

**Proceedings of the 9th International Conference on the  
Radioactive Materials Transport and Storage  
RAMTRANSPORT 2012  
22-24 May, 2012  
Kensington, London, United Kingdom**

**Day 1, 22nd May 2012**

13:00–13:30	Registration (for those attending the technical visit), Department of Materials, Royal School of Mines, Prince Consort Road, South Kensington Campus, SW7 2AZ
13:30–14:00	Introduction to Imperial College
14:00–16:30	Conference Technical Visit* (Open to all delegates)
Imperial College, Kensington Campus, London	
17:00–19:00	Drinks reception (Open to all delegates), Lowther Lodge, Royal Geographical Society, Kensington, London

**Day 2, 23rd May 2012 Conference Ondaatje Theatre, Royal Geographical Society, Kensington, London**

08:00–09:00	Registration
09:00–09:10	Chairman's introduction, Gerry Holden CEng MNucl, ONET Technologies UK

**Session 1 Regulation and Standards 1**

**Chair:** Gerry Holden, CEng MNucl ONET Technologies UK

**Co-chair:** Dr. Bernhard Droste, BAM Federal Institute for Materials Research and Testing

09:10–09:30	RAM45	Stowage and Retention of Radioactive Packages during Transport: Which rules should be acceptable?, Bruno Desnoyers, Areva NC–TNI	3
09:30–09:50	RAM40	Revision of TCSC 1006 The Securing/Retention Of Radioactive Material Packages On Conveyances, David Windley, ONET Technologies UK	4
09:50–10:10	RAM3	Approach to the Use of Acceleration Values for Packages of Radioactive Material under Routine Conditions of Transport, Andreas Apel, BAM Federal Institute for Materials Research and Testing	5
10:10–10:30	RAM22	Industry standards for RAM transport: a big plus in a global village, Michel Hartenstein, TN International (AREVA Logistics BU)	6
10:30–10:35		Question and Answer Session	
10:35–11:00		Refreshment break	

**Session 2 Design and Technology 7**

**Chair:** Chi-Fung Tso, Arup

**Co-chair:** Anindya Sen, Office for Nuclear Regulation

11:00–11:20	RAM7	The use of FE modelling to influence and substantiate design changes to an existing nuclear transport package, Anastasia Lloyd-Wallis, National Nuclear Laboratory	9
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11:20–11:40	RAM27	Methodological Aspects for FE Modeling of Lid Systems of Type B(U) Packages, Konrad Linnemann, BAM Federal Institute for Materials Research and Testing	10
11:40–12:00	RAM51	TN NOVATM Airplane crash test, Olivier Roulleaux Dugage, AREVA TN International	11
12:00–12:20	RAM41	Safety Assessment Aspects of Type B(U) Packages Containing Wet Intermediate Level Waste, Dr Marko Nehrig, BAM Federal Institute for Materials Research and Testing	12
12:20–12:40	RAM25	Leak tightness of FKM O-rings for the transportation of radioactive material, Dr Sébastien Momon, TN International (AREVA Logisitics BU)	13
12:40–13:00	RAM50	Transport Condition Effects on the Sealing System and Activity Release within Spent Fuel Transport Casks, Dr. Ing. Annette Rolle, BAM Federal Institute for Materials Research and Testing	14
13:00–13:05		Question and Answer Session	
13:05–14:05		Lunch	
<b>Session 3 Operations</b>			<b>15</b>
<b>Chair:</b> Betty Bonnardel-Azzarelli, World Nuclear Transport Institute			
<b>Co-chair:</b> Alastair Brown, International Nuclear Services (INS)			
14:05–14:25	RAM20	“Holistic Approach” for Licensing Transport/Storage Metal Casks for Spent Nuclear Fuel, Toshiari Saegusa, CRIEPI	17
14:25–14:45	RAM33	New lease-of-life for used casks, Michel Hartenstein, TN International (AREVA Logisitics BU)	18
14:45–15:05	RAM55	Transportation of damaged nuclear fuels, Lisa Martin, AREVA NC–TNI	19
15:05–15:25	RAM38	RD26 packaging: a new solution for plutonium transportation, Sébastien Le Foulgoc, AREVA TN International	20
15:25–15:45	RAM56	Transport of smaller radioactive packages – Excepted, Type-A, IP2, Stephen Clegg, Top Speed Couriers Limited	21
15:45–15:50		Question and Answer Session	
15:50–16:15		Refreshment break	
<b>Session 4 Design and Technology</b>			<b>23</b>
<b>Chair:</b> Edmund Morgan-Warren, Nuclear Institute			
<b>Co-chair:</b> Toshiari Saegusa, CRIEPI			
16:15–16:35	RAM1	Ageing effect on non-metallic materials used within RAM packages, Colin Turner, International Nuclear Services (INS)	25
16:35–16:55	RAM18	Experiences by German authority with safety case approach for welding seams as part of SNF transport package containments, Dr. Martin Neumann, BAM Federal Institute for Materials Research and Testing	26
16:55–17:15	RAM58	Material selection, development of the weld process and equipment, and the testing on the weld & primary seal to to minimize cost of storage, Luke Anderson, NFT	27
17:15–17:35	RAM30	Influence of moisture content on mechanical behavior of wood filled impact limiter & quality surveillance during manufacturing, Germar Eisenacher, BAM Federal Institute for Materials Research and Testing	28

17:35–17:55	RAM29	Mitigation of hydrogen risk in storage and transportation casks: an overview of H2 getting systems, Delphine Thibault, AREVA NC–TNI	29
17:55–18:00		Question and Answer Session	

**Conference Dinner, The May Fair Hotel, Stratton Street, London, W1J 8LT**

19:30		Drinks reception, Atrium & Mezzanine	
20:30		Conference Dinner, Danzinger Suite	
		After Dinner Speaker: Circumnavigating the world along the line of 50 degrees North, Spike Reid, Adventurer	

**Day 3, 24th May 2012**

**Session 5 Design and Technology 31**

**Chair:** Peter Purcell, International Nuclear Services (INS)

**Co-chair:** Anthony Cory, International Nuclear Services (INS)

09:00–09:20	RAM12	Criticality Aspects of the Transport of Legacy Spent Fuels, Michelle Nuttall, Sellafield Ltd.	33
09:20–09:40	RAM43	Simplified approach to study fuel pin rupture risks by bending or euler buckling, Aravinda Zeachandirin, TN International (AREVA Logisitics BU)	34
09:40–10:00	RAM24	Internal cask-content-collisions during drop test of transport casks for radioactive materials, Thomas Quercetti, BAM Federal Institute for Materials Research and Testing	35
10:00–10:20	RAM14	Design and Build of an IP-2 Transport Packaging for a AGR Gas Circulator, Gerry Holden CEng MNucl, ONET Technologies UK	36
10:20–10:40	RAM34	3578: New package to transport category one material, Benjamin Acker, International Nuclear Services (INS)	37
10:40–10:45		Question and Answer Session	
10:45–11:15		Refreshment break	

**Session 6 Operations 39**

**Chair:** Betty Bonnardel-Azzarelli, World Nuclear Transport Institute

**Co-chair:** Stephen Clegg, Top Speed Couriers Limited

11:15–11:35	RAM31	Much more than just Emergency Response – Integrating Incident Management and Business Continuity, Alan Bacon, International Nuclear Services (INS)	41
11:35–11:55	RAM42	Ship transport to Japan – What can be learned from the Tsunami of 11th March 2011?, Alastair Brown, International Nuclear Services (INS)	42
11:55–12:15	RAM48	Thermal Assessment of TN28VT Flasks carrying Vitrified Residue while under Transport in the Pacific Grebe, Darrell Egarr, MMI Engineering Ltd.	43
12:15–12:35	RAM54	Transport: the industry’s weakest link. A risk management approach, Veronique Baylac-Domengetroy, AREVA NC–TNI	44
12:35–12:55	RAM61	Emergency response and preparedness for transport, Marc Flynn, World Nuclear Transport Institute	45

12:55–13:15	RAM62	Industry experience in Safety and Security, Henry-Jacques Neau, World Nuclear Transport Institute	46
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13:20–14:20		Lunch	
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	RAM4	Aspects of Quality Assurance within Experimental Testing of Containers and Packages for Radioactive Material, Dr Karsten Müller, BAM Federal Institute for Materials Research and Testing	47
	RAM6	Assessment of Ductile Cast Iron Fracture Mechanics Analysis within Licensing of German Transport Packages, Dr.-Ing. Steffen Komann, Federal Institute for Materials Research and Testing	48
	RAM10	Codes for Construction of Spent Nuclear Fuel Storage Facilities in Japan, Toshiari Saegusa, CRIEPI	49
	RAM13	Denial of Transport of NORM, Ulric Schwela, Technical Promotion Officer, Tantalum-Niobium International Study Center (T.I.C.)	50
	RAM23	Influence of dense near-surface reinforcement layers in concrete slabs of test stand foundations on the load in storage test casks, Dipl.-Ing. Mike Weber, BAM Federal Institute for Materials Research and Testing	51
	RAM32	New generation for spent fuel transportation casks, Laurent Mitchells, TN International (AREVA Logisitics BU)	52
	RAM36	Numerical Investigation of a Complex Slap-down Drop Test, Dr Ing Linan Qiao, BAM Federal Institute for Materials Research and Testing	53
	RAM37	Preparation of a Packaging Repair Guide, Gerry Holden CEng MNucl, ONET Technologies UK	54
	RAM44	Standards and Guidelines for the Design of Trunnions of RAM Transport Packages, Christian Kuschke, BAM Federal Institute for Materials Research and Testing	55
	RAM65	Industry Codes of Practice for the Safe Transport of Radioactive Material in the United Kingdom, Neil Carr, Transport Container Standardisation Committee (TCSC)	56
	RAM60	Waste and Spent fuel transport, Peter Purcell, World Nuclear Transport Institute	57
	RAM63	Good Practice Guide to Thermal Analysis and Testing of Transport Packages, Chris Fry, Serco	58
	RAM64	Revision of TCSC 1087 Good Practice Guide–The Application of Finite Element Analysis to Demonstrate Impact Performance of Transport Package Designs, Chi-Fung Tso, Arup	59
	RAM52	Transport and Logistics as a Critical Enabler to the NDA Strategy, Steve Dutton, International Nuclear Services (INS)	60
	RAM57	Understanding the evolution of wastefoms over time and the structural integrity of waste packages, Andrew Howarth CEng MIMechE, National Nuclear Laboratory	61
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RAM67	Development of robust waste packages for Intermediate Level Waste, Bob Vaughan, Croft Associates Ltd.	63
RAM17	Dynamic compression tests on damping materials, Robert Scheidemann, BAM Federal Institute for Materials Research and Testing	64
RAM35	Numerical Analysis of Bolted Trunnion Systems of Type B(U) Packages, Dr Jens Sterthaus, BAM Federal Institute for Materials Research and Testing	65
RAM68	Thermal Assessment of TN28VT Flasks carrying Vitrified Residue while under Transport in the Pacific Grebe with a Loss of Ventilation Cooling, Darrell Egarr, MMI Engineering Ltd.	66

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**Chair:** Anindya Sen, Office for Nuclear Regulation

**Co-chair:** Mike Turner, Office for Nuclear Regulation

15:20–15:40	RAM16	Development of an IAEA guidance for an integrated safety case for spent nuclear fuel transport and storage casks, Dr. Bernhard Droste, BAM Federal Institute for Materials Research and Testing	69
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16:00–16:05		Question and Answer Session	
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**Chair:** Michel Hartenstein, TN International (AREVA Logistics BU)

**Co-chair:** Gerry Holden, ONET Technologies UK

16:20–16:40	RAM15	Development of a System for The Transport of Spent Fuel, HLW, and Plutonium from Centralised Packaging Facility to a Geological Disposal Facility	73
16:40–17:00	RAM9	Casks for transportation of waste materials sensitive at radiolytic and thermal decomposition, Françoise Gendreau, AREVA Back End Logistics–TN International	74
17:00–17:20	RAM26	Liquid waste transports and packaging solutions, Jean Pavageau, CEA and Delphine Labroche-Moretti, TN International (AREVA Group)	75
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