann Arbor, MI, USA</i>	



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8:50 a.m. Abstract #412	Prototype of a CLYC-based Detector System for Special Nuclear Material Accounting Erik B. Johnson , Chad Whitney, Xiao J. Chen, Sam Vogel, James F. Christian, Kanai Shah, Andrey Gueorguiev, Mickel McClish, Keith E. Holbert <i>Radiation Monitoring Devices, Watertown, MA, USA</i>	
9:10 a.m. Abstract #421	Neutron Multiplicity Distribution Measurements of ²³⁵U Induced Fission Brian Wieger ¹ , Andreas Enqvist ¹ , Shaun D. Clarke ¹ , Sara A. Pozzi ¹ , Robert C. Haight ² , Hye Young Lee ² , Brent A. Perdue ² , Elaine Kwan ³ , Ching-Yen Wu ³ ¹ <i>University of Michigan, Ann Arbor, MI, USA</i> , ² <i>Los Alamos National Laboratory, Los Alamos, NM, USA</i> , ³ <i>Lawrence Livermore National Laboratory, Livermore, CA, USA</i>	
9:30 a.m. Abstract #432 STUDENT PAPER	Characterizing Plutonium-Containing Materials with a Fast-Neutron Multiplicity Counter Jennifer L. Dolan ¹ , Matthew J. Marcath ¹ , Alexis Poitrasson-Riviere ¹ , Andreas Enqvist ¹ , Marek Flaska ¹ , Sara A. Pozzi ¹ , David L. Chichester ² ¹ <i>The University of Michigan, Ann Arbor, MI, USA</i> , ² <i>Idaho National Laboratory, Idaho Falls, ID, USA</i>	
9:50 a.m. Abstract #440 STUDENT PAPER	Direct Comparison of PSD Properties for Stilbene, p-Terphenyl, Liquid-Organic Scintillators, and Plastic-Organic Scintillators Alicia L. Salazar , Haining Zhou, Marek Flaska, Sara A. Pozzi <i>University of Michigan, Ann Arbor, MI, USA</i>	
10:10 a.m. – 10:30 a.m.	Coffee Break in the Exhibit Hall	
10:30 a.m. Abstract #445 STUDENT PAPER	Characterization of a Boron-loaded Liquid Scintillator EJ-309:B5 for Neutron Energies Between 0.5 and 10 MeV Alicia L. Salazar , Haining Zhou, Marek Flaska, Sara A. Pozzi <i>University of Michigan, Ann Arbor, MI, USA</i>	
10:50 a.m. Abstract #463	Variations of Point Model Analysis in Neutron Multiplicity Counting and Ongoing Theoretical Developments Danielle K. Hauck ¹ , Stephen Croft ² , Andrea Favalli ¹ , Peter A. Santi ¹ ¹ <i>Los Alamos National Laboratory, Los Alamos, NM, USA</i> , ² <i>Oak Ridge National Laboratory, Oak Ridge, TN, USA</i>	
11:10 a.m. Abstract #521	Pu Content Measurement in Scrap Using Neutron Coincidence Counter Anastasia Efremova, Sergey Levunin, Maxim Semenov , Sergey Shlygin, Aleksandr Antushevskii <i>Federal State Unitary Enterprise - Mayak Production Association, Ozyorsk, Russian Federation</i>	
11:30 a.m. Abstract #546	A Coincidence Counter Design Based on Corrugated Boron-coated Straws Jeffrey L. Lacy , Athanasios Athanasiades, Christopher S. Martin, Liang Sun, Gerson J. Vazquez-Flores <i>Proportional Technologies, Inc., Houston, TX, USA</i>	
Session F	Nonproliferation and Arms Control/Materials Controls and Accountability — Nuclear Forensics and Signatures Chair: Alan Icenhour, <i>Oak Ridge National Laboratory, United States</i>	Springs Ballroom F
8:30 a.m. Abstract #355	Twenty Years of Nuclear Forensics at ITU — Highlights and Recent Advances Klaus Mayer , Zsolt Varga, Maria Wallenius. <i>European Commission, Joint Research Centre, Institute for Transuranium Elements, Karlsruhe, Germany</i>	



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8:50 a.m. Abstract #548	Nuclear Forensics International Technical Working Group: Past, Present and Future of Collaborative Materials Exercises Jon M. Schwantes ¹ , Olivia Marsden ² ¹ <i>Pacific Northwest National Laboratory, Richland, WA, USA,</i> ² <i>Atomic Weapons Establishment, Aldermaston, United Kingdom</i>	
9:10 a.m. Abstract #255	R&D Status and Future Plan of Nuclear Forensics for Analytical Technology and National Library at JAEA Yoshiki Kimura , Nobuo Shinohara, Kaneaki Sato, Nobufumi Toda, Yoshiharu Shinoda, Masaru Watahiki, Yusuke Kuno <i>Japan Atomic Energy Agency, Tokai-mura, Naka-gun, Ibaraki, Japan</i>	
9:30 a.m. Abstract #284	Actinide (U-Th-Pa) Concentrations and Isotopic Disequilibrium in Surface Soils and Glassy Fallout Beads from Historical Nuclear Tests Gary R. Eppich ¹ , Timothy W. Jacomb-Hood ² , Kimberly B. Knight ¹ , Gregory D. Spriggs ¹ , Michael J. Kristo ¹ , Ian D. Hutcheon ¹ ¹ <i>Lawrence Livermore National Laboratory, Livermore, CA, USA,</i> ² <i>Pennsylvania State University, State College, PA, USA</i>	
9:50 a.m. Abstract #406	Using Fallout Gamma Spectra to Identify Nuclear Device Characteristics at Short Times after the Event Anthony Nettleton , John Mattingly <i>North Carolina State University, Raleigh, NC, USA</i>	
10:10 a.m. - 10:30 a.m.	Coffee Break in the Exhibit Hall	
10:30 a.m. Abstract #234 STUDENT PAPER	Nuclear Forensics Signature Analysis of Thermal Reactor Produced Weapons-grade Plutonium Taylor M. Coles , Sunil S. Chirayath, William S. Charlton <i>Texas A&M University, College Station, TX, USA</i>	
10:50 a.m. Abstract #254 STUDENT PAPER	Neutronics Analysis of Fast Breeder Reactor Core to Support the Plutonium Fingerprinting for Forensics (PuFF) Project Jeremy M. Osborn , Sunil S. Chirayath, William S. Charlton <i>Texas A&M University, College Station, TX, USA</i>	
11:10 a.m. Abstract #290 STUDENT PAPER	Nuclear Archaeology for Gaseous Diffusion Enrichment Plants Sebastien Philippe , Alexander Glaser <i>Princeton University, Princeton, NJ, USA</i>	
Session G	Nonproliferation and Arms Control – International and Regional Approaches to Nuclear Security and Nonproliferation Chair: Jason Roback, <i>UT-Battelle - Oak Ridge National Laboratory, United States</i>	Springs Ballroom H-J
8:30 a.m. Abstract #480	Drivers of Change in Nuclear Security Policies: Results of a Survey Matthew Bunn , Eben Harrell <i>Harvard University, Cambridge, MA, USA</i>	
8:50 a.m. Abstract #265	Approaches to Reducing the Use of Highly Enriched Uranium for Research in Russia Pavel Podvig <i>Princeton University, Princeton, NJ, USA</i>	
9:10 a.m. Abstract #155	Decreasing HEU Enrichment in IPPE Possession Gennady M. Pshakin ¹ , Igor P. Matveenko ¹ , Valery Ya Poplavko ¹ , Frank N. von Hippel ² ¹ <i>Institute for Physics and Power Engineering, Obninsk, Russian Federation,</i> ² <i>Princeton University, Princeton, NJ, USA</i>	



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9:30 a.m. Abstract #258	History Chapters of Nuclear Research in Soviet Georgia Shorena Lortkipanidze ¹ , Tamara Pataraiia ¹ , Zaza Rostomashvili ² , Giorgi Japaridze ³ , Mariam Chabashvili ² ¹ Civil Council on Defence and Security, Tbilisi, Georgia, ² Andronikashvili Institute of Physics, Tbilisi, Georgia, ³ Georgian Academy of Science, Tbilisi, Georgia	
9:50 a.m. Abstract #261	Nuclear Nonproliferation Policy Development Since the Independence of Georgia Tamara Pataraiia ¹ , Shorena Lortkipanidze ¹ , Giorgi Nabakhtiani ² , Zaza Rostomashvili ³ , Giorgi Japaridze ⁴ , Mariam Chabashvili ³ ¹ Civil Council on Defense and Security, Tbilisi, Georgia, ² Georgian Technical University, Tbilisi, Georgia, ³ Andronikashvili Institute of Physics, Tbilisi, Georgia, ⁴ Georgian Academy of Science, Tbilisi, Georgia	
10:10 a.m. – 10:30 a.m.	Coffee Break in the Exhibit Hall	
10:30 a.m. Abstract #420	Removal of Legacy Plutonium Materials from Sweden Kerry A. Dunn ¹ , Natraj C. Iyer ¹ , Steve Bellamy ¹ , Greg T. Chandler ¹ , Elizabeth R. Hackney ² , Rich E. Koenig ² , Dan R. Leduc ¹ , James W. McClard ² ¹ Savannah River National Laboratory, Aiken, SC, USA, ² Savannah River Site, Aiken, SC, USA	
10:50 a.m. Abstract #562	Reigning in India's Nuclear Capabilities: Opportunities to Incentivize Constraint Lindsay Kreslake , Bryan Fearey <i>Los Alamos National Laboratory, Los Alamos, NM, USA</i>	
11:10 a.m. Abstract #517	Complementarities and Synergies of European Union, U.S. and IAEA Nuclear Security Outreach Projects Said Abousahl ¹ , Veronique Berthou ¹ , Willem Janssens ¹ , Valerie Rouillet-Chatelus ² , Andrew Church ³ , Eleanor Melamed ⁴ ¹ Joint Research Centre, European Commission, Bruxelles, Belgium, ² International Atomic Energy Agency, Vienna, Austria, ³ U.S. Department of State, Washington, DC, USA, ⁴ U.S. Department of Energy/National Nuclear Security Administration, Washington, DC, USA	
11:30 a.m. Abstract #468	Strengthening Global Approaches to Nuclear Security Matthew Bunn , Eben Harrell <i>Harvard University, Cambridge, MA, USA</i>	
Session H	Nuclear Security and Physical Protection – Threat Identification and Definition Co-Chairs: Douglas Trout, <i>Pacific Northwest National Laboratory, United States</i> , and K.J. Maddux, <i>Y-12 National Security Complex, United States</i>	Springs Ballroom G
8:30 a.m. Abstract #327	The Perfect Heist: Recipes from Around the World Jarret M. Lafleur ¹ , Liston K. Purvis ¹ , Alex W. Roesler ¹ , Paul Westland ² ¹ Sandia National Laboratories, Livermore, CA, USA, ² United States Naval Academy, Annapolis, MD, USA	
8:50 a.m. Abstract #164	What is Nuclear Material? Definitions Are Important George M. Moore <i>Monterey Institute of International Studies, Monterey, CA, USA</i>	
9:10 a.m. Abstract #451	A Toolkit for Addressing the Insider Threat Ruth Duggan, Carol Scharmer <i>Sandia National Laboratories, Albuquerque, NM, USA</i>	
9:30 a.m. Abstract #337	Assessing Nuclear Security Culture: The Experience of Indonesia Igor Khripunov ¹ , Khairul ² , Paul Ebel ¹ , Dmitriy Nikonov ¹ ¹ University of Georgia, Athens, GA, USA, ² Nuclear Energy Agency of Indonesia - BATAN, Jakarta, Indonesia	



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9:50 a.m. Abstract #368	Human-Complex System Interactions and Complacency Within High-consequence Facilities William J. Toth ¹ , Joseph R. Stainback ² ¹ <i>Oak Ridge National Laboratory, Oak Ridge, TN, USA,</i> ² <i>University of Tennessee, Knoxville, TN, USA</i>
10:10 a.m. – 10:30 a.m.	Coffee Break in the Exhibit Hall
10:30 a.m. Abstract #584	Protecting U.S. Nuclear Facilities from Terrorist Attack — Re-assessing the Current Design Basis Threat Approach Alan J. Kuperman , Lara Kirkham <i>University of Texas at Austin, Austin, TX, USA</i>
Session I	Education and Training/Nuclear Security and Physical Protection — International Perspectives in Education and Nuclear Security Training Springs Ballroom K-L Co-Chairs: Na Young Lee, <i>Korea Institute Nuclear Nonproliferation and Control, South Korea,</i> and Jaime Vidaurre-Henry, <i>International Consultant, Austria</i>
8:30 a.m. Abstract #172	Efforts in Training on Security During the Transport of Nuclear and Other Radioactive Material — A Status Report Ronald B. Pope <i>Consultant, Waynesboro, PA, USA</i>
8:50 a.m. Abstract #340	The Nuclear Facilities Experience: A Joint 3S Educational Endeavor for Students from Japan, Vietnam, Russia and the United States Claudio A. Gariazzo <i>Texas A&M University, College Station, TX, USA</i>
9:10 a.m. Abstract #367 STUDENT PAPER	Texas A&M University and India Academic Exchange Collaboration of Best Practices in Nuclear Security Education James Miller ¹ , Branden Goddard ¹ , Paul Nelson ¹ , Shriram Paranjape ² , Adriane Littlefield ³ ¹ <i>Nuclear Security Science and Policy Institute, Texas A&M University, College Station, TX, USA,</i> ² <i>Pandit Deendayal Petroleum University, Gandhinagar, Gujarat, India,</i> ³ <i>Sandia National Laboratories, Albuquerque, NM, USA</i>
9:30 a.m. Abstract #299	Canadian Conceptual Approach to Safeguards Training Karen Owen-Whitred, Rowena Maxwell, Josee Beaudry, Robert Chamberlain, Omar Olahi <i>Canadian Nuclear Safety Commission, Ottawa, ON, Canada</i>
9:50 a.m. Abstract #146	Development of Centers of Excellence Play Major Role in International Capacity Building Yosuke Naoi ¹ , Naoko Noro ¹ , Carol J. Scharmer ² ¹ <i>Japan Atomic Energy Agency, Tokai-mura, Naka-gun, Ibaraki-ken, Japan,</i> ² <i>Sandia National Laboratories, Albuquerque, NM, USA</i>
10:10 a.m. – 10:30 a.m.	Coffee Break in the Exhibit Hall
10:30 a.m. Abstract #457	Course Material and Curriculum Development Activities of the International Nuclear Security Education Network (INSEN) Jason T. Harris ¹ , Christopher Hobbs ² , Johannes Sterba ³ ¹ <i>Idaho State University, Pocatello, ID, USA,</i> ² <i>Kings College London, London, United Kingdom,</i> ³ <i>Vienna University of Technology, Vienna, Austria</i>
10:50 a.m. Abstract #175	Development of a Virtual Reality System for Training in Nuclear Security Tasuku Hanai <i>Japan Atomic Energy Agency, Tokai-mura, Japan</i>



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11:10 a.m. Abstract #585	National Security Technology Complex – An Innovative Approach to Systems-based Training, Testing and Evaluation Ryan T. Whalen , Gregory A. Baum <i>Sandia National Laboratories, Albuquerque, NM, USA</i>		
10:00 a.m. – Noon	Exhibits Open		Desert Ballroom 8
11:30 a.m. – 1:30 p.m.	Chapter Presidents' Luncheon <i>(By Invitation Only)</i>	Willem Janssens	Santa Rosa Ballroom
Noon – 1:30 p.m.	Fellows Luncheon <i>(By Invitation Only)</i>	Obie Amacker	Desert Ballroom 12-14
Noon – 2:00 p.m.	ANSI N15 Technical Standards Meeting	Melanie May	Desert Ballroom 9-11
Noon – 2:00 p.m.	Exhibits Close/Dismantle		Desert Ballroom 8
12:10 p.m. – 2:00 p.m.	Lunch Break <i>(On Your Own)</i>		
2:00 p.m. – 5:00 p.m.	Registration		Grand Center and North Registration Counters
2:00 p.m. – 5:20 p.m.	Concurrent Technical Session VI		
Session A	Facility Operations – Operational Challenges and Opportunities Co-Chairs: Michelle Romano, <i>U.S. Nuclear Regulatory Commission, United States</i> , and Rick Sprague, <i>Savannah River National Laboratory, United States</i>		Springs Ballroom D-E
2:00 p.m. Abstract #200 STUDENT PAPER	Monte Carlo Analysis of the Temperature Effect on the Infinite Multiplication Factor for UO_2 and UO_2-PuO_2 Lattices of the Kritz Reactor Benchmarks S. El Ouahdani¹ , H. Boukhal ¹ , E. Chakir ² , T. El Bardouni ¹ , Y. Boulaich ³ , M. Kaddour ¹ , O. Allaoui ¹ , K. Benaalilou ¹ , S. Chham ¹ ¹ Abdelmalek Essaadi University, Tetouan, Morocco, ² Ibn Tofail University, Kenitra, Morocco, ³ Centre Nationale de l'Energie et des Sciences Techniques Nucleaires, Rabat, Morocco		
2:20 p.m. Abstract #568	Improvement on the SF Transfer Campaign in the ROK Seong Youn Jo , Seung Ho Ahn <i>Korea Institute of Nuclear Nonproliferation and Control, Daejeon, South Korea</i>		
2:40 p.m. Abstract #500	Processing of Alternate Feedstocks for the Mixed Oxide Fuel Fabrication Facility William Bates <i>Savannah River Nuclear Solutions, Aiken, SC, USA</i>		
3:00 p.m. – 3:20 p.m.	Coffee Break in the Foyer		
3:20 p.m. Abstract #313	Capability to Recover Plutonium-238 in H-Canyon/HB-Line Kenneth S. Fuller Jr. , Charles R. Goergen <i>Savannah River Nuclear Solutions, Aiken, SC, USA</i>		
3:40 p.m. Abstract #509	K-Area Material Storage – Expanding Capabilities Richard E. Koenig , Beth Hackney, Chris Amos <i>Savannah River Nuclear Solutions, Aiken, SC, USA</i>		
4:00 p.m. Abstract #208	The NRC Allegation Program David C. Ditto <i>U.S. Nuclear Regulatory Commission, Washington, DC, USA</i>		
4:20 p.m. Abstract #365	The South African SSAC's Development of Its Non-destructive Assay Capability Mongezi B. Nangu , Mosa A. Rasweswe, Eva T. Mbedzi, Koketso V. Mgole <i>South African Nuclear Energy Corporation, Pretoria, South Africa</i>		



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4:40 p.m. Abstract #395	UV-Visible Spectroscopic Process Monitor for Hot Cell Mixer-Settler Separations at ORNL's Radiochemical Engineering Development Center Jamie L. Warburton ¹ , Clarice Phelps ² , Dennis Benker ² , Brad Patton ² , Bob Wham ² ¹ <i>Oak Ridge Associated Universities - Oak Ridge National Laboratory, Oak Ridge, TN, USA,</i> ² <i>Oak Ridge National Laboratory, Oak Ridge, TN, USA</i>	
Session B	International Safeguards — NDA of Melted Spent Fuel — Overview of NDA Techniques, Application of Gamma-rays, Neutron Resonance Densitometer, and Nuclear Resonance Fluorescence Co-Chairs: Michio Seya, <i>Japan Atomic Energy Agency, Japan,</i> and David Chichester, <i>Idaho National Laboratory, United States</i>	Desert Ballroom 1-3
2:00 p.m. Abstract #173	Development of Basic NDA Technologies for Nuclear Material Accountancy of Debris of Melted Fuel Formed in Severe Accidents Michio Seya , Hideo Harada, Fumito Kitatani, Mitsuo Koizumi, Harufumi Tsuchiya, Hideki Iimura, Masatoshi Kureta, Jun Takamine, Ryoichi Hajima, Takehito Hayakawa, Toshiyuki Shizuma, Christopher Angell, Alan Michael Bolind <i>Japan Atomic Energy Agency, Tokai-mura, Naka-gun, Ibaraki-ken, Japan</i>	
2:20 p.m. Abstract #228	Status of JAEA Development Program of Gamma-ray Nondestructive Assay for Melted Nuclear Fuel Status of JAEA Development Program of Gamma-ray Nondestructive Assay for Melted Nuclear Fuel Ryoichi Hajima , Takehito Hayakawa, Toshiyuki Shizuma, Christopher T. Angell, Michio Seya <i>Japan Atomic Energy Agency, Ibaraki, Japan</i>	
2:40 p.m. Abstract #369	Integrated Active Assay Approach: Delayed Gamma-ray Component Vladimir Mozin ¹ , Alan W. Hunt ² , Edward T. E. Reedy ³ ¹ <i>Lawrence Livermore National Laboratory, Livermore, CA, USA,</i> ² <i>Idaho Accelerator Center, Idaho State University, Pocatello, ID, USA,</i> ³ <i>Department of Physics, Idaho State University, Pocatello, ID, USA</i>	
3:00 p.m. - 3:20 p.m.	Coffee Break in the Foyer	
3:20 p.m. Abstract #131	Recent Progress in Research and Development on the Neutron Resonance Densitometry for Particle-like Debris of Melted Fuel Hideo Harada ¹ , Fumito Kitatani ¹ , Mitsuo Koizumi ¹ , Harufumi Tsuchiya ¹ , Jun Takamine ¹ , Masatoshi Kureta ¹ , Hideki Iimura ¹ , Michio Seya ¹ , Bjorn Becker ² , Stefan Kopecky ² , Willy Mondelaers ² , Peter Schillebeecx ² ¹ <i>Japan Atomic Energy Agency, Ibaraki, Japan,</i> ² <i>Institute for Reference Materials and Measurements, Geel, Belgium</i>	
3:40 p.m. Abstract #148	Contribution of the Joint Research Centre to the Development of Neutron Resonance Densitometry to Characterize Melted Fuel from Severe Accidents Peter J. Schillebeecx ¹ , Bjorn Becker ¹ , Stefan Kopecky ¹ , Kim Kauwenberghs ¹ , Andre Moens ¹ , Goedele Sibbens ¹ , Willy Mondelaers ¹ , Hideo Harada ² , Harufumi Tsuchiya ³ ¹ <i>European Commission - Joint Research Centre - Institute for Reference Materials and Measurements, Geel, Belgium,</i> ² <i>Nuclear Science and Engineering Directorate, Japan Atomic Energy Agency, Tokai-mura, Japan,</i> ³ <i>Nuclear Science and Engineering Directorate, Japan Atomic Energy Agency, Tokai-mura, Japan</i>	
4:00 p.m. Abstract #153	Sample Thickness Effect on Nuclear Material Quantification with NRTA for Particle-like Debris of Melted Fuel Harufumi Tsuchiya ¹ , Hideo Harada ¹ , Fumito Kitatani ¹ , Mitsuo Koizumi ¹ , Masatoshi Kureta ¹ , Jun Takamine ¹ , Hideki Iimura ¹ , Bjorn Becker ² , Stefan Kopecky ² , Kim Kauwenberghs ² , Andre Moens ² , Willy Mondelaers ² , Peter Schillebeecx ² ¹ <i>Japan Atomic Energy Agency, Naka-gun, Japan,</i> ² <i>Joint Research Center, Institute for Reference Materials and Measurements, Geel, Belgium</i>	



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4:20 p.m. Abstract #219	Demonstration of the Nuclear Resonance Fluorescence Integral Resonance Transmission Method for NDA of Debris of Melted Nuclear Fuel Christopher Angell¹ , Takehito Hayakawa ¹ , Toshiyuki Shizuma ¹ , Ryoichi Hajima ¹ , Brian Quiter ² , Bernhard Ludewigt ² , Mohammad Omer ³ , Hugon Karwowski ⁴ , Grayson Rich ⁴ ¹ Japan Atomic Energy Agency, Tokai-mura, Ibaraki-ken, Japan, ² Lawrence Berkeley National Laboratory, Berkeley, CA, USA, ³ Institute of Advanced Energy, Kyoto University, Kyoto, Japan, ⁴ University of North Carolina, Chapel Hill, NC, USA	
4:40 p.m. Abstract #250	Passive Gamma Spectrometry of Low-volatile FPs for Accountancy of Special Nuclear Material in Molten Core Material of Fukushima Daiichi Nuclear Power Plant: Overview and Research Plan Hiroshi Sagara, Hirofumi Tomikawa, Akihiro Ishimi, Koji Takasaki, Masaru Watahiki, Masahiko Osaka, Chikara Ito, Yusuke Kuno Japan Atomic Energy Agency, Ibaraki-ken, Japan	
Session C	International Safeguards — Safeguards Technology and Instrumentation — Concepts and Research and Development Co-Chairs: Heidi Smartt, Sandia National Laboratories, United States, and George Baldwin, Sandia National Laboratories, United States	Desert Ballroom 7
2:00 p.m. Abstract #154	The Case for the Application of Worldwide Marine Radioactivity Studies in the Search for Undeclared Facilities and Activities Cesare Liguori ¹ , Mark Schanfein² ¹ International Atomic Energy Agency, Vienna, Austria, ² Idaho National Laboratory, Idaho Falls, ID, USA	
2:20 p.m. Abstract #388	Antineutrino Detection for Reactor Monitoring and Safeguards: A Summary of U.S. Efforts Nathaniel Bowden¹ , Adam Bernstein ¹ , Timothy Classen ¹ , Anna Erickson ¹ , Laura Kogler ² , David Reyna ² ¹ Lawrence Livermore National Laboratory, Livermore, CA, USA, ² Sandia National Laboratories, Livermore, CA, USA	
2:40 p.m. Abstract #389	Water Cherenkov Monitor of Antineutrinos — Overview and Status of the WATCHMAN Project Adam Bernstein Lawrence Livermore National Laboratory, Livermore, CA, USA	
3:00 p.m. – 3:20 p.m.	Coffee Break in the Foyer	
3:20 p.m. Abstract #490	On-site Bias Defect Verification Using the COMPUCEA Mobile Analytical System: Implementation in International Safeguards Practice Andriy Berlizov¹ , Nicole Erdmann ² , Aleksandr Kulko ¹ , Andreas Schachinger ¹ ¹ International Atomic Energy Agency, Vienna, Austria, ² European Commission, Joint Research Centre, Institute for Transuranium Elements, Karlsruhe, Germany	
Session D	International Safeguards — Evolution of Safeguards — Technical Challenges Co-Chairs: J. Christian Kessler, NorthRaven Consulting, LLC and University of Washington, United States, and Gotthard Stein, Consultant, Germany	Springs Ballroom A-C
2:00 p.m. Abstract #272	Approaching Acquisition Path Analysis Formally — Experiences So Far Clemens Listner¹ , Morton J. Canty ¹ , Irmgard Niemeyer ¹ , Arnold Rezniczek ² , Gotthard Stein ³ ¹ Forschungszentrum Jülich, Jülich, Germany, ² UBA GmbH, Herzogenrath, Germany, ³ Consultant, Bonn, Germany	
2:20 p.m. Abstract #188	Challenges in Reporting on United States Foreign Obligated Materials Jonas Siegel University of Maryland, College Park, MD, USA	



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2:40 p.m. Abstract #502	Nuclear Fuel Cycle Verification Data and the State-level Concept – Opportunities and Challenges Claude F. Norman , Ke Zhao, Jacques G. Baute <i>International Atomic Energy Agency, Vienna, Austria</i>	
3:00 p.m. – 3:20 p.m.	Coffee Break in the Foyer	
3:20 p.m. Abstract #269	Considering Integrated Safeguards and the State-level Concept in the Development of Equipment and Techniques for Safeguards Martin Duerr ¹ , Irmgard Niemeyer ¹ , Bernd Richter ¹ , Gotthard Stein ² , Hans H. Remagen ³ , Wolfgang Trautwein ³ , Arnold Rezniczek ⁴ <i>¹Forschungszentrum Juelich, Juelich, Germany, ²Consultant, Bonn, Germany, ³Federal Ministry of Economics and Technology, Bonn, Germany, ⁴UBA GmbH, Herzogenrath, Germany</i>	
3:40 p.m. Abstract #328	Strengthening Safeguards Verification Activities at Uranium Mines Michael East , Craig Everton, Stephan Bayer, Robert Floyd <i>Australian Safeguards and Non-Proliferation Office, Barton ACT, Australia</i>	
4:00 p.m. Abstract #376	Strengthening Safeguards in the Front End of the Fuel Cycle Michael Whitaker ¹ , John M. Begovich ¹ , Lisa Loden ¹ , Ann C. Pederson ¹ , Dunbar Lockwood ² <i>¹Oak Ridge National Laboratory, Oak Ridge, TN, USA, ²National Nuclear Security Administration, Washington, DC, USA</i>	
Session E	Materials Control and Accountability – Nondestructive Analysis Gamma Measurements I Chair: Markku Koskelo, <i>AQUILA Technologies, United States</i>	Desert Ballroom 4-6
2:00 p.m. Abstract #114	A Study on the In-growth of Uranium Daughters' Gamma-rays from a Freshly Separated Uranium Gamma-ray Standard Tzu-Fang Wang <i>Lawrence Livermore National Laboratory, Livermore, CA, USA</i>	
2:20 p.m. Abstract #310 STUDENT PAPER	HMS-4 Taking Another Look at Correction Algorithms Alex Okowita <i>North Carolina State University, Waxhaw, NC, USA</i>	
2:40 p.m. Abstract #361	Experience in Implementing a System Approach to Personnel Training on Nuclear Sites under the Russian-American “Physical Nuclear Security Culture” Project V. Kornelyuk, T. Piskureva, N. Geraskin	
3:00 p.m. – 3:20 p.m.	Coffee Break in the Foyer	
3:20 p.m. Abstract #429 STUDENT PAPER	Synthetic Scoring Scheme for Isotope Identification in SmartID Jessica N. Paul , Glenn E. Sjoden, Ce Yi <i>Georgia Institute of Technology, Atlanta, GA, USA</i>	
3:40 p.m. Abstract #527	Qualifying a Two Detector ISOCs System for Characterization of Transuranic Waste Bruce M. Gillespie , Susan Kane Smith, Curt Baumann, Jared Francis, Sean Stanfield <i>Canberra Industries, Meriden, CT, USA</i>	
4:00 p.m. Abstract #106 STUDENT PAPER	Time-correlated-pulse-height Technique Measurements of Fissile Samples at the Device Assembly Facility Mateusz Monterial ¹ , Marc G. Paff ¹ , Shaun Clarke ¹ , Eric Miller ¹ , Sara A. Pozzi ¹ , Peter Marleau ² , Scott Kiff ² , Aaron Nowack ² , John Mattingly ³ <i>¹University of Michigan, Ann Arbor, MI, USA, ²Sandia National Laboratories, Livermore, CA, USA, ³North Carolina State University, Raleigh, NC, USA</i>	



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4:20 p.m. Abstract #268 STUDENT PAPER	A Quantitative Comparison of Analog and Digital Pulse-Shape-Discrimination Systems for Organic Scintillators Charles S. Sosa , Marek Flaska, Sara A. Pozzi <i>University of Michigan, Ann Arbor, MI, USA</i>	
Session F	Nonproliferation and Arms Control/Education and Training – Nuclear Security Culture and Training Co-Chairs: Patrick Lynch, <i>Oak Ridge National Laboratory, United States</i> , and Wessam Hindy, <i>Nuclear Power Plants Authority, Egypt</i>	Springs Ballroom H-J
2:00 p.m. Abstract #581	Next Generation Nuclear Security Training Techniques Patrick D. Lynch, Jeremy Townsend , Dyrk Greenhalgh, Michael Shannon <i>Oak Ridge National Laboratory, Oak Ridge, TN, USA</i>	
2:20 p.m. Abstract #575	The Development of Nuclear Security Education and Training in South Africa James Larkin <i>The University of the Witwatersrand, Johannesburg, South Africa</i>	
2:40 p.m. Abstract #576	The Development of Nuclear Security Culture in Nigeria Sunday Jonah <i>Ahmadu Bello University, Zaria, Kaduna State, Nigeria</i>	
3:00 p.m. – 3:20 p.m.	Coffee Break in the Foyer	
3:20 p.m. Abstract #577	Nuclear Security and Safety at Waste Disposal Facilities in Egypt Yasser Selim <i>Egypt Atomic Energy Authority, Cairo, Egypt</i>	
3:40 p.m. Abstract #578	Nuclear Security Planning and Education in Jordan Salaheddin Malkawi <i>Jordan University of Science and Technology, Irbid, Jordan</i>	
4:00 p.m. Abstract #579	Pakistan's Center of Excellence for Nuclear Safety and Security Training Syed Tahir Raza Naqvi <i>Government of Pakistan, Rawalpindi, Pakistan</i>	
4:20 p.m. Abstract #522	The Gulf Nuclear Energy Infrastructure Institute (GNEII) After Three Years Robert J. Finch ¹ , Abdelaziz M. Al-Madhloum ² , Michael J. Schuller ³ , David R. Boyle ³ , Amir H. Mohagheghi ¹ , Faraj Ghanbari ¹ , Adam D. Williams ¹ , Philip A. Beeley ² ¹ <i>Sandia National Laboratories, Albuquerque, NM, USA</i> , ² <i>Khalifa University of Science, Technology and Research, Abu Dhabi, United Arab Emirates</i> , ³ <i>Nuclear Security Science Policy Institute, Texas A&M University, College Station, TX, USA</i>	
4:40 p.m. Abstract #345	From Awareness Raising to Capacity Building in Nuclear Forensics in South East Asia Klaus Mayer ¹ , Jean Galy ¹ , Heather Dion ² , Wayne Mei ² , Donna Smith ² ¹ <i>European Commission, Joint Research Centre - Institute for Transuranium Elements, Karlsruhe, Germany</i> , ² <i>United States Department of Energy/National Nuclear Security Administration, Washington, DC, USA</i>	
Session G	Nonproliferation and Arms Control/Education and Training – Fuel Cycle – Challenges and Opportunities Chair: Joyce Connery, <i>National Security Staff, United States</i>	Springs Ballroom F
2:00 p.m. Abstract #144	Study on Sustainable Regional Nuclear Fuel Cycle Framework from Nuclear Non-Proliferation Viewpoint (IV) A Specific Proposal of Asian Regional MNA Framework Yusuke Kuno ¹ , Makiko Tazaki ¹ , Mitsunori Akiba ² , Takeo Adachi ² , Ryuta Takashima ² , Satoru Tanaka ² ¹ <i>Japan Atomic Energy Agency/University of Tokyo, Tokai-mura, Ibaraki-ken, Japan</i> , ² <i>University of Tokyo, Tokyo, Japan</i>	



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2:20 p.m. Abstract #107	The Uncertain Future of Reprocessing in Japan Frank N. von Hippel <i>Princeton University, Princeton, NJ, USA</i>	
2:40 p.m. Abstract #434	WIPP and Plutonium Disposition: End of the Spent Fuel Standard? Edwin Lyman <i>Union of Concerned Scientists, Washington, DC, USA</i>	
3:00 p.m. - 3:20 p.m.	Coffee Break in the Foyer	
3:20 p.m. Abstract #333	Pyroprocessing and the Republic of Korea: A Policy Review Philip Baxter <i>Georgia Institute of Technology, Atlanta, GA, USA</i>	
3:40 p.m. Abstract #145	Study on Sustainable Regional Nuclear Fuel Cycle Framework from Nuclear Nonproliferation Viewpoint (V) Comprehensive Evaluation of Asian Regional MNA Framework Yusuke Kuno ¹ , Makiko Tazaki ¹ , Mitsunori Akiba ² , Takeo Adachi ² , Ryuta Takashima ² , Satoru Tanaka ² ¹ <i>Japan Atomic Energy Agency/University of Tokyo, Tokai-mura, Ibaraki-ken, Japan,</i> ² <i>University of Tokyo, Tokyo, Japan</i>	
4:00 p.m. Abstract #569	The IAEA LEU Bank: An Important Contribution to Nuclear Fuel Supply Assurance Kevin Alldred , Christophe Carle <i>International Atomic Energy Agency, Vienna, Austria</i>	
4:20 p.m. Abstract #467	Multinational Spent Fuel Disposal: Nonproliferation Challenges and Opportunities Andrew Newman <i>Nuclear Threat Initiative, Washington, DC, USA</i>	
4:40 p.m. Abstract #192 STUDENT PAPER	Current and Future State of Pyroprocessing Safeguards Jeffrey E. Lux , Matthew Tyler Cook, Matthew L. Baruzzini, Steven J. Jones, Steven E. Skutnik, Howard L. Hall <i>University of Tennessee, Knoxville, TN, USA</i>	
Session H	Nuclear Security and Physical Protection – Nuclear and Radiological Detection Technologies II Chair: William Charlton, <i>Texas A&M University, United States</i>	Springs Ballroom K-L
2:00 p.m. Abstract #159	Potential Benefits from Detection of Neutrons via Gamma Spectra of RIIDs Andy Li , Rick Chiffelle, George Berzins, Calvin Moss, Randy Jones <i>Applied Research Associates, Inc, Albuquerque, NM, USA</i>	
2:20 p.m. Abstract #416 STUDENT PAPER	Interaction Location Reconstruction Using a Single Volume Neutron Scatter Camera Kyle Weinfurther ¹ , John Mattingly ¹ , Erik Brubaker ² , Peter Marleau ² ¹ <i>North Carolina State University, Raleigh, NC, USA,</i> ² <i>Sandia National Laboratories, Livermore, CA, USA</i>	
2:40 p.m. Abstract #201	Identification Technology for Monitoring Plutonium and HEU in Nuclear Material Storage Changfan Zhang , Gen Hu, Chengsheng Chu, Huailong Wu, Guangchun Hu, Suping Liu, Yongchun Xiang, Zonghua Xiong <i>Institute of Nuclear Physics and Chemistry, China Academy of Engineering Physics, Mianyang, China</i>	
3:00 p.m. - 3:20 p.m.	Coffee Break in the Foyer	



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3:20 p.m. Abstract #220 STUDENT PAPER	Optimization of CFD Parameters to Minimize Jitter Using Floating-Point Constant Fraction Delay Jack D. Linkous , John Mattingly <i>North Carolina State University, Raleigh, NC, USA</i>	
3:40 p.m. Abstract #298	Shielding and Detector Response Calculations Pertaining to Category 1 Quantities of Plutonium and Hand-Held Plastic Scintillators Alexander H. Couture <i>Savannah River National Laboratory, Aiken, SC, USA</i>	
4:00 p.m. Abstract #433 STUDENT PAPER	Improvements in the MCNPX-PoliMi Post-processing Code for Determining Detector Response M. Ruch, S. Clarke, S. Pozzi	
4:20 p.m. Abstract #542	Affordable High-sensitivity Radiation Detection Using the Correlated Variation Method Rollin Evans <i>Pensylvania Avenue Software, Albuquerque, NM, USA</i>	
Session I	Packaging, Transportation and Disposition – Regulatory and Transport Chair: Joseph Kinney, <i>Savannah River National Laboratory, United States</i>	Springs Ballroom G
2:00 p.m. Abstract #171	Developing the Historical Technical Basis for the IAEA Regulations for the Safe Transport of Radioactive Material: Material Classification, Package Classification, Package Test Requirements and Criticality Safety Ronald B. Pope <i>Consultant, Waynesboro, PA, USA</i>	
2:20 p.m. Abstract #363	Development of Transportation Security Regulations by the Nuclear Regulatory Commission Clyde Ragland, Joseph Rivers, Albert Tardiff, Gerard Jackson <i>United States Nuclear Regulatory Commission, Rockville, MD, USA</i>	
2:40 p.m. Abstract #300	Elucidating the Differences Between Onsite and Offsite Shipment of Radioactive Materials Bradley M. Loftin , Robert Watkins <i>Savannah River National Laboratory, Aiken, SC, USA</i>	
3:00 p.m. - 3:20 p.m.	Coffee Break in the Foyer	
5:30 p.m. - 7:00 p.m.	Student Career Fair	Santa Rosa Ballroom



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6:30 a.m. – 10:30 a.m.	Speaker Ready Room	Director's Suite V
7:00 a.m. – 7:45 a.m.	Speakers' Breakfast	Teresa McKinney (with Paul Ebel)
7:30 a.m. – Noon	Registration	Grand Center and North Registration Counters
7:45 a.m. – 10:00 a.m.	Companions' Continental Breakfast	Santa Rosa Ballroom
8:00 a.m. – 8:00 p.m.	Ad Hoc Committee Meeting Rooms	Director's Suite II and Director's Suite III
8:30 a.m. – 11:50 a.m.	Concurrent Technical Sessions VII	
Session A	International Safeguards – Open-Source and Geospatial Information for International Nuclear Safeguards, Nonproliferation and Arms Control Chair: Claude Norman, <i>International Atomic Energy Agency, Austria</i>	Springs Ballroom A-C
8:30 a.m. Abstract #111	The New Geospatial Tools: Global Transparency Enhancing IAEA Safeguards Frank Pabian <i>Los Alamos National Laboratory, Los Alamos, NM, USA</i>	
8:50 a.m. Abstract #236	Semantic Information Technologies for Safeguards and Nonproliferation Michael D. McDaniel <i>Sandia National Laboratories, Albuquerque, NM, USA</i>	
9:10 a.m. Abstract #239	Bayesian Model Development for Analysis of Open Source Information to Support the Assessment of Nuclear Programs Zoe N. Gastelum , Amanda White, Paul Whitney <i>Pacific Northwest National Laboratory, Richland, WA, USA</i>	
9:30 a.m. Abstract #240	Identifying, Visualizing and Fusing Social Media Data to Support Nonproliferation and Arms Control Treaty Verification: Preliminary Results Zoe N. Gastelum ¹ , Nick Cramer ¹ , Sean Kreyling ² , Courtney Corley ¹ , Stuart Rose ¹ , Michelle Gregory ¹ ¹ <i>Pacific Northwest National Laboratory, Richland, WA, USA</i> , ² <i>Pacific Northwest National Laboratory, Seattle, WA, USA</i>	
9:50 a.m. Abstract #380	Advances in Detecting Changes at Nuclear Facilities Using Very High-resolution Optical Satellite Imagery Irmgard Niemeyer ¹ , Clemens Listner ¹ , Sven Nussbaum ² ¹ <i>Forschungszentrum Jülich GmbH, Juelich, Germany</i> , ² <i>University of Bonn, Center for Remote Sensing of Land Surfaces, Bonn, Germany</i>	
10:10 a.m. – 10:30 a.m.	Coffee Break in the Foyer	
10:30 a.m. Abstract #478	The Opportunities and Limits of Societal Verification Kelsey L. Hartigan , Corey Hinderstein <i>Nuclear Threat Initiative, Washington, DC, USA</i>	
10:50 a.m. Abstract #498	The Role of the IAEA's Geospatial Exploitation System in Integrating All-Source Analysis Karen Steinmaus, Claude Norman <i>International Atomic Energy Agency, Vienna, Austria</i>	
11:10 a.m. Abstract #505	Scientific and Technical Literature as a Source for State Evaluation Yana Feldman, Ahmed El Gebaly, Ercan Saka, Michael Barletta, Matthew Ferguson, Claude Norman <i>International Atomic Energy Agency, Vienna, Austria</i>	



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Session B	International Safeguards — Plutonium Recycle — Measurement and Technology	Desert Ballroom 1-3
	Co-Chairs: Shirley Johnson, <i>Tucker Creek Consulting, United States</i> , and Yusuke Kuno, <i>The University of Tokyo, Japan</i>	
8:30 a.m. Abstract #343	hiRX Performance in the Characterization of Plutonium for Safeguards Applications George J. Havrilla , Velma Montoya, Kathryn McIntosh, Hakim Boukhalfa <i>Los Alamos National Laboratory, Los Alamos, NM, USA</i>	
8:50 a.m. Abstract #346	Ultra High Energy X-ray Fluorescence Direct Detection of Plutonium and Uranium through Container Walls George J. Havrilla ¹ , Velma Montoya ¹ , Kathryn McIntosh ¹ , William Elam ² , Douglas Robinson ³ <i>¹Los Alamos National Laboratory, Los Alamos, NM, USA, ²University of Washington, Seattle, WA, USA, ³Argonne National Laboratory, Argonne, IL, USA</i>	
9:10 a.m. Abstract #401	Development of Micro Fluidics Lab on Chip Concept for Verification of Pu in Aqueous Process Adrian E. Mendez-Torres <i>Savannah River National Laboratory, Aiken, SC, USA</i>	
9:30 a.m. Abstract #222	Performance Test Result of the Advanced Verification for Inventory Sample System (AVIS) Taketeru Nagatani ¹ , Shinji Nakajima ¹ , Takashi Asano ¹ , Johnna Marlow ² , Martyn Swinhoe ² , Howard Menlove ² , Carlos Rael ³ , Akane Kawasue ⁴ , Shoko Iso ⁵ , Shinichi Kumakura ⁵ , Takehito Watanabe ⁵ <i>¹Japan Atomic Energy Agency, Tokai-mura, Japan, ²Los Alamos National Laboratory, Los Alamos, NM, USA, ³Los Alamos National Laboratory, Los Alamos, NJ, USA, ⁴Ministry of Education, Culture, Sports, Science and Technology, Tokyo, Japan, ⁵Nuclear Material Control Center, Tokyo, Japan</i>	
9:50 a.m. Abstract #506	Research and Development Activities at Savannah River Site's H Canyon Facility Lindsay Sexton , Kenneth Fuller <i>Savannah River National Laboratory, Aiken, SC, USA</i>	
10:10 a.m. – 10:30 a.m.	Coffee Break in the Foyer	
10:30 a.m. Abstract #190	Electrochemical Reprocessing Safeguards Technology Needs Benjamin Cipiti <i>Sandia National Laboratories, Albuquerque, NM, USA</i>	
10:50 a.m. Abstract #353	Current State and Plans of R&D in ROK on Safeguards for Pyroprocessing Facility Seong-Kyu Ahn , Ho-Dong Kim, Eun-ha Kwon, Se-Hwan Park <i>Korea Atomic Energy Research Institute, Daejeon, South Korea</i>	
Session C	International Safeguards — Safeguards Development and Experiences for Enrichment Plants	Desert Ballroom 7
	Co-Chairs: Amy Johnson, <i>URENCO USA, United States</i> , and Brian Boyer, <i>Los Alamos National Laboratory, United States</i>	
8:30 a.m. Abstract #443 STUDENT PAPER	Failure and Intentional Off-Normal Operation in a Gas Centrifuge Cascade Patrick J. Migliorini , William C. Witt, Houston G. Wood <i>University of Virginia, Charlottesville, VA, USA</i>	
8:50 a.m. Abstract #563	A Robust and Flexible Design for Gas Centrifuge Enrichment Plant: Unattended Online Enrichment Monitoring James R. Younkin ¹ , James R. Garner ¹ , Jose A. March-Leuba ¹ , Nathan C. Rowe ¹ , Eric Smith ² <i>¹UT Battelle - Oak Ridge National Laboratory, Oak Ridge, TN, USA, ²International Atomic Energy Agency, Vienna, Austria</i>	



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9:10 a.m. Abstract #448 STUDENT PAPER	Modeling Iran's Tandem Cascade Configuration for Uranium Enrichment by Gas Centrifuge William C. Witt ¹ , Patrick J. Migliorini ¹ , Houston G. Wood ¹ , David Albright ² ¹ University of Virginia, Charlottesville, VA, USA, ² Institute for Science and International Security, WA USA
9:30 a.m. Abstract #183	Suspension of Nuclear Activities Is Not End of Diversion Risks David Nusbaum Harvard University, Cambridge, MA, USA
Session D	Materials Control and Accountability – Spent Fuel Measurements Desert Ballroom 4-6 Co-Chairs: Holly Trellue, Los Alamos National Laboratory, United States, and Vladimir Mozin, Lawrence Livermore National Laboratory, United States
8:30 a.m. Abstract #101	Andreeva Bay Program: Contributions of the European Commission João G.M. Gonçalves ¹ , Martin Andersen ² , Anatoly V. Grigoriev ³ , Alexander O. Pimenov ⁴ , Daria A. Plyshevskaya ⁴ ¹ European Commission Joint Research Centre, Ispra, Italy, ² EC - DG Development and Cooperation, Brussels, Belgium, ³ ROSATOM, Moscow, Russian Federation, ⁴ Federal Centre for Nuclear and Radiation Safety, Moscow, Russian Federation
8:50 a.m. Abstract #262	A Summary of JAEA's R&D Programs for Advanced Technologies for Nuclear Security and Safeguards Alan Michael Bolind , Michio Seya Japan Atomic Energy Agency, Tokai-mura, Ibaraki, Japan
9:10 a.m. Abstract #325	Update on Establishing the Feasibility of Lead Slowing Down Spectroscopy for Direct Measurement of Plutonium in Used Fuel Jonathan A. Kulisek ¹ , Kevin Anderson ¹ , Andrew Casella ¹ , Glen Warren ¹ , Victor Gavron ² , Yaron Danon ³ , Adam Weltz ³ , Jason Harris ⁴ , George Imel ⁴ , Trevor Stewart ⁴ ¹ Pacific Northwest National Laboratory, Richland, WA, USA, ² Los Alamos National Laboratory, Los Alamos, NM, USA, ³ Rensselaer Polytechnic Institute, Troy, NY, USA, ⁴ Idaho State University, Pocatello, ID, USA
9:30 a.m. Abstract #435 STUDENT PAPER	Experimental Gamma Ray Burnup Analysis of Penn State TRIGA Reactor Spent Fuel Rods Sarah Bender, Chad Durrant , Brenden J. Heidrich, Kenan Unlu Penn State University, University Park, PA, USA
9:50 a.m. Abstract #437	Plutonium Nuclear Resonance Fluorescence Measurements Using Narrow Energy-spread Photon Sources Brian Quiter ¹ , Thibault Laplace ² , Bernhard Ludewigt ¹ ¹ Lawrence Berkeley National Laboratory, Berkeley, CA, USA, ² Lawrence Berkeley National Laboratory, University of California, Berkeley, Berkeley, CA, USA
10:10 a.m. – 10:30 a.m.	Coffee Break in the Foyer
10:30 a.m. Abstract #532 STUDENT PAPER	NRX Reactor Spent Fuel Study Grant R. Spence Texas A&M University, College Station, TX, USA
10:50 a.m. Abstract #550	Electrochemically Modulated Separation for Plutonium Safeguards Sandra H. Pratt ¹ , Andrew T. Breshears ² , Leah M. Arrigo ¹ , Jon M. Schwantes ¹ , Douglas C. Duckworth ¹ ¹ Pacific Northwest National Laboratory, Richland, WA, USA, ² University of Missouri, Columbia, MO, USA



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Session E	Materials Control and Accountability – Nondestructive Analysis Gamma Measurements II Chair: Stephen Croft, <i>Oak Ridge National Laboratory, United States</i>	Springs Ballroom D-E
8:30 a.m. Abstract #462	A New Method of Radiation Sensing and Analysis Adam Hecht , Jean-Claude Diels, Ladan Arissian, Erin Husher <i>University of New Mexico, Albuquerque, NM, USA</i>	
8:50 a.m. Abstract #329	Systematic Evaluation of Minimum Detectable Activity for the Tomographic Gamma Scanning Technique Susan K. Smith ¹ , Marcel Villani ¹ , Paul J. LeBlanc ¹ , John Kirkpatrick ¹ , Ramkumar Venkataraman ¹ , Brian Young ¹ , Stephen Croft ² ¹ <i>Canberra Industries, Inc, Meriden, CT, USA</i> , ² <i>Oak Ridge National Laboratory, Oak Ridge, TN, USA</i>	
9:10 a.m. Abstract #475	Fill Height Corrections in Segmented Gamma Non-destructive Assay for Highly Attenuating Scenarios Dante Nakazawa , Sasha Philips, Marcel Villani <i>Canberra Industries, Inc., Meriden, CT, USA</i>	
9:30 a.m. Abstract #477	Impact of Source Definitions in Efficiency Calibrations for Segmented Gamma Non-Destructive Assay Dante Nakazawa , Sasha Philips, Marcel Villani, Brian Young <i>Canberra Industries, Inc., Meriden, CT, USA</i>	
9:50 a.m. Abstract #520	Universal Approach to Develop Measurement Methods for Pu Content Determination in Deposits, Accretions, Waste, and Scrap Anastasia Efremova , Maxim Semenov, Sergey Levunin, Aleksandr Antushevskii, Sergey Shlygin <i>Federal State Unitary Enterprise - Mayak Production Association, Ozyorsk, Russian Federation</i>	
10:10 a.m. – 10:30 a.m.	Coffee Break in the Foyer	
10:30 a.m. Abstract #544 STUDENT PAPER	Benchmarking NRF Simulation in MCNPX Thomas C. Pope ¹ , Stephen Croft ² ¹ <i>University of Tennessee, Knoxville, TN, USA</i> , ² <i>Oak Ridge National Laboratory, Oak Ridge, TN, USA</i>	
Session F	Nonproliferation and Arms Control – Transparency and Verification Technologies Co-Chairs: Morris Hassler, <i>Y-12 National Security Complex, United States</i> , and Jeffrey Johnson, <i>Oak Ridge National Laboratory, United States</i>	Springs Ballroom H-J
8:30 a.m. Abstract #279	Arms Reduction Treaty Verification and Warhead Characteristics Duncan MacArthur , Danielle Hauck, Jonathan Thron, Morag Smith <i>Los Alamos National Laboratory, Los Alamos, NM, USA</i>	
8:50 a.m. Abstract #454	Benefits of a Presence of Fissile Material Attribute for Warhead Confirmation in Treaty Verification Danielle K. Hauck , Duncan W. MacArthur <i>Los Alamos National Laboratory, Los Alamos, NM, USA</i>	
9:10 a.m. Abstract #251	Towards a Practical Implementation of an Inspection System for Nuclear Warhead Verification with an Inherent Information Barrier Alexander Glaser ¹ , Boaz Barak ² , Robert J. Goldston ³ ¹ <i>Princeton University, Princeton, NJ, USA</i> , ² <i>Microsoft Research New England, Cambridge, MA, USA</i> , ³ <i>Princeton Plasma Physics Laboratory, Princeton, NJ, USA</i>	



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9:30 a.m. Abstract #263	United Kingdom/Norway Initiative Information Barrier Development: Technical Trial Results Tore Ramsøy¹, Edward Day² , Keir Allen ² , Colin Marsh ² , Martin Morgan-Reading ² , Aled Richings ² , Steinar Backe ¹ , Trygve Bjerk ¹ , Styrkaar Hustveit ³ , Steinar Høibråten ⁴ , Kjell Johansson ¹ , Hans E. Torkildsen ⁴ <i>¹Institute for Energy Technology, Kjeller, Norway, ²Atomic Weapons Establishment, Aldermaston, United Kingdom, ³Norwegian Radiation Protection Authority, Østerås, Norway, ⁴Norwegian Defence Research Establishment, Kjeller, Norway</i>	
9:50 a.m. Abstract #553	The Use of Homomorphic Encryption Methods Combined with Field Programmable Gate Array Hardware for Information Barrier Design Kyle Bunch <i>U.S. Department of State, Washington, DC, USA</i>	
10:10 a.m. – 10:30 a.m.	Coffee Break in the Foyer	
10:30 a.m. Abstract #311	Uranium Enrichment Determination with Commercial CZT Detectors and a Non-proprietary Analysis Algorithm Thomas M. Weber¹ , Manuel Trujillo ¹ , Julia Cantrell ² , Matthew Allen ¹ , Nathanael Brown ¹ <i>¹Sandia National Laboratories, Albuquerque, NM, USA, ²Y-12 National Security Complex, Oak Ridge, TN, USA</i>	
10:50 a.m. Abstract #309	Two Causes of Changes in Values Reported by an Enrichment Monitor Calvin Moss, Joetta Goda, Blake Nolen, Mark Paffett, Danielle K. Hauck <i>Los Alamos National Laboratory, Los Alamos, NM, USA</i>	
Session G	Nonproliferation and Arms Control/Materials Control and Accountability – Nuclear Forensics Methodologies Chair: Klaus Mayer, <i>European Commission-Joint Research Centre, Institute for Transuranium Elements, Germany</i>	Springs Ballroom F
8:30 a.m. Abstract #324	Development of Mass Spectrometry (TIMS) Techniques for the Measurement of 226-Radium for ²²⁶Ra-²³⁰Th Age Dating of Nuclear Materials Theresa M. Kayzar , Amy M. Gaffney, Ross W. Williams, Lars E. Borg <i>Lawrence Livermore National Laboratory, Livermore, CA, USA</i>	
8:50 a.m. Abstract #120	Progress in the Development of RIMS for Quantifying Actinide Isotope Ratios for Nuclear Forensics Applications Brett Isselhardt¹ , David G. Willingham ² , Michael R. Savina ³ , Kim B. Knight ¹ , Ian D. Hutcheon ¹ <i>¹Lawrence Livermore National Laboratory, Livermore, CA, USA, ²Pacific Northwest National Laboratory, Richland, WA, USA, ³Argonne National Laboratory, Argonne, IL, USA</i>	
9:10 a.m. Abstract #244	Validation of Total Combustion Methods to Determine Low Level C/S/N/O in Limited Size Samples Lisa P. Colletti , Frank Dickson, Charlotte Holland <i>Los Alamos National Laboratory, Los Alamos, NM, USA</i>	
9:30 a.m. Abstract #214	Example Use of a Portable OSL Reader for Nuclear Forensics Measurements Markku Koskelo , Blane Beckes, Steve Kadner <i>YFH dba Aquila, Albuquerque, NM, USA</i>	
9:50 a.m. Abstract #446	The Next Generation Safeguards Initiative on High-purity Uranium-233 Preservation and Signature Acquisition Alan M. Krichinsky ¹ , Robert D. McElroy ¹ , Stephen Croft ¹ , Louise G. Evans¹ , Joseph M. Giaquinto ¹ , Marc Humphrey ² , Taissa Sobolev ² <i>¹Oak Ridge National Laboratory, Oak Ridge, TN, USA, ²National Nuclear Security Administration, Washington, DC, USA</i>	



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10:10 a.m. – 10:30 a.m.	Coffee Break in the Foyer	
10:30 a.m. Abstract #430	Certified Reference Materials for U Radiochronometric Measurement Richard M. Essex ¹ , Delbert Bowers ² , Paul Croatto ¹ , Nancy Hui ¹ , Kent Orlandini ² <i>¹U.S. Department of Energy, Argonne, IL, USA, ²Argonne National Laboratory, Argonne, IL, USA</i>	
10:50 a.m. Abstract #449 STUDENT PAPER	Cyclic Neutron-activation Analysis for Fissile and Fissionable Actinides for Nuclear Forensics Bruce D. Pierson , Marek Flaska, Sara Pozzi <i>University of Michigan, Ann Arbor, MI, USA</i>	
Session H	Nuclear Security and Physical Protection – Protection Assessment Methodologies and Simulation Modeling Co-Chairs: Scott Kraus, AQUILA, United States, and Sunil Chirayath, Texas A&M University, United States	Springs Ballroom K-L
8:30 a.m. Abstract #583	Risk-Informed Management of Enterprise Security: Methodology and Applications to Nuclear Facilities Felicia A. Durán , Gregory D. Wyss, Sabina E. Jordan, Benjamin B. Cipiti <i>Sandia National Laboratories, Albuquerque, NM, USA</i>	
8:50 a.m. Abstract #418	A Safeguards and Security Assessment Comparing the Nuclear Material Attractiveness of Unirradiated and Irradiated Fuels Associated with HEU and LEU Research Reactors Brad Sleaford ¹ , Charles Bathke ² , Martin Robel ¹ , Kevin Hase ² , Bart Ebbinghaus ¹ , Brian Collins ³ , Zachery Beauvais ² , Jor-Shan Choi ¹ , Andrew Prichard ³ , James Blink ¹ <i>¹Lawrence Livermore National Laboratory, Livermore, CA, USA, ²Los Alamos National Laboratory, Los Alamos, NM, USA, ³Pacific Northwest National Laboratory, Richland, WA, USA</i>	
9:10 a.m. Abstract #392	A Safeguards and Security Assessment Comparing the Nuclear Material Attractiveness of Unirradiated and Irradiated Fuels Associated with Existing Power Reactors and Potential Future Small Modular Reactors Martin Robel ¹ , Bradley W. Sleaford ¹ , Charles G. Bathke ² , Bartley B. Ebbinghaus ¹ , Brian A. Collins ³ , Zachery Beauvais ² , Kevin R. Hase ² , Jor-Shan Choi ¹ , Andrew W. Prichard ³ , James A. Blink ¹ <i>¹Lawrence Livermore National Laboratory, Livermore, CA, USA, ²Los Alamos National Laboratory, Los Alamos, NM, USA, ³Pacific Northwest National Laboratory, Richland, WA, USA</i>	
9:30 a.m. Abstract #276	Challenges of Performance Testing in Nuclear and Radiological Sites KJ Maddux ¹ , Ken Martin ² <i>¹Y-12 National Security Complex, Oak Ridge, TN, USA, ²Oak Ridge National Laboratory, Oak Ridge, TN, USA</i>	
9:50 a.m. Abstract #252	New Attempt to Assess Interruption Probability with Sensor-Signal Variations Norichika Terao , Mitsutoshi Suzuki <i>Japan Atomic Energy Agency, Tokai-mura, Japan</i>	
10:10 a.m. – 10:30 a.m.	Coffee Break in the Foyer	
10:30 a.m. Abstract #453	Design-Centered Analysis Method for Protection Against the Insider Threat Ruth Duggan, Carol Scharmer , Mark Snell <i>Sandia National Laboratories, Albuquerque, NM, USA</i>	
Noon – 1:30 p.m.	Closing Plenary Speakers' Luncheon <i>(By Invitation Only)</i>	Desert Ballroom 9-10
Noon – 2:00 p.m.	Lunch Break <i>(On Your Own)</i>	



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Thursday, July 18, 2013

Location

2:00 p.m. – 4:00 p.m.

Closing Plenary

Desert Ballroom 7

Panel Discussion on Nuclear Programs Regarding Education and Training

Panelists:



Catherine Haney

*Director, Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission, United States*



James Larkin

*Director of the Radiation and Health Physics Unit
University of the Witwatersrand, South Africa*



Masao Senzaki

*Director Integrated Support Center for Nuclear Nonproliferation and
Nuclear Security
Japan Atomic Energy Agency, Japan*



Klaas van der Meer

*President, ESARDA, and Head, Society and Policy Support, Environment,
Health and Safety
Belgian Nuclear Research Center, Belgium*

Additional Papers:

Abstract # 105

How to Play the Role of a Competent Nuclear Security Personnel?

John, Yuan-Heng Feng
Second Nuclear Power Plant of Taiwan Power Company

Abstract # 225

Utilization of Process Monitoring Data in the Tokai Reprocessing Plant for Future Nuclear Security

Yasuyuki Shimizu, Katsuyuki Yamazaki, Takashi Kimura, Yuji Endo, and Hironobu Nakamura
Reprocessing Technology Development Center, Japan Atomic Energy Agency

Abstract # 362

Development of an Approach for the Creation of a Cyber Security Program for Fuel Cycle Facilities Regulated by the Nuclear Regulatory Commission

Rebecca Richardson, Joseph Rivers, Brian Smith, Alexander Sapountzis, and Larry Harris
United States Nuclear Regulatory Commission, Rockville, MD, USA

Abstract # 595

Romanian Qualification Testing Facility for Type A, B, and C Packages to be Used for Transport and Storage of Dangerous Goods-Class #7 Radioactive Materials

Gheorghe Vieru
Institute for Nuclear Research, Romania

Abstract # 596

Neutron Generating Systems Using Piezoelectric Transformers

E. A. Baxter, S. D. Kovaleski, B. B. Gall, J. A. VanGordon, P. Norgard, and K. M. Olson
Electrical and Computer Engineering, University of Missouri



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