

PATRAM Preliminary Agenda

Sunday, August 4, 2019

12:00 pm – 5:30 pm

Registration Open

5:00 pm – 7:00 pm

Exhibit Hall Grand Opening Reception

Monday, August 5, 2019

6:30 am – 5:30 pm

Registration Open

7:00 am – 8:00 am

Speaker Breakfast

9:00 am – 10:20 am

Welcoming Remarks / Opening Plenary

10:00 am – 4:00 pm

Exhibit Hall Open

10:20 am – 10:40 am

Refreshment Break (in the Exhibit Hall)

10:40 am – 12:00 pm

Plenary Session

12:00 pm – 2:00 pm

Lunch on your own

2:00 pm – 3:20 pm

Concurrent 1 (Technical Session 1)

Session A - Security – Regulatory Issues

#1308 Transportation Safety, Security, and Safeguards (3S) - Conflicts and Synergies

#1159 Perspectives on Regulatory Design and Development for Transport Security of Nuclear and other Radioactive Materials

#1399 The Potential Role of the Department of Homeland Security in the Transportation of Commercial Spent Nuclear Fuel

#1391 IAEA Guidance on Managing the Interface between Safety and Security for Normal Commercial Shipment of Radioactive Material

Session B - Unique UF6 Transport Considerations

#1208 Assessment of Safety Demonstrations Relative to Packages Containing UF6

#1278 Why is Uranium Hexafluoride Not Regulated in a Similar Manner as Radioactive Material with Subsidiary Hazards?

#1396 The Global ID for UF6 Cylinders: 2013-present

#1413 Internal Pressure Evolution of Filled UF6 Cylinders Before Transport

2:00 pm – 3:20 pm

Session C - Structural Analysis I

- #1127 Licensing of a Type B(M)F Radioactive Material Transportation Package by Finite Element Analysis
- #1423 6 m3 Concrete Box Studies
- #1304 Analysis of the Delayed Impacts on the TS-69B Type Dual Purpose Cask in the Event of a Vertical Drop on the Lid-Side
- #1427 Impact Analyses of a New SAFKEG

Session D - Ductile Cast Iron Applications

- #1118 CASTOR® geo Casks and the GNS CLU System - Customized High Capacity Dry Storage Solutions
- #1451 Self-Shielded Boxes for Radioactive Waste Storage and Transport
- #1157 MOSAIK® casks - A Comprehensive Solution for Packaging ILW
- #1372 Use of Ductile Cast Iron for Packaging Outer Shield Vessel

Session E - Global Operational Challenges and Solutions

- #1408 Establishment of a rapid method for the classification of CERN inter-site radioactive transport by measurement of equivalent dose rate
- #1464 Shipment of Irradiated HEU Nuclear Fuel from Nigeria to China
- #1212 The R73 Package: First experience feedback on the transportation of ILW Long Lived (LL) waste from the dismantling of EDF power plants
- #1230 Packaging Inspection Experience of Korea

3:20 pm – 3:40 pm

Break

3:40 pm – 5:00 pm

Concurrent 2 (Technical Session 2)

Session A - Security – Regulatory Issues

- #1158 The International Nuclear Material Transport Security Regime: A Multi-Modal Tapestry of Conventions and Agreements
- #1111 Update on Transport security in France
- #1259 Government and Industry Cooperation to Strengthen Transport Security
- #1113 Improving French Transport Security Inspections

Session B - Unique UF6 Transport Considerations

- #1353 Special Permit Request to the U.S. Department of Transportation for Shipping Twenty-Two Legacy Cold Traps Containing UF6 from Paducah, KY to Richland, WA to Support Content Reclamation
- #1432 Safety Considerations for the Addition of 1S and 2S UF6Cylinder Contents and Air Transport Capability for the Versa-Pac
- #1201 Successful licensing of the new DN30 package for the transport of UF6 and first impressions from its use

Session C - Structural Analysis II

- #1184 Structural Analysis of the Model 9602 Type B Packaging Design for Disused Radiological Sources
- #1303 Analysis of the Behaviors of the TS-69B Type Dual Purpose Cask in a Slap Down Event
- #1133 Substantiation of a Type B(M)F Radioactive Material Transportation Package by Finite Element Analysis
- #1362 Comparison of Thermal Tests Before and After The Free Drop Test of a Radioactive Material Transport Container

Session D - Ductile Cast Iron Applications

- #1387 The Development of a Robust Shielded Box Transport Container
- #1401 Conceptual Design of Robust Shielded Box Transport Container Type B(U) Package design
- #1426 Designing the Robust Shielded Box Transport Container to satisfy the impact performance requirements defined in the IAEA Transport Regulations for Type B Packages
- #1145 CASTOR®30 Years of Experience in Transport Far Beyond Storage: particular challenges for transport & shuttle casks

Session E - Global Operational Challenges and Solutions

- #1247 TN®GEMINI UK fleet: Modernisation, maintenance and life cycle technical services
- #1245 Radiological Protection in Transporting Fissile Material within Refrigerated ISOs
- #1163 Packaging Options for Materials Processed Through the SRNL Mobile Plutonium Facility
- #1266 Storage and Transport of Ion-Exchange Resins

6:30 am – 5:30 pm

Registration Open

7:00 am - 8:00 am

Speaker Breakfast

8:00 am – 8:50 am

Opening Remarks / Morning Plenary

9:00 am – 10:20 am

Concurrent 3 (Technical Session 3)

Session A - Anti-Aging: A Realistic Approach

- #1174 Design and Aging - A New Challenge for License Holders and Users
- #1143 Ageing Management Guide for Dry Storage of Dual Purpose Casks in Switzerland
- #1202 Considerations of ageing of dual purpose cask components for transport after long-term interim storage
- #1251 Investigations on the Long-Term Behavior of Metal Seals for Dual Purpose Casks

Session B - Thermal Analysis I

- #1160 Combustion Simulation of Transportation Package Performance in Severe, Long Duration Fire - Update
- #1307 Temperature and Flow Predictions during the Drying Process of Used Nuclear Fuel Casks
- #1332 Study on Heat Flow Analysis Modeling for Transport Packages with Radial Fins
- #1461 COBRA-SFS Transportation Template Development for UNF-ST&DARDS

Session C - Testing - Routine Transport A

- #1404 Logistics preparation for the Multi-Modal Surrogate Spent Nuclear Fuel Transportation Test using the ENUN 32P cask
- #1382 Modeling and Analysis of Used Nuclear Fuel during Normal Conditions of Rail Transportation
- #1282 Shock Environments for the Nuclear Fuel Transportation System (Transportation Platform, Cask, Basket, and Surrogate Assemblies) during Heavy-Haul Transport and Handling
- #1327 Vibration Monitoring of Nuclear Fuel in Transit

9:00 am – 10:20 am

Session D - Security – Risk Assessment

- #1277 Risk Assessments for Radiological Materials in Transport: Assessing Likelihoods and Consequences
- #1378 Trends and Patterns in the Evolving Threat to Radioactive and Nuclear Material Transportation
- #1441 Insider Quantification and Ranking Process (IQRP) in the Secure Transport of Nuclear, Radiological and other High-Risk Materials
- #1260 Insider Mitigation Strategies for the Radiological Transport Industry

Session E - Emergency Preparedness and Response and Tracking

- #1125 Considerations on Reference Level and Assessments of Radiological Consequences of Emergency during Transport of Radioactive Materials
- #102 Tools to Evaluate Transportation Infrastructure and Emergency Preparedness on Potential Radioactive Materials Shipment Routes
- #1257 The Use of Emergency Exercises to Promote a Culture of Security and Resilience in the Radioactive Material Transport Industry

10:00 am – 4:00 pm

Exhibit Hall Open

10:20 am – 10:40 am

Break

10:40 am – 12:00 pm

Concurrent 4 (Technical Sessions 4)

Session A - Anti-Aging: A Realistic Approach

- #1305 Evaluation of Sealing Performance of Metal Gasket used in Dual Purpose Metal Cask considering Ageing of Metal Gasket under Long-Term Storage
- #119 Ageing Management of DPCs : Some Aspects of Bolted Systems at Packages
- #1375 Composition and Evolution of Sea-Salt Deliquescent Brines on SNF Storage Canister Surfaces

Session B - Thermal Analysis II

- #1108 Combination of analytical and numerical methods for the fast thermal evaluation of transport and storage casks
- #1168 A Computational Fluid Dynamics Modeling Approach for the Design and Optimization of NUHOMS® MATRIX
- #1239 Modeling Comparisons with an Aboveground Dry Cask Simulator
- #1419 Similarity Analysis of Thermal Flow between Prototype and Scale Model for Ventilated Storage Cask

10:40 am – 12:00 pm

Session C - Testing - Routine Transport B

- #1283 Shock Environments for the Nuclear Fuel Transportation System (Transportation Platform, Cask, Basket, and Surrogate Assemblies) during Ocean Transport
- #1280 Shock Environments for the Nuclear Fuel Transportation System (Transportation Platform, Cask, Basket, and Surrogate Assemblies) during Rail Transport
- #1281 Shock Environments for the Nuclear Fuel Transportation System (Transportation Platform, Cask, Basket, and Surrogate Assemblies) during Specialized Rail Tests

Session D - Security – Risk Assessment

- #1248 Vital Area Identification (VAI) in Transport: Countering the Threat from Sabotage
- #1189 Advancement of Dynamic Assessment Methodologies for Transportation Security
- #1376 Applying Immersive Learning Methodologies to the Safety and Security Interface Paradigm for Normal Commercial Shipments of Radioactive Material
- #1149 Radiological Transportation Security Plan Effectiveness

Session E - Emergency Preparedness and Response and Tracking

- #1335 Emergency Preparedness for Spent Fuel Shipments during Loss of Cooling Function in Ships
- #1397 Future Applications for the WNTI Global ID
- #1420 RFID Technology in transportation and storage of nuclear waste : A Review

12:00 pm – 2:00 pm

Lunch on your own

12:15 pm – 1:45 pm

- Panel A - Supply Chain Issues
- Panel B – Changes in Operation

Concurrent 5 (Technical Sessions 5)

Session A - Criticality Analysis I

- #1379 Fuel Relocation Criticality and Shielding Evaluations for High-Burnup Spent Fuel in the ENSA ENUN 24P Cask
- #1340 Criticality codes biases/ uncertainties determination for fissile nuclear material transportation using different approaches
- #1264 Effect of low temperature on criticality calculation for the transport of fissile material
- #1450 Criticality Issues With the 30B Canister with Enrichments Greater Than 5 Wt% U-235

Session B - International Regulations

- #1313 IAEA Transport Regulations - What Has Changed in the Last Two Decades
- #1275 A new edition of the IAEA Transport Regulations: Which consequences and lessons for the industry?
- #1172 Development of the IAEA Safety Guide 'Format and Content of the Package Design Safety Report (PDSR) for the Transport of Radioactive Material
- #1180 Issues in Applying Transport Exemption Levels to NORM

Session C - Anti-Aging Issues II: Corrosion-Testing our Metal

- #1325 A Study on Ageing of a Canister during Long-term Storage: Evaluation of the Influence of temperature difference between Canister Surface and Environment on corrosion
- #1318 Application of Eddy Current Testing to SCC Detection for Canisters in Concrete Cask System
- #1299 Accelerated Corrosion Tests to Evaluate the Long-Term Performance of BORAL® in Spent Fuel Pools
- #1300 5-Year Accelerated Corrosion Testing of MAXUS® for Spent Fuel Pool and Dry Cask Performance

Session D - Loading, Transport, and Performance of Packages and Material

- #1262 Autonomous loading of content in a type B packaging
- #1292 Efficiencies in Procurement and Licensing of Type-B Fissile Package
- #1265 First transport of type B(U) packaging for hotlabs
- #1356 Assessing the Success of Shipping High Burn-Up Sister Rods from ORNL to PNNL

2:00 pm – 3:20 pm

Session E - Aluminum Specific Applications

- #1336 Study for design strength of aluminum alloy as basket materials
- #1316 Development of Aluminum Extruded Alloy for Basket of Transport/Storage Casks (1) - Strengthening mechanism after long term storage and design of chemical composition
- #1331 Development of Aluminum Extruded Alloy for Basket of Transport/Storage Casks (2) Properties and allowable stress of the borated aluminum alloy 1B-A3J04-O
- #1137 Sintering Behavior of Al-B₄C Powder Material and its Phase Evolution during Rolling

3:20 pm – 3:40 pm

Exhibit Hall / Refreshment Break

3:40 pm – 5:00 pm

Concurrent 6 (Technical Sessions 6)

Session A - Criticality Analysis II

- #1435 Development of a Comprehensive Fuel Assembly Criticality Safety Model that Groups Multiple Fuel Assembly Designs as One Content Type for Type AF Packages
- #1178 Criticality studies for transportation of non-irradiated uranium by air in a new type B package
- #1253 Analyses of a Type-B Package with Criticality Control Features
- #1301 Preliminary safety analysis of criticality for concrete cask under dry storage conditions

Session B - International Regulations

- #1285 Lessons Learned from Shipment of Coltan From Nigeria To China
- #1196 The German graded approach for different validity periods of package design approvals
- #1241 Recent developments in the licensing and manufacturing control procedures of DPCs

Session C - Anti-Aging Issues II: Corrosion-Testing our Metal

- #1355 Beyond Aging Management, The Next Steps in Long Term Storage
- #1445 Application of Non-Destructive Testing to Assess Corrosion Damage in Nuclear Material Storage Containers
- #1417 O-ring Lifetime of the SAVY-4000 Nuclear Material Storage Container

3:40 pm – 5:00 pm

Session D - Loading, Transport, and Performance of Packages and Material

- #1173 Cask Loading Performances: Combined Data Mining and Shielding Inequalities
- #1339 INSPECTION WITH UMIS OF LEGACY CONTAMINATED CONTAINERS BEFORE TRANSPORT TO A DISPOSAL OR A TREATMENT FACILITY
- #1326 A Successful and Effective Transportation Program for the Shipment of Type A and Type B Quantities of Radioactive Material
- #1345 ON SITE CONDITIONING OF HIGH LEVEL SPENT EXCHANGE RESINS WITH MERCURE MOBILE PROCESS BEFORE TRANSPORT TO DISPOSAL

Session E - Material Interactions

- #1311 Measurement of the Thermal Accommodation Coefficient between Moist Helium and a Stainless Steel Surface
- #1132 Study of the occurrence of hidden corrosion in packaging steels, exposed to potentially corrosive materials such as resin, compound, or foam, in transport conservative temperature/humidity conditions
- #1210 New Composite Materials for Neutron Radiation Shielding
- #1242 Thermal decomposition of radio-oxidized Polymers and impact on radioactive material transportations
- #1109 Radiolytic Hydrogen Production Associated With Cement Hydrates

Wednesday, August 7, 2019

6:30 am – 5:30 pm

Registration Open

7:00 am - 8:00 am

Speaker Breakfast

8:00 am - 9:20 am

Concurrent 7 (Technical Sessions 7)

Session A - Testing – Thermal

- #1141 Fire reference test for IAEA package thermal testing in a propane gas fire test facility
- #1151 Confirmation of heat removal performance of spent fuel storage and transport metal cask HDP-69B by heat transfer inspection
- #1463 Pipe Overpack Container Fire Testing Program

8:00 am - 9:20 am

Session B - Risk Assessment

- #105 Holistic approach for radiological risk assessment in the transport of radioactive material in Cuba
- #1162 A Research Study to Perform a Risk Assessment of Truck/Trailer Transportation of Radioactive Material in Canada
- #1226 Transportation Risk Assessment - An Early Look at the Canadian Program
- #1258 Cross-Industry Analysis of Approaches to Safety and Risk Management

Session C – Panel C

Knowledge Transfer and Maintaining Competence

Session D - Fissile Material

- #1268 Feedback from IAEA TRANSSC Working Group and Technical Expert Group on Criticality
- #1198 Example for an approval procedure for fissile material excepted according to 417(f)
- #1222 NUREG/CR-7239, "Review of Fissile Material Exemptions and General Licenses in 10 CFR Part 71," and Proposed Revisions to Harmonize with IAEA SSR-6 Fissile Material Requirements
- #1243 The UK's first ever Multiple Water Barrier Package

Session D - External Component Development - Impact Limiters and Cradles

- #1121 The design of nuclear transport frames for fatigue loadings utilizing FEA
- #1279 Impact Limiter Development and New Material Investigation for Spent Fuel Transport Casks
- #1169 Applicability of Rigid Polyurethane Foam to Laying Type Shock Absorber
- #1424 Verification of shock absorber based on 1/2.3 scale model compression tests

9:00 am – 4:00 pm

Exhibit Hall Open

9:30 am - 1:00 pm

Poster Session (See Page 23 & 24)

12:00 pm - 1:20 pm

Lunch on your own

Concurrent 8 (Technical Sessions 8)

Session A – Security – Physical Protection

- #1405 Considerations for the Maritime Transport of Category I Quantities of Fissile Materials
- #1140 Challenges and Experiences on the Performance of the First Security Transport of SNF on Inland Waterways in Germany
- #1414 Multi-modal Challenges in the International Transport of Nuclear and Radioactive Materials (The only interesting parts of a system are the interfaces.)
- #1228 Implementing a Tracking and Intrusion Detection System for Transportation of Type B Packages: Implementation, Benefits, and Lessons Learned

Session B – Shielding and Radiological Analysis I

- #1156 The Importance of Having a Detailed Transport Cask Model and Knowledge of Your Fuel when Predicting Dose before Transport
- #1154 Comparison of shielding calculation codes for used fuels transport/storage casks: Case study with TK-26
- #1319 Dose Equivalent Rate Benchmark Calculations of a Dry Storage Cask for Spent Fuel by 3D Monte Carlo code

Session C – Testing - Accident Scenarios A

- #1433 Drop Tests of the HI-STAR ATB-1T Cask for Radioactive Materials
- #1249 1648C impact validation and verification to use for HELIOS
- #1218 Testing of the New General Purpose In-Glovebox Container
- #1393 Regulatory Testing of a Type B Shipping Container for NCT and HAC

Session D – Thinking Ahead Amidst Uncertainty: The Programmatic Perspective

- #1418 Making the Case: Demonstrating the Integrity of Spent Nuclear Fuel During Long-term Storage and Subsequent Transportation
- #1449 Technical Issues That Need to be Addressed in Preparing a Large Program to Transport Spent Nuclear Fuel and High-level Radioactive Waste
- #1448 A Review of U.S. DOE Activities to Manage, Package, Transport and Dispose of DOE Spent Nuclear Fuel
- #1366 High Burnup Spent Fuel Dry Storage Research Project

1:20 pm - 2:40 pm

Session E – General Cask Operations

- #1124 Helium Leak Testing Requirements and Experiences on Transport and Storage Casks for Interim Storage in Switzerland
- #1306 NFT's Approach of Preservation and Improvement of Technical Skills in Cask Maintenance: Implementation of Education and Training Program for Cask Maintenance Using the Mock-up of NFT Cask
- #1385 Fleet of Type B packaging for low level radioactive waste shipments
- #1165 Development of the Operations and Maintenance Manual for the Mk-18A Onsite Transfer Cask

2:40 pm - 3:00 pm

Break

3:00 pm - 4:20 pm

Concurrent 9 (Technical Sessions 9)

Session A - Security – Physical Protection

- #1390 Next-Generation Data Distribution for Transportation Security
- #1437 Performance Testing in the Secure Transport of Nuclear, Radiological, and other High-Risk Materials
- #1134 Enhancing Mobile Radioactive Source Security Through Technological Solutions
- #1468 Advancing the Transportation-Security, Tracking and Reporting System (T-STAR)

Session B – Shielding and Radiological Analysis II

- #1273 Radiation protection studies regarding the transportability of secondary source assemblies with a TN13/2 shipping cask.
- #1205 External dose rate analysis of the new DN30 package for the transport of UF₆
- #1186 Shielding Analysis of the Model 9602 Type B Packaging Design for Disused Radiological Sources
- #1358 Verification of the Depletion Calculations in the SNF Code Against the Polaris and TRITON Modules for Swiss BWR Fuel Assemblies

Session C - Testing - Accident Scenarios B

- #1177 9981 Type AF Shipping Container Testing
- #1176 Design Assessment by BAM of a New Package Design for the Transport of SNF from a German Research Reactor
- #1272 Respirable Release Fraction Measurement Chamber (RRFMC)
- #1452 Introduction of Testing Ability of Radioactive Material Transport Container in CIRP

3:00 pm - 4:20 pm

Session D – Thinking Ahead Amidst Uncertainty: The Programmatic Perspective

- #1365 The Case for Transportation of High Burnup Fuel
- #1131 Nuclear Plant Shutdown: a Challenge for the Competent Authority
- #1148 CNSC’s Regulatory Efforts for Improvement in Response to Transport Related Incidents
- #1388 Deep Isolation: Innovative Technology for the Storage and Disposal of High Level Waste and Spent Nuclear Fuel

Session E - General Cask Operations

- #1444 Lessons Learned of Bringing a Type B cask On-Line
- #1334 Study on shortening vacuum drying time by heating with external heater
- #1373 Measurement of Gamma Dose Rates on Packages Loaded With Spent Fuel Assemblies
- #1179 Orano’s expertise providing Pool Cleanout Equipment Services for operating and decommissioned nuclear power plants

4:30 pm – 5:20 pm

Remarks / Plenary Session

Thursday, August 8, 2019

6:30 am – 5:30 pm

Registration Open

7:00 am - 8:00 am

Speaker Breakfast

8:00 am – 8:50 am

Opening Remarks / Morning Plenary

9:00 am – 4:00 pm

Exhibit Hall Open

9:00 am – 10:20 am

Concurrent 10 (Technical Session 10)

Session A - Package Design IA

- #1256 Use of Aluminum as an ASME Code Material for Shielding and Criticality Safety Applications
- #1330 Design of the Defense Programs Package 3 (DPP-3)
- #1166 OPTIMUS™ Packaging for Intermediate Level Wastes
- #1217 A new Type B(U) Fissile, flexible multi-size cask solution to your fuel transport requirements

Session B - Security – (i) Cybersecurity / (ii) Response

- #1415 The World Nuclear Transport Institute’s (WNTI): an overview of our current work on Transport Security issues.
- #1270 Effectiveness of Transportation Security Approaches
- #1439 Bridging the Gap between Cyber and Physical Security
- #1371 Cyber and Global Positioning System Vulnerabilities and Mitigation Strategy for Radiological Transport Vehicles

9:00 am – 10:20 am

Session C - Structural Analysis III

- #1138 Numerical Approach to Determine a Package Dependent Bar Length for the IAEA Pin Drop Test
- #1200 Stress Wave Propagation with Finite Element Mesh Transitions
- #1209 Fracture Mechanical Analysis of a Cylindrical Cast Iron Cask
- #1322 Phenomenal Understanding on Drop Impact in Accidental Conditions

Session D - Container and Content Specific Safety Aspects

- #1235 Developing new uses for end of life packaging: a sustainable approach for cost effective transport solutions
- #1175 WAGR 6m3 Boxes, Re-license as IP-2 Transport Package under IAEA SSR-6 Transitional Arrangements
- #1229 NUHOMS® HSM MATRIX for Centralized Interim Storage of a variety of Spent Fuel Canisters
- #1263 NUHOMS® System for Storage and Transportation of VVER Fuel

Session E – Guidance

- #1288 The Transport Container Standardization Committee Codes of Practice
- #1455 The Role of Voluntary National Consensus Standards in the Transport of Radioactive Material in the United States
- #1130 ISO STANDARD AND IAEA GUIDANCE MATERIAL FOR PACKAGE LOAD ATTACHMENT POINTS - Current Approaches and Developments
- #1456 NUREG-1660, Rev. 1, U.S.-Specific Schedules of Requirements for Transport of Specified Types of Radioactive Material Consignments

10:20 am – 10:40 am

Refreshment Break (in Exhibit Hall)

10:40 am – 12:00 pm

Concurrent 11 (Technical Sessions 11)

Session A - Package Design IB

- #1238 UK's First Licensed MWB Package - M4/12 UFC MK-III
- #1392 New Innovative Packaging
- #1213 The R80 Package: A new Type B(U), Type A & Industrial package for multiple radioactive waste streams
- #1465 The Use of Chartek 7 Intumescent Coating to Provide Thermal Protection to Transport and Storage Packages for Radioactive Materials

10:40 am – 12:00 pm

Session B - Security – (i) Cybersecurity / (ii) Response

- #1261 Response Strategies for Radiological Material During Transport
- #1112 Transport security exercises evolution
- #1267 Using Technologies to Enable Response to Transport Events
- #1467 Detecting Removal of the Authenticatable Container Tracking System (ACTS) from a Container or Conveyance

Session C - Component Simulation

- #1171 Numerical simulation of HELICOFLEX® metallic seals ageing mechanism for spent fuel cask
- #1294 Verification of factors affecting load of metal gasket
- #1295 Study for dynamic behavior of shock absorbing material: effect of numerical material models
- #1350 The Effects of Simplified Impact Limiter and Lid Arrangement on Decelerations During Cask Drop Scenarios

Session D - Container and Content Specific Safety Aspects

- #1329 The NAC LWT for Research Reactor Spent Fuel Shipments
- #1348 Revision to the DOE Approved NAC-LWT Safety Analyses in Packaging for Shipping Argonne Sodium Bonded Mixed Fission Products as Authorized Contents
- #1347 Revisions to the DOE Approved NAC-LWT Safety Analyses Report to Support Shipment of the CEUSP Materials
- #1328 Type B Packaging for Tritium Transport

Session E – Guidance

- #1128 Requirements for management systems for manufacturing of transport packages: the new revision of BAM-GGR 011 guideline
- #1250 French requirements for the design, manufacture and use of bolts and screws equipping packages for the transport and storage of radioactive material
- #1297 Status of the ASME Guidance Document on Computational Modeling for Explicit Dynamics
- #1458 Negative effects of using transport definition classifications of radioactive material in lieu of impact assessments

12:00 pm – 2:00 pm

Lunch on your own

12:15 pm – 1:45 pm

Panel D – Security Application of International Requirements and Guidance

Concurrent 12 (Technical Session 12)

Session A - Stakeholder Engagement and Communication for Effective Transport A

- #1462 Previous DOE Transportation Acquisition Efforts for Spent Fuel Shipments: An Analysis of Comments Received on Contract Structure
- #1416 Transport of Radioactive Material: Regulations and Industry Good Practice Guides, the winning combination.
- #1438 Maintaining the flow: international cooperation to help address denial of shipment of radioactive material
- #1431 The Role of Indian Tribes in the Safe, Secure, and Routine Transportation of Spent Nuclear Fuel and High-Level Radioactive Waste

Session B - Thermal Package Analysis

- #1161 Thermal Analysis in Spent Nuclear Fuel Cask
- #1185 Thermal Analysis of the Model 9602 Type B Packaging Design for Disused Radiological Sources
- #1195 Improved Models for Foam Degradation during Thermal Hypothetical Accident Conditions
- #1360 Thermal-Fluids Analyses of Model 9977 and 9975 Shipping Packages Under Normal and Hazard Analysis Conditions

Session C - Containment Design A

- #1466 Designing Package Closures that are Easy to Test with High Confidence: A few obscure principles that affect the leak tester, and examples of closures that are easy to test, and a few that are not.
- #1147 Application of leakage rates measured on scaled cask or component models to the package containment safety assessment
- #1386 Containment Vessel Closure Mechanism with Simplified User Torque Requirements

Session D – National Implementation Approaches

- #1150 Canada's Regulatory Approach to the Transportation of Radioactive Materials
- #1221 Revisions to Harmonize the Type B and Fissile Material Package Requirements with the Current International Transportation Regulations
- #1290 Inspection programme of the Belgian competent authority (FANC) for non-approved and approved package designs

2:00 pm – 3:20 pm

Session E - Transport Logistical Challenges

- #1117 Case Study for the Coordination of Multiple Transports of Irradiated Fuel from Finland to Sweden and Belgium as well as Final Disposal Following Post-Irradiation Examination
- #1181 Transport of large contaminated NPP components to a dedicated facility for treatment aiming for recycling of the material
- #1346 At-Reactor Conditions Affecting the Transportation of SNF from US Commercial Nuclear Sites
- #1136 Preliminary Evaluation of Removing Spent Nuclear Fuel from Nuclear Power Plant Sites - Oyster Creek Site Visit

3:40 pm – 5:00 pm

Concurrent 13 (Technical Session 13)

Session A - Stakeholder Engagement and Communication for Effective Transport B

- #1276 How to do it right: U.S. Western State perspectives on highly radioactive materials transportation
- #1286 The maritime transport, a big challenge for class seven
- #1342 Clearing Muddy Waters

Session B – Radiolysis

- #1139 Expanding the boundaries of the explosion risk assessment for H₂/O₂/N₂ mixtures in conditions relevant to nuclear waste transportation
- #1357 Transportation of radioactive waste containing organic materials: new methodology based on oxygen consumption
- #1354 Estimating Hydrogen Gas Concentration in the Void Spaces of Type AF Radioactive Material (RAM) Transport Packages

Session C - Containment Design B

- #1271 A350 LF5 Cl2 a convenient material for containment of type B package
- #1389 The Off-Site Source Recovery Program's Special Form Capsule: Making Radioactive Material Sealed Sources Easier and Safer to Ship
- #1274 Mastering Requirements on Containment Boundary

3:40 pm – 5:00 pm

Session D - National Implementation Approaches

- #1428 Lessons learned from the project concerning the revision of the Belgian legislation for the transport of radioactive material and from the first year of implementation of the new regulatory framework
- #1364 Radiation Protection Management for Category I Materials Transport
- #1434 The Approach of the Environmental Consequences and Potential Impacts During Transport of Radioactive Materials (RAM)-A Challenge

Session E - Transport Logistical Challenges

- #1457 Initial Site-Specific Studies for Removing SNF from Shutdown Sites
- #1351 Challenges for international transport with overweight and oversize transport packages
- #1421 Fissile Material Minimization through Packaging & Removal of Weapons Usable Plutonium Fuel Materials

6:00 pm – 7:00 pm

Closing Reception (Invitation Only)

7:00 pm – 10:00 pm

Closing Banquet

Friday, August 9, 2019

7:00 am – 1:00 pm

Registration Open

7:30 am - 8:30 am

Speaker Breakfast

8:40 am – 10:00 am

Concurrent 14 (Technical Sessions 14)

Session A - Package Design IIA

- #1223 TN MW IRE : an application for fissile material of TN MW family
- #1182 Overcoming design and licensing challenges -The B(U)F flask TGC27
- #1443 Conversion of Type A Fissile Packaging to Type B Packaging
- #1164 Design, Testing, and Certification of a Type-A Shipping Package for the Mk-18A Program

Session B – Education

- #1126 Graduate Certificate in Nuclear Packaging at the University of Nevada, Reno
- #1191 ASME Pressure Vessel Code for Nuclear Transport and Storage
- #1192 Quality Assurance for Radioactive Material Packaging
- #1193 Nuclear and Other Radioactive Materials Transport Security

8:40 am – 10:00 am

Session C - Collaboration in Maritime and Rail Transportation

- #1220 Collaborative delivery of complex multi modal transport solutions
- #1188 Transportation of Waste in Rail Casks as a Precursor to Used Nuclear Fuel Shipments to Consolidated Interim Storage
- #1343 Mixed Load Transportation
- #1453 Preliminary Efforts Related to 8-Axle Rail Car Design for Transporting Spent Nuclear Fuel

Session D - Basic Radionuclide Values

- #1368 Review of the A1 and A2 values: development, progress and outcome
- #1407 Review of the Q-System using Monte-Carlo Simulations
- #1403 Review of the A1 and A2 values: an overview of the new calculation method

Session E - Packaging Licensing and Design Issues

- #1129 GE Model 2000 Transport Package - Past, Present, and Future
- #1167 Cadmium Rod Cask Compliance and Shipment Readiness
- #1333 Development of transportation and storage cask holder with high seismic resistant
- #1369 Transport and storage solutions for defective spent fuel

10:00 am - 10:20 am

Refreshment Break (outside General Session Room)

10:20 am - 11:40 am

Concurrent 15 (Technical Sessions 15)

Session A – Package Design IIB

- #1214 The R82 Package: A new Type B(U) Fissile Package for Fast Neutron Reactor Spent Fuels Transportation in the UK
- #1240 Benefits of INS Integrated Criticality Intelligent Customer
- #1459 The increasing role of the manufacturer in an optimized design process
- #1203 ENUN Cask: A success history

10:20 am – 11:40 am

Session B – Education

- #1359 Nuclear Security Education and Training Capacities Development at the University of Port Harcourt: Outcomes and Prospects
- #1269 Assessing Training Needs for the Radiological Transport Industry
- #1233 Human and organizational factors in the transport of radioactive materials
- #1246 While SSR-6 covers what must be done to ensure the safety of spent fuel during transport, it does not explain how compliance can be demonstrated

Session C – Collaboration in Maritime and Rail Transportation

- #1337 Building of the new low level radioactive-waste transporting ship
- #1400 Ship building plan for radioactive material transport in NFT
- #1395 Maritime Back End Transport - First shipment of OPAL Spent Fuel from Australia to France - Overview of a successful operation
- #1412 Multimodal Transport of 48Y Cylinders with BTPs on Flat Racks or not - Which is more cost effective?

Session D – Basic Radionuclide Values

- #1409 The Effect of Shielding on A1 and A2 values
- #1315 Recalculation of activity concentration limits for an exempt material and activity limits for an exempt consignment prescribed in the IAEA Regulations for the Safe Transport of Radioactive Material by BRACCS code
- #1422 Bridging Science and Practice: The A1/A2-Recalculation-Group

Session E – Packaging Licensing and Design Issues

- #1204 Design Assessment of a dual purpose cask for damaged spent nuclear fuel
- #1341 Challenges with transports of High Activity sources
- #1183 Design Life Extension of the SAVY-4000 Series Containers
- #1470 Transport of radioactive wastes containing fissile material

11:40 pm - 1:00 pm

Lunch on your own

1:00 pm - 2:20 pm

Concurrent 16 (Technical Sessions 16)

Session A - Package Design IIIA

- #1320 TN® Lab: addressing the need for shipping radioactive sources and irradiated samples by making the design and licensing process more effective
- #1120 Transport of High Activity Isotopes in the BEA Research Reactor Package
- #1254 Dual 3013 Metals Carrier Assembly
- #1115 Oversized ISO Freight Container designed to be used as an IP-2 Transport Package

Session B – Communication and Training

- #1370 IAEA SSR-6 Transport Regulations; E-Learning Platform
- #1206 Public information in France concerning the transport of radioactive materials
- #1436 Designing tools to communicate the everyday global transport of radioactive materials
- #106 Building Public Understanding of Transporting Spent Fuel by Rail in the United States: Lessons Learned from a Routing Workshop

Session C - Onsite Management and Control

- #1219 DOE Complex Site-Specific Transportation Safety Documents (TSDs)
- #1321 Experience on general safety requirements for on-site transports
- #1446 An agile transport system enabling a significant mission change
- #1227 Current Onsite Equivalency State at SRS

Session D – Testing - Handling Accident

- #1380 Modeling and Analysis of a One-Third Scale Used Nuclear Fuel Package 30 cm Drop
- #1384 Horizontal 30 cm Drop Test of 1/3 Scale ENSA ENUN 32P Dual Purpose Cask
- #1211 Study of the mechanical consequences of HAC drops for R72 and R73 radioactive material transport packages without impact limiters while handled on operating sites
- #1255 ZPPR Plates Structural Performance in HAC

Session E - Panel E - Security I

2:20 pm – 2:40 pm

Refreshment Break (outside General Session)

2:40 pm – 4:00 pm

Concurrent 17 (Technical Sessions 17)

Session A – Package Design IIIB

- #1215 The R83 Package: A new Type B(U) Fissile Package for Research Reactor Spent Fuels Transportation in the Netherlands
- #1252 Conversion of 9978 Packagings to 9977s
- #1302 The Development of the TS-69B Cask for Transport and Storage of Spent Nuclear Fuel
- #1244 The Pros and Cons of using legacy RAM Transport Packages and Equipment for the transport, storage and disposal of nuclear material it was not originally designed for

Session B – Communication and Training

- #1310 WNTI: An overview of our current work on back end transport issues and the upcoming challenges facing our industry
- #1363 Using of web-technologies in development of Information system for certificates of approval for design and transportation of packages with radioactive materials
- #1447 RAMTUC - 50 years young

Session C – Criticality Issues for Spent Nuclear Fuel

- #1425 Successful Application and Development of a Burn-Up Credit Methodology For Use in a UK Transport Criticality Assessment
- #1231 Evaluation of the Embrittlement of Nuclear Claddings Following Multiple Transportations
- #1344 Implementation of burnup credit methodology on Orano TN's new generation transport casks
- #1197 Assessment of a peak reactivity based BWR burnup credit approach for transport casks

Session D – Panel E - Security II

Session E - Panel F - Industry Perspective

Symposium Adjourns

4:00 pm

Posters

- #107 Research on the Use of New Tracking Technologies for Category 2 and 3 Radioactive Sealed Sources
- #1110 The 1105-SD for Transport of Shielded Devices and Sources
- #1114 $^{10}\text{B}(n, \alpha)^7\text{Li}$ Reaction-Assisted Corrosion of Al-B₄C Metal Matrix Composite Neutron Absorber Irradiated in Spent Nuclear Fuel Pool
- #1116 Investigating the Dependence of Hydrogen and Oxygen Generation from High-Purity Plutonium Oxides in Sealed Containers
- #1123 Development of Bonding in AA1050 AA5754 and AA6061 Aluminum Alloys used as Cladding Materials
- #1142 Testing of a dual purpose cask for high radioactive waste of German research reactors
- #1153 ETMF : A new Package Design for transport Fissile Material
- #1170 Council Directive 2006/117/Euratom of 20 November 2006 on the supervision and control of shipments of radioactive waste and spent fuel: Impact on EU and non-EU countries, Brexit
- #1187 Geofence System for ARG-US TRAVELER during RAM Shipment
- #1190 Degradation of sPVC and Aromatic Polyether Urethane Bags Used in Nuclear Applications.
- #1216 ROBATEL Industries recent package designs for spent fuels
- #1224 Evaluating Corrosion of Nuclear Material Storage Containers and the Impact on Container Lifetime
- #1225 ARG-US Wireless Sensor Network for Critical Facilities
- #1232 Licensing the UK's First Ever Multiple Water Barrier Package
- #1234 Use of 3D Scanning Technologies and Virtual Reality to Validate Transport Operations Interfaces
- #1249 1648C impact validation and verification to use for HELIOS
- #1287 Design modifications to the HS Safkeg 3977A Package to allow transportation of Molybdenum 99 contents
- #1293 Safety Reviews of Transport Container of Radioactive Sources
- #1298 Fire tests of RAM packages and containers under high thermal loads
- #1301 Preliminary safety analysis of criticality for concrete cask under dry storage conditions
- #1317 Conceptual study on thermal analysis for disposal Conceptual study on thermal analysis for disposal system of spent nuclear fuel
- #1361 Coordination of Interagency Action in the Transport of Nuclear Material in East Africa
- #1367 The Work of The IAEA TRANSSC Special Working Group On A₁ and A₂ Values
- #1374 Dynamic impact tests on materials& components of RAM packages - Advanced experimental and measurement methods

Posters

- #1377 Validation of Shielding Calculations on the Optimization of IAEA Dual Purpose Cask
- #1381 Evaluation of neutron flux of a PWR dry storage cask
- #1383 Specific Considerations for the Failure Evaluation Measures of SNF Cladding during the Transportation
- #1394 Review of dose criteria for transportation of packages in Korea
- #1398 Burnup in UO₂ Material and its Integrity in the interim of Irradiation
- #1402 Review of the A₁ and A₂ values: Impact of All Radiations on Q_A and Q_B
- #1406 Tip-over analysis of the 14OFA PWR fuel assembly
- #1410 Type C Package Design - Regulatory Impact Test Experimental And Engineering Process
- #1411 Ongoing Activities in Spent Fuel Management at the IAEA
- #1429 Features and Capabilities of the Burn-up Code MOTIVE
- #1430 Experimental Determination of Resuspension from Surface Contaminated Objects in Severe Mechanical Accident Conditions and Conclusions Regarding Transport Safety
- #1442 Thermal Aging of Polyurethane Foam for 9977 Shipping Package
- #1469 Seventy-Five Years of Nuclear Criticality Safety Document-A Bibliography