

**Dedicated to the safe,
secure, efficient and
reliable transport of
radioactive materials**

**WNTI
TODAY
2019**



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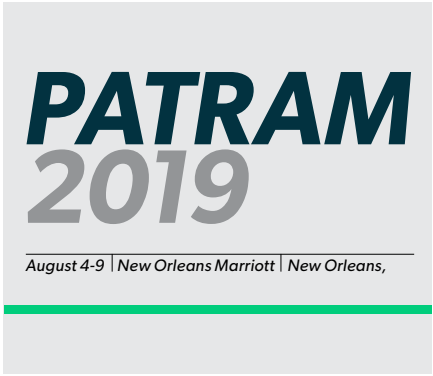
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DAVID
OHAYON

Chairman's Message

It was good to see so many member representatives at our 20th Anniversary event. As someone involved in WNTI for several years, I have seen how the organisation has grown and how we are able to develop solutions to the practical issues faced by our industry.



One of the key themes coming from the strategy is to further develop the membership. Many of our members will be aware of the worldwide construction plans for nuclear power plants, mainly in new and emerging regions.

As the 'Voice of the Nuclear Transport industry', we will need to extend our reach to incorporate members from these new regions. We have held Workshops and Seminars in these regions in recent years and we plan for this to continue. Our latest seminar, supported by several member companies, was held in

company in China, we expect to have several more given the major plans and progress of Nuclear in China. To facilitate this we now have an MOU with the China Nuclear Society and we are working with our regional representative to make further progress.

We are assessing potential E-learning packages that can be accessed from the upcoming new website, as well as specific seminars and workshops, such as the Security Workshop, which took place alongside the SAMM event in December. Finally, we of course need to continue to develop the WNTI

It certainly was appropriate that we had 'time out' to celebrate our combined work over the last 20 years. To be able to do this at the heart of the UK Government (the House of Commons) and to celebrate in the evening along the River Thames was fitting for an organisation which has its origins in London.

In addition to our core focus on interacting with the regulatory bodies, the WNTI Secretary General and team have taken on the task of being prepared for the future by focusing and working on the 'Review and Refresh' strategy.

Myself, fellow Board members and Advisory Committee endorsed the current works implemented and going forward are fully supportive of the 6 themes identified within the strategy.

"We are assessing potential E-learning packages that can be accessed from the upcoming new WNTI website, as well as specific seminars and workshops, such as the Security Workshop, which took place alongside the SAMM event in December."

Namibia. This focused on their Mining and Transport areas, and was well received and attended. The Namibia Uranium Association have already indicated an interest in a similar workshop in late 2019/2020.

Similarly in 2017 a workshop was held in Beijing, which was widely supported by our members. Whilst we have one-member

team and I know that the Secretary General is focused on this. It is a key part of our 'Review and Refresh' strategy.

Thank you for your continued support. I very much look forward to a successful 2019 for WNTI and as always myself and the other Board members are interested to hear your comments.

Together we have produced over:

30

PUBLICATIONS

to promote
best practice
within the
nuclear transport
industry





Secretary General

Firstly, a thank you to the WNTI Members. Based on the many discussions and great photos, you all contributed to making our 20th Anniversary event a real success and have given us some great memories. Of course, thanks go to the WNTI team for their efforts to put all the arrangements in place.

During the previous day, we continued to make good progress in the Working Group activities and thanks again go to the Working Group Chairmen and the individual Working Group secretaries for maintaining momentum in the groups. However, as I have mentioned to you previously, 20 years suggests a time to both reflect on the successes (and celebrations) and a time to 'Review and Refresh' what is planned going forward and this is also true for us.

I mentioned at the SAMM in December 2017 that we were going to review the our Strategy and we have now concluded and fully documented this work and the Board has endorsed the forward plan. At the overall level, our VISION remains the same, namely:

"For the transport of nuclear materials to be regarded as safe and secure and as a model for the transport of hazardous materials of all kinds."

Having reviewed and endorsed our Vision and Mission, we have identified 6 key areas (Themes) around which we want to 'Review and Refresh' the institute. These are:

1. Implement the new member structure;
2. Enhance WNTI's Technical Capability;
3. Develop the WNTI team;
4. Improve how WNTI works and Communicates;
5. Enhance WNTI's services to its Members;
6. Continue to evolve the WNTI Strategy.

This sets a continued high standard for us and our members and other industries if they are to achieve the WNTI level.

Similarly, our Mission statement remains similar to those set out previously:

"To be recognised as the voice of the nuclear materials transport industry by utilising its members' skills and knowledge to maintain and improve the safe, secure, efficient and reliable transport of nuclear materials."

Clearly there will be some changes but the foundation stones of what we do with the IAEA, IMO etc remain, as do the Working Groups. Again, thank you for your continued support to maintain the presence and



contribution in these key areas. We will also review the Working Groups and other aspects, so expect some positive changes.

Whilst I am writing this in late November, I plan to provide more details on the above at the SAMM in December. I am sure you will have some questions but I hope you will feel that we are putting our efforts into the appropriate areas.

One of our key outputs are the Publications – whether they are Standards, Good Practice Guides or other documents. As discussed at our SAMM in May 2018, we have now commenced the 'Review and Refresh' process for the WNTI Publications. This will not of course be complete in a few months. As agreed in May, we will keep the publications under review on a regular schedule going forward. Thanks must go to Pierre Malesys for keeping us focussed on this work.

Going from scheduled work to unscheduled work, we were surprised recently to receive a notice that our lease would expire much sooner than expected. We had expected to leave Remo House in 2020/2021 but were informed that we had to leave around the end of 2018! we have been in Remo House since 2006.

You will be aware by now that we have a new office, close to Holborn Station, so only two underground stops from Remo House. As the saying goes, 'every cloud has a silver lining'. After the initial recovery from the shock of the new timescale, we have managed to find more modern office facilities, even if about half the size of the current office. We will certainly need to move more towards being paperless.

The office move fits well with our 'Review and Refresh' strategy and we hope you will get the chance to visit and use the facilities at the new offices. Please let us know what you think.

Work has also continued with preparations for the 'Refreshed' website. By the time of publication of this WNTI Today 2019, we expect to be close to placing the order and the project to be commencing. We will be retaining the 'Member' and 'Public' areas.

Similarly, we are in the process of 'Refreshing' our WNTI logo and branding and the results of this work will be incorporated into the new website and will hopefully be on the front of WNTI Today.

"One of the other areas of work is the 'Refresh' of the WNTI team. Part of this is to reinforce the training and development programmes for the WNTI staff."

Alongside some formal team training work, there will be some site visits and I am grateful to our members for their support on this. We had a very informative visit to Urenco Capenhurst in June and some team building alongside this. Such visits enhance the practical industry knowledge of the team and this allows for more informed work in support of the members.

One of the other key areas of future work is our member communications. With the support of our regional representatives, we have sought to 'refresh' the bi-weekly information emails and we hope you have noticed the change in recent months.

We are in the process of reviewing our overall Communications strategy, including our communications with key stakeholders such as IAEA, IMO etc.

As is often the case, one of the most noticeable areas of change is in the people. Within the Working Groups Joel Kruehler has now taken up the role of the HEXT Working Group Chairman and Sarah Bryson is providing a support role to Martin Porter in the BET Working Group. Thank you for taking on these commitments.

Within the Head office, Francesca and Ayomide arrived during the year and Amy returned to WNTI. Hirotaka replaced Takeru at the start of the year and Simon replaced Trevor Dixon. As with the normal Specialist Advisor cycle, Anne Presta will return to Orano in January and a new advisor will join. I know you will make them feel welcome.

Finally, 2019 promises to be an interesting year. WNTI will have its new office (again, please come and visit and use the office facilities), we will have a new website, a new logo and it is a PATRAM year. We are working closely with the INMM as a partner organisation for PATRAM 2019 and we will take the lead for PATRAM 2022 in France. Thank you for your support in preparing papers and other work for PATRAM 2019.

Overall, thank you for your on-going support and we are looking to continually make improvements. We do understand that it is often difficult as you all have busy day jobs. However, without the member input, WNTI doesn't work.

"Collectively, we will continue to be the voice of the nuclear materials transport industry."



Overview of Radioactive Material Transport

Each day, around the world, thousands of shipments of radioactive materials are transported.

These consignments which are carried by road, rail, sea and inland waterways can range from smoke detectors, cobalt sources for medical uses, to nuclear fuel cycle materials for electricity generation. The transport of radioactive materials has a long history spanning several decades. Over this period a stringent regulatory regime has been developed at both international and national levels. The safety record of these shipments is impressive. In over 50 years there has never been a transport incident involving nuclear materials that has caused significant radiological damage to people or the environment.

To sustain this important source of energy, nuclear utilities around the world depend on safe, secure, efficient and reliable transport of the full range of nuclear fuel cycle materials.

The international transport of radioactive materials is governed by a stringent regulatory

regime, which includes standards, codes and regulations which have been continuously revised and updated over the past decades to keep abreast of the latest technologies, environmental concerns and political views.

THE IAEA REGULATIONS FOR THE SAFE TRANSPORT OF RADIOACTIVE MATERIAL

The IAEA Regulations are based on the fundamental principle that radioactive material being transported should be packaged adequately to provide protection against the various hazards of the material under both normal and potential accident conditions.

Safety, therefore, relies on the packaging adapting to its radioactive contents, whatever

the transport mode. As safety depends primarily on the packaging, the regulations set out several performance standards for each type of packaging used for the transport of radioactive material.

They provide for five different primary packages, (Excepted, Industrial, Type A, Type B and Type C) and set the criteria for their design according to both the activity and the physical form of the radioactive material they may contain.

The IAEA Regulations lay down corresponding test procedures to demonstrate compliance with the required performance standards. The provisions of the IAEA Regulations are not only reflected in the national requirements of Member States, but also in the regulation relative to each mode of transport as issued by international or regional bodies.

REGULATIONS, STANDARDS & CODES

Transport of dangerous goods

Model regulations

Technical Instructions for the Safe Transport of Dangerous Goods by Air

2019 Edition

IAEA Safety Standards Regulations for the Safe Transport of Material

2018 Edition

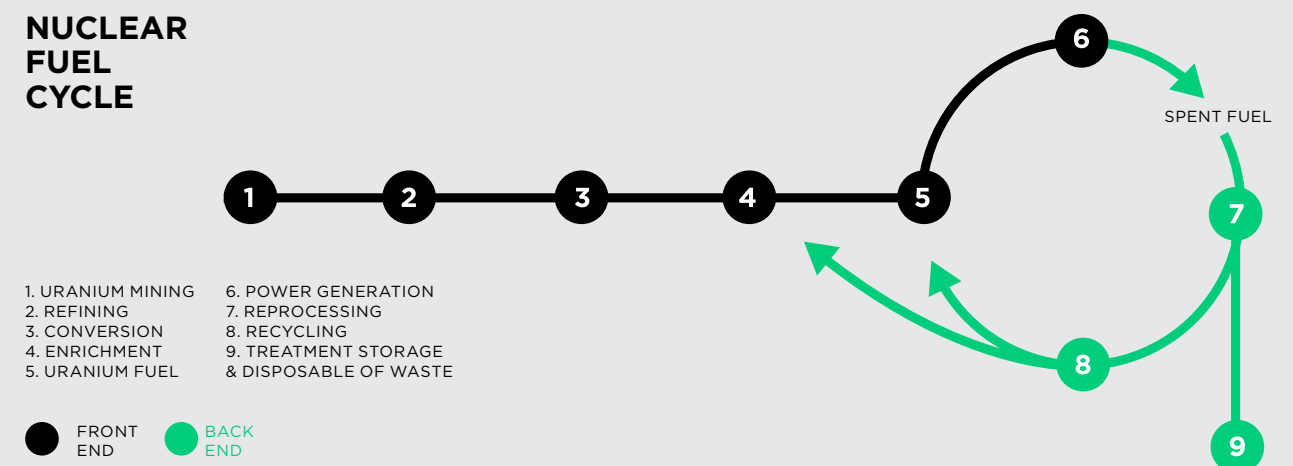
IMDG CODE 2018

ADR 2019



Orano, Boeuf Christian

NUCLEAR FUEL CYCLE



Overview of the WNTI

Industry Representative in Intergovernmental Organisations



In 1998, the World Nuclear Transport Institute (WNTI), a Non-Governmental Organisation, was founded by International Nuclear Services Ltd (United Kingdom), Orano (France) and the Federation of Electric Power Companies (FEPC, Japan) to represent the collective interests of the nuclear and radioactive materials transport industry and those who rely on the safe, secure and reliable packaging and efficient regulations that can be implemented by the industry.

Through the WNTI, members are working together to maintain a sound international transport framework through cooperation.

International Atomic Energy Agency (IAEA) Vienna



In his 1953 Atoms for Peace speech, U.S. President Dwight D. Eisenhower proposed the creation of an international body to promote and regulate the peaceful use of atomic power. The IAEA was established on 29th July 1957 and the slogan 'Atoms for peace' is still used today. The IAEA is headquartered in Vienna, Austria and reports to both the United Nations General Assembly and the Security Council. It works with its Member States and multiple partners worldwide to promote the safe, secure and peaceful use of nuclear technologies.

WNTI Status

- To enable the Agency to secure expert information or advice from Organisations having special competence in the field in which such information or advice is required;
- To promote knowledge of the principles and activities of the Agency, enabling organisations which represent important groups whose work is relevant to that of the Agency, to express their views.

WNTI Activity

WNTI has held Observer Status at the IAEA for 20 years, working closely with the IAEA in various meetings, including the Transport Safety Standard Committee (TRANSSC), the Emergency Preparedness and Response Standards Committee (EPReSC) and the Nuclear Security Guidance Committee (NSGC).

TRANSSC

The Transport Safety Standard Committee (TRANSSC) meets twice a year with the sessions lasting for several days. There are also parallel working groups that discuss specific issues.

NSGC

Security has always been at the forefront of the IAEA, with the development of the Convention on Physical Protection of Nuclear Material signed in 1980, INFCIRC 225 and the Code of Conduct on the Safety and Security of Radioactive Sources.

The Director General of the IAEA has now elevated the security section to a Division with a standalone "Nuclear Security Guidance Committee" (NSGC) that oversees all security related issues throughout the IAEA which

will also bring together transport security developments. WNTI has observer status at the NSGC and has been involved continuously in a series of IAEA meetings relating to Transport Security.

The Nuclear Security Guidance Committee (NSGC) was introduced in 2012 to make recommendations on the development and review of IAEA Nuclear Security Series publications.

EPReSC

The first meeting of the Emergency Preparedness and Response Standards Committee took place in 2015. EPReSC is the 5th Safety Standards Committee and its creation reflected the importance given to the cross-cutting nature of emergency preparedness and response. Both NSGC and EPReSC meet twice a year, often with some joint sessions.

The chair of the EPReSC may, from time to time, call for extraordinary meetings. Once per year, at the discretion of the Chair and in cooperation with the other Safety Standards Committees (SSC) and Nuclear Security Guidance Committee (NSGC), the meeting of the EPReSC may, in part, be conducted jointly with one of the other SSCs and NSGC. WNTI has been invited to a series of IAEA meetings relating with Transport EPR since the committee started in 2015.

The purpose of the Emergency Preparedness and Response Standards Committee (EPReSC) operating Guidelines is to describe how the EPReSC will conduct its business in a manner that is consistent with its terms of reference.



"WNTI contributes to the committees as an expert and can deliver Industry's opinions and experience of safe, secure, efficient and reliable transport."

International Maritime Organization (IMO), London



The International Maritime Organization (IMO) is the United Nations specialized agency with responsibility for the safety and security of shipping and the prevention of marine and atmospheric pollution by ships. The IMO is the global standard-setting authority for these matters and therefore has a main role of creating the regulatory framework for the shipping industry. These processes are collectively agreed by the 174 member states. This work supports the United Nations Sustainable Development Goals.

The main document that the IMO is custodian of is the International Convention for the Safety of Life at Sea (SOLAS). This, along with the other IMO documents is constantly reviewed and revised by the various committees of the IMO.

The IMO provisions for radioactive materials are based on the IAEA Transport Safety Regulations and are incorporated into the IMO International Maritime Dangerous Goods Code (IMDG Code).

In 1999 WNTI was granted a consultative status by the IMO Assembly. WNTI follows and contributes to the development of Class 7 (radioactive material) regulations of the IMDG code and International Nuclear Fuel Code (INF Code), and can deliver Industry's opinion on other issues relevant to the Class 7 transport community.

International Civil Aviation Organization (ICAO), Montreal



The International Civil Aviation Organization (ICAO), a United Nations Specialized Agency, established by States in 1944 to manage the administration and governance of the Convention on International Civil Aviation (Chicago Convention). ICAO works to achieve its vision of safe, secure and sustainable development of civil aviation through cooperation amongst its Member States. The WNTI has observer status to the ICAO and is invited regularly to participate in their Dangerous Goods Panel Working Group meetings (DGP WG).

UN Economic and Social Council's Sub Committee of Experts on the Transport of Dangerous Goods (UNSCETDG)



The Recommendations on the Transport of Dangerous Goods (also known as the "Orange Book") are addressed to governments and to the international organisations concerned with safety in the transport of dangerous goods.

In response to developments in technology and the changing needs of users, they have been regularly amended and updated at succeeding sessions of the Committee of Experts.

In 2001, the UN Economic and Social Council (ECOSOC) agreed the UN Committee of Experts should be reconfigured as the "Committee of Experts on the Transport of Dangerous Goods and on the Globally Harmonised System of Classification and Labelling of Chemicals". Two sub-committees were established, one being the UN Sub-Committee of Experts on the Transport of Dangerous Goods (UNSCETDG).

The UNSCETDG updates and amends the UN Recommendations every two years. This biennial revision cycle allows the Experts to keep the Orange Book up to date with the latest developments in dangerous goods transport. WNTI has observer status to the Sub-Committees with relevance to the transport of radioactive material.



62nd IAEA General Conference, Vienna 2017

In Cooperation with International Organisations

International Organization for Standardization (ISO)



The International Organization for Standardization (ISO) is a non-governmental body with a mission to promote the development of standardization and related activities worldwide.

A Technical Committee (TC85) deals with nuclear energy, nuclear technologies, and radiological protection; standards relating to the transport of radioactive materials are included in the activities of Sub-Committee 5 (nuclear fuel cycle).

Three standards, which we focus on, ISO 12807, 'Leakage testing on packages', ISO 7195, 'Packaging of Uranium Hexafluoride (UF₆) for transport' and ISO 10276 'Trunnions for packages used to transport radioactive material' are dealt with by the ISO Working Group 4 (transportation of nuclear and other radioactive material). WNTI makes an effective contribution to ISO as a Category A Liaison Organisation and can deliver Industry's opinions via its participation in ISO Working Group 4, as an expert.

World Maritime University, Malmö



The WMU, established by the IMO and based in Malmö, Sweden, focuses on increasing the number of highly trained specialist maritime personnel globally. The WNTI, in partnership with the WMU, has encouraged a fuller understanding of the issues surrounding the transport of radioactive materials. In addition, WNTI provides some sponsorship to one of the WMU students (see later article).

Cargo Incident Notification System (CINS), London



Cargo Incident Notification System (CINS) was launched in September 2011 and is a shipping line initiative developed to increase safety in the supply chain, reduce the number of cargo incidents on-board ships and highlight the risks caused by certain cargoes and/or packing failures. CINS comprises of the major container shipping companies, with several of them operating the maritime transport of radioactive materials

Their main purpose and aim is to:

- Collect information on operational cargo-related accidents and incidents from seaborne carriers (relevant information, excluding any commercial information, is entered into the CINS database)
- Analyse global operational information on all cargo and container related accidents.
- Establish areas of concern and trends in order to improve safety in the transport chain.

WNTI has honorary membership of CINS and is able to contribute expert opinion on the issues relating to the shipments of IMDG Code Class 7 dangerous goods. WNTI and CINS are currently co-authoring a General Information paper on radiation and radioactive shipments. Once completed, this publication will be made available on the WNTI website.

More information about CINS can be found on their website –

<http://www.cinsnet.com/>

WNTI also has long and beneficial association with other International Organisations:





WNTI Organisational Structure and Team

WNTI involves a team of 24 people, each with their own expertise and experience, who are dedicated to WNTI's core objectives and work to provide the best knowledge and service to our members.

WNTI Board of Directors

**David Ohayon
(Chairman)**
Orano TN International

Frederic De Agostini
Orano TN International

Masaaki Kato
Overseas Reprocessing
Committee

Masahiro Takasugi
Nuclear Fuel Transport Co. Ltd

Peter Buchan
International Nuclear Services

Christopher Watson
International Nuclear Services

Chris Chen
Company Secretary
World Nuclear Transport Institute

WNTI Advisory Committee

John Mulkern
World Nuclear Transport Institute

Chris Chen
World Nuclear Transport Institute

Franck Bimet
Orano TN International

Ko Sugiura
Overseas Reprocessing
Committee

Yukihiko Fukaya
Nuclear Fuel Transport Co. Ltd

Ceinion Thomas
International Nuclear Services

Graham Rose
International Nuclear Services

Secretariat Headquarters, London

John Mulkern
Secretary General

Hiroataka Nojima
Specialist Advisor

Simon Chaplin
Specialist Advisor

Chris Chen
Company Secretary / Finance
& Operations Manager

Amy Northage
Membership & Events Executive

Ayomide Agbaje
Finance & Admin Assistant

Francesca Houslander
Communications Officer

Regional Representation

Australasia office
Regional Representative
Frank Boulton

China office
Regional Representative
Steven Shi

Southern Africa office
Regional Representative
Captin Sanjoy Sen

Tokyo office
Principal Representative
Ko Sugiura

Washington office
Principal Representative
Eileen Supko

WNTI
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Chris Chen

REGIONAL
REPRESENTATIVES



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WNTI Secretary General



Chris Chen
Finance & Operations Manager



Simon Chaplin
Specialist Advisor



Hiroataka Nojima
Specialist Advisor



Amy Northage
Membership & Events Executive



Ayomide Agbaje
Finance & Admin Assistant



Francesca Houslander
Communications Officer

WNTI Membership

Our growing worldwide membership is open to all companies involved in nuclear transport including generators, suppliers, uranium producers, fuel cycle and other nuclear supply chain companies

AUSTRALIA

BHP

BELGIUM

ÉLINI – European Liability Insurance
for the Nuclear Industry

NV TRANSRAD SA

CANADA

Cameco Corporation

Commonwealth Independent
States Navigation IncNuclear Waste Management
Organization (NWMO)

TAM International Inc.

CHINA

Nantong CIMC Energy Equipment Co, Ltd

DENMARK

Maersk Line

FRANCE

Orano

Assuratome

CMA CGM Logistics

Descote s.a.s

Électricité de France (EDF)

GEODIS Wilson/STSI

TN International

GERMANY

DAHER Nuclear Technologies GmbH

GNS Gesellschaft für Nuklear-Service mbH

RSB LOGISTIC Projektspeidition GmbH

JAPAN

The Federation of Electric
Power Companies of Japan (FEPC)

Hitachi Zosen Corporation

Japan Nuclear Fuel Ltd. (JNFL)

Marubeni Corporation

Nuclear Fuel Industries, Ltd. (NFI)

Nuclear Fuel Transport Co., Ltd. (NFT)

Sojitz Corporation

Sumitomo Corporation

RUSSIA

J.S.C Saint Petersburg “IZOTOP”

J.S.C Technabexport (TENEX)

SOUTH AFRICA

NTP Logistics (Pty) Ltd

SPAIN

ENUSA Industrias Avanzadas S.A.

SWITZERLAND

Swiss Nuclear Fuel Commission
(Axpo Power AG)

UK

International Nuclear Services Ltd

Sellafield Ltd.

Bureau Veritas UK Ltd

Direct Rail Services Ltd. (DRS)

Low Level Waste Repository (LLWR)

Nuclear Insurance Pools/
General Purposes Committee (GPC)

Nuclear Risk Insurers Ltd. (NRI)

Pacific Nuclear Transport Ltd. (PNTL)

Radioactive Waste Management (RWM).

Sercos

URENCO Ltd.

USA

Alara Logistics Group

ConverDyn

Westinghouse Electric Company

Joining the World Nuclear Transport Institute

WNTI is committed to promoting the safe, secure, efficient and reliable transportation of nuclear and radioactive material. Our WNTI network believes that industry collaboration is essential for progress.



“WNTI provides opportunities to represent industry, based on our actual operational experiences”

– Daiichiro Ito, Group Manager, NFT Japan

The participants at our last SAMM event collectively held 1,700 man-years of Nuclear Transport experience. Being a WNTI member opens the doors to this major Transport Network.

As the only Nuclear Transport NGO granted Observer status at the United Nations IAEA and Consultative status at the International Maritime Organisation, we are proud to be in a unique position to officially represent our members’ interests, where industry regulations are negotiated.

A WNTI Member Shares: EXPERTISE

WNTI connects experts from all areas of the fuel cycle. WNTI Industry-led Working Groups provide a technical forum for the exchange of information, with a view to developing consolidated industry positions.

EXPERIENCE

WNTI members can leverage their recorded experiences to propose improvements to the official practises of our industry. WNTI can represent those proposals to the key United Nations regulators.

EDUCATION

WNTI leads others through good practice. WNTI members produce Standards, Good Practice Guides, Information Papers and Fact Sheets, encompassing a wide range of topics concerning the transportation of Nuclear and Radioactive Material. WNTI Members have the belief that making this information freely available assists all stakeholders in understanding and complying with regulations and that this transparency benefits the whole industry.

A WNTI Member Receives: INFLUENCE

Uniting behind a single voice is vital for those companies wishing to maintain awareness and influence regulation outcomes. While this is one of WNTI’s principal responsibilities to our members, the conversation isn’t one-way. By joining our Working Groups, you can influence our position and thinking on the issues that matter to you such as the handling of Class 7 Materials, packaging requirements and nuclear liability insurance.

INCLUSION

Uninterrupted transport is incredibly important for the future success of Nuclear Energy and its reputation. Companies need a single voice to shape the debate around issues affecting our progress. WNTI offers members a part in that respected voice and an opportunity to be involved in shaping the future regulations of our industry.

INTERPRETATION

WNTI has created an official dialogue with our regulators. WNTI members receive access to WNTI Specialist Advisors for help with existing or new legislation.

INSIGHT

Our own specialists are available to members, providing advice on complex technical matters and updates from those topics discussed by our regulators. This ensures that you can confidently act in accordance with any rules and regulations.

INTERACTION

Being a WNTI member provides access to the WNTI Network and the twice yearly Members Meetings. Semi-Annual Members Meetings (SAMM) bring together companies and provide the opportunity to share information and ideas.

Membership Categories

In addition to the Founders of WNTI (INS, Orano and FEPC), there are 3 other Membership Categories:



FULL MEMBERS

Make a substantial commitment and are actively involved in WNTI's strategy and development. They will qualify to be a member of the WNTI Board and Advisory Committee.

This category of Member was introduced in April 2018 and the UK Company Sellafield Limited became the first Full Member in January 2019.

ASSOCIATE MEMBERS

Participate actively in the development of Good Practices and Position papers through the Industry Working Groups. They have access to information produced by the WNTI. They are also asked to provide, if applicable, expert advice and experience from lessons learnt in support of the WNTI activities.

Associate Member was one of the original WNTI categories of membership and this accounts for the majority of WNTI members.

SUPPORT MEMBERS

Are smaller companies with lesser direct involvement in nuclear transport activities than Associate Members but play an important role in the overall supply chain. They will have access to information produced by the WNTI and are welcomed to participate in the WNTI Plenary Members Meetings and Seminars.

The Support Member category was introduced in 2016 and currently there are 4 companies in this category.

If you are interested in Membership then please contact
Amy Northage, Membership & Events Executive,
amyn@wnti.co.uk



Working Groups



JAN VAN
AARLE

The WNTI SSR-6 Working Group



The WNTI SSR-6 Industrial Working Group is an active party in addressing the industry perspective on the application of The Regulations and Guidelines on the national and international transportation of radioactive material. The Working Group consist of members from package designing, manufacturing and shipping companies.

The Working Group follows the review and revision process on the IAEA Regulations for the Safe Transport of Radioactive Material (SSR-6), associated Guidelines and the IAEA Recommendations on Transport Security.

Many members of the Working Group participate actively to the IAEA Transport Safety Standards Committee (TRANSSC) on the IAEA Regulations, as well as in dedicated Consultancy Meetings (CM) and Technical Meetings (TM) established by the IAEA Transport Safety Unit in order to present consolidated industry positions to specific developments of SSR-6.

Achieving an Industry Position

The purpose of the WNTI SSR-6 Industry Working Group is to achieve a consolidated industry position on the IAEA Regulations for the Safe Transport of Radioactive Material (SSR-6) review and implementation issues. The Working Group plays an important role in providing advice to support WNTI representatives at IAEA and other meetings.

Development and implementation of the Transport Regulations

The activities of the Working Group are focused on the development and implementation of SSR-6, the Advisory Material for the IAEA Regulations for the Transport of Radioactive Material (SSG-26) and related IAEA Guidelines, providing a

consolidated industry position and feedback on the Transport Regulations.

The WNTI participates actively in Working Groups set up by the IAEA Transport Safety Standards Committee (TRANSSC) in order to contribute to specific topics of the SSR-6, such as new requirements for the testing of packages, particular issues with dedicated modes of transport, and changes to the Regulations proposed during the review and revision of SSR-6 and accompanying guidelines.

2018 Activities

The SSR-6 Working Group has actively contributed to the review and revision of the Advisory Material (SSG-26) and other Guidelines, e.g. Schedules of Provisions of the IAEA Regulations for the Safe Transport of Radioactive Material (2012 Edition) (SSG-33) and the new Guideline on Package Design Safety Reports (PDSR).

Members of the working group were also participating in the IAEA TRANSSC Established Working Groups on A1/A2-Values, Criticality and 20% increase in dose rate during Normal Conditions of Transport.

Future Challenges

The SSR-6 Working Group will continue to contribute to the development of Regulations and Guidelines for the Safe Transport of Radioactive Material set out by the IAEA and international Competent Authority Associations.

WNTI will concentrate its efforts on the next SSR-6 edition revision cycle through its participation in the IAEA TRANSSC Technical Experts Groups: Package performance and Assessment, Criticality, Radiation Protection and Transport Operational Matters. WNTI will also support its industry members regarding the application of transport regulations in terms of safety and security.

The Working Group follows the review and revision process on the IAEA Regulations for the Safe Transport of Radioactive Material (SSR-6), associated Guidelines and the IAEA Recommendations on Transport Security.

For more information, contact:

Chair: Dr Jan Van Aarle
AXPO Power AG, Head services,
Nuclear Fuel
jan.vanaarle@axpo.com

Secretary: Anne Presta
WNTI, Specialist Advisor
apresta@wnti.co.uk

MARTIN
PORTER

Back End Transport Industry Working Group



Spent fuel and radioactive waste from the nuclear power reactors, the decommissioning of nuclear facilities and a wide range of industrial and medical facilities vary greatly in their chemical, physical and radioactive properties. Radioactive wastes have to be processed and packaged, transported for storage and eventually for disposal.

The BET WG have developed a forward Workplan to identify specific BET issues and drive the delivery of tangible outputs which further the objectives of the BET WG.

The current workstream themes are:

- Waste Inventory Forecasting & Characterisation
- Cask Decommissioning
- Waste Transport Regulation Framework
- Consignee Duty Holding

The BET WG meet formally twice-yearly, coinciding with the broader WNTI Semi Annual Members Meetings (SAMM) to share best practice through pertinent presentations and to review the BET WG Workplan. In the intervening period, the BET WG hold two-monthly telephone conferences to progress the Workplan delivery.

The Purpose of the Working Group

The purpose of this Working Group is to develop discussions on back-end transport issues with the potential to affect radioactive materials transport in terms of safety requirements, costs, delays and any other aspects.

The Working Group Activities

The activities of the Working Group involves the discussion and sharing of back-end transport issues in order to facilitate good practices in the packaging and the transport of waste materials.

The Main Activity in 2018

The Working Group has commenced discussing a new type of package for intermediate level waste (ILW). This is aimed at simplifying the processes of decommissioning and reducing the number of packages to be shipped by allowing the packaging of a broader range of material in storage and transport packages.

The Summary of 2018 Activities

As described before, the Working Group members discussed a new type of package for intermediate level waste (ILW). In addition, we participated in the IAEA meetings regarding back end transport and contributed to the IAEA activities. One of those activities was to revise the WNTI article on the IAEA-TECDOC-1774: Potential Interface Issues in Spent Fuel Management. Furthermore, earlier in 2018 the WNTI commenced a strategic process of 'Refresh, Renew and Revise' of its publications. We reviewed and revised WNTI Fact Sheet 'Transport of Large Objects and Special Arrangements'.

The International Symposium on the Packaging and Transportation of Radioactive Materials (PATRAM) will be held in 2019, so WNTI have submitted an abstract.

The Future Challenges for the Working Group

- To continue to consider new types of packages for intermediate level waste (ILW)
- To continue working with the IAEA
- To continue to review and update current WNTI Publications
- To develop new WNTI publications, where a need has been identified
- To prepare and finalise the WNTI paper for PATRAM 2019

For more information, contact:

Chairman: Martin Porter
Sellafield Ltd,
Head of Consignment Operations
martin.porter@sellafieldsites.com

Secretary: Hirotaka Nojima
WNTI, Specialist Advisor
hirotakan@wnti.co.uk

MARC-ANDRE
CHARETTE

Uranium Concentrates Working Group



Uranium ore concentrates are transported internationally by road, rail and sea from the uranium producers to the uranium converters. These international transport routes involve large distances and in some cases many jurisdictions.

In order to ensure the safe, secure and efficient transport of uranium ore concentrate, the WNTI Uranium Concentrates Industry Working Group was formed and is now dedicated to developing Standards, Good Practice Guides and Fact Sheets.

Recently, the Working Group reviewed the Standard for Packaging and Transport of Uranium Concentrates and drafted a generic safety data sheet for uranium concentrate. This process involved extensive contributions from the subject matter experts among the WNTI membership. Version 2 of the standard is available on the WNTI website along with the Generic Safety UOC Data Sheet 2018.

In 2018, the Working Group reviewed the publication entitled Preparation of Natural Uranium Samples for Shipment in an Excepted Package. This will be published as a Good Practice Guide in early 2019.

The Purpose of the Working Group

To discuss and explore the following transport aspects for uranium concentrates:

- The packaging used
- The shipping process, for example the sea containers and package securing methods
- The requirements and controls for transport, such as safety marks, shipping documents, safety data sheets and radiation protection
- The Working Group is also a forum for sharing experiences, issues and incidents in order that the industry can learn from each other.

The Activities of the Working Group are to develop publications and WNTI standards for the Uranium Concentrates Transport Industry particularly for ISO Containers in Multimodal Transport.

The Summary of 2018 Activities

1. Reviewed WNTI Fact Sheet 'Preparation of Natural Uranium Samples for Shipment in an Excepted Package' for reissue as a Good Practice Guide.
2. Reviewed the following WNTI publications with a view to withdrawal.
3. 'Good Practice for the Securing of Drums of Uranium Ore Concentrate in 20' ISO containers'
4. WNTI Best Practice for Checking Shipping Containers Prior to Loading Drums of UOC and Before Dispatch'
5. Uranium Concentrates Industry Best Practice for Avoiding Contamination of Packages and Shipping Containers in Multimodal Transports'.
6. Reviewed and commented on the IAEA TECDOC: 'Managing the Interface Between Safety and Security for Low-Activity radioactive material in Transport'.

Review the Standard for Packaging and Transport of Uranium Concentrates to cover the following 3 elements:

- Recommending to the producers of uranium ore concentrate that although the regulations allow the contamination level to be 4 Bq/cm² for transport, they should endeavor to work to

0.4 Bq/cm², as the sea container needs to be released at 0.4 Bq/cm² at the converter site.

- Recommending the use of a shipment notice by the producers of uranium ore concentrate to inform the converters of an intended shipment.
- Provide a description of the drum unloading and sea container release activities at the converter facility as information to the producers.

The Future Challenges for the Working Group

- To continue working with the IAEA in order to develop publications
- To continue to review and update current WNTI publications
- To develop new WNTI publications, where a need has been identified
- To ensure best practice and LFE continues to be utilised.

For more information, contact:

Chair: Marc-Andre Charette
Cameco Corporation, Director –
Transportation, Security &
Regulatory Relations
marc-andre_charette@cameco.com

Secretary: Simon Chaplin
WNTI, Specialist Advisor
simonc@wnti.co.uk

BEN
WHITTARD

Transport Security Working Group



By its very nature, the security of nuclear and other radioactive material during transport continues to attract international attention. The unique challenges posed during transport, particularly when compared with fixed facilities, often require a dedicated and risk managed approach.

At WNTI, we are committed to supporting our members to navigate through this ever changing environment and to ensure the safe, secure, efficient and reliable transport of materials globally.

The WNTI Transport Security Working Group (TSWG) continues to act as an important central forum where WNTI members can come together to share and discuss transport security matters.

Acting as our members' voice at international organisations such as the IMO and IAEA, the TSWG works collaboratively with its members to ensure their views and opinions count. We also use the forum to discuss new and emerging threats/risks of interest and seek to enable the early identification of issues and risks to our sector.

In the past year, the WNTI TSWG has provided a platform for important discussions on cyber security in transport, security in the supply chain, security culture and human factors and the sharing of important threat information from relevant international agencies such as the IMO.

The summary of security related 2018 Activities

- 22nd-26th January 2018 – IAEA Consultancy Meeting on Security Training. Workshops set up to address the following:
- Transport Security Exercises
- Preparing a Transport Security Plan
- Transport Security Inspections
- 29th Jan– 2nd February 2018 – IAEA

THEME	PURPOSE	TARGETS
Learning from Experience	Improve and increase cross member sharing of security learning, experience and good practice to benefit the wider transport membership and community.	Delivery of member presentations on LFE from their part of the sector: <ul style="list-style-type: none">● Front-end (Winter 2018)● Back-end (Summer 2019)● Others (Winter 2019)
Regulatory Change	Provide WNTI members with early and comprehensive notice of intended changes to international regulations and good practice to enable an inclusive and comprehensive consultation.	Develop and implement a new consultation process for regulatory consultation with WNTI members (Summer 2019)
Training & Competency	Support WNTI members aspirations to improve the general awareness and competency of transport security through the provision of training, good practice guides and specialist advice.	<ul style="list-style-type: none">● Review WNTI TSWG publications (Summer 2019)● Carry-out 1 day training session for WTI members (Winter 2018)● Provide at least 1 specialist security presentation at each

Consultancy Meeting on IAEA ‘Tecdoc Managing the Interface between Safety and Security for Low-activity Radioactive Material in Transport’.

- 11th-15th June 2018 – IAEA Nuclear Security Guidance Committee.
- 9th-13th July 2018 – IAEA Technical Meeting on Security of Nuclear and other Radioactive Material in Transport. WNTI involvement included presentations titled ‘Industry Perspective on International Roles and Responsibilities for Transport Security’ and ‘An Overview of Transport in the Nuclear Fuel Cycle’.

● December 2018 – IMO Marine Safety Committee (MSC) sessions.

Summary of planned activities in 2019

- 5th- 14th June 2019 – IMO Marine Safety Committee (MSC) 101st session

- SAMM meeting May 2019
- 1st – 4th July 2019 – IAEA Nuclear Security Guidance Committee (NSGC)
- 18th – 22nd November 2019 – IAEA Nuclear Security Guidance Committee
- Tbc – IAEA Technical Meeting on Security of Nuclear and other Radioactive Material in Transport.
- Finalise papers for PATRAM

For more information, contact:

Chairman: Ben Whittard,
Head of Security & Resilience, International Nuclear Services Ltd.
ben.whittard@innuserv.com

Secretary: Simon Chaplin
WNTI, Specialist Advisor
simonc@wnti.co.uk

JOEL
KRUEHLER

HEXT Industry Working Group



Uranium Hexafluoride (UF6) is the main component for the production of clean and low-carbon nuclear energy. It is transported internationally by road, rail and sea from the conversion facilities to the enrichment and fuel production facilities. Like other nuclear products, these international transport routes involve large distances and in some cases, the packages may traverse many jurisdictions on their way to the final destination.

To ensure the safe, secure and efficient transport of UF6, the WNTI HEXT Working Group has been working to develop fact sheets and transport guidance information for both the general public and the industry.

These are especially developed by the industry to establish a common understanding on how these products are shipped safely around the world. The HEXT Working Group also interacts with and plays an important role within the WNTI SSR-6 Working Group in the development of IAEA regulations for the safe transport of radioactive material.

The Purpose of the Working Group

To consider the transport and package requirements in transport safety regulations SSR-6 and other relevant dangerous goods regulations for the transport of UF6. The Working Group Activities

The Working Group provides a forum for WNTI Members to exchange information on a wide range of challenges affecting our industry. This includes package specifications, approvals and validations. Information is also shared on technical and operational solutions to satisfy regulatory requirements and to progress best practice for the safe handling and transportation of UF6.

The Summary of 2018 Activities

The Working Group activities include closely related developments in applicable

regulations, especially with regard to non-fissile, fissile-excepted and fissile UF6. In this context, the development regarding the H(U) approvals for 48 inch cylinders and B(U) F, AF and IF approvals for 30 inch cylinders requires special attention. During 2018 the Working Group:

- Reviewed UF6 package approvals
- Reviewed amendments on UF6 cylinder standards,
- ISO 7195 and ANSI N14.1
- Provided support during the revision process of SSR-6
- Considered regulatory changes on classification of UF6
- Amended a segregation provision for UF6
- Updated the UF6 Fact Sheet
- Considered regulatory developments
- Reviewed WNTI publications

On the margins of the HEXT group, the WNTI has been developing a Good Practice Guide for a Unique Identifier for UF6 cylinders. This guide is intended to provide a standardized format and application method for a global identifier for the uranium hexafluoride (UF6) cylinders most commonly used across the nuclear industry.

Contribution to the Working Group

The main contributors to the group are representatives of companies processing UF6, such as converters, enrichers and fuel producers. It is desired that freight forwarders and transporters extend their communication of challenges and make use of the expertise provided in this group.

The Future Challenges for the Working Group

The future challenges are, amongst others, to monitor the regulatory developments with regard to the management of packaging. Against this background, the verification of long-term integrity of packages is coming more into focus and it is therefore one of the main objectives for the group.

In addition, the simulation of an adequate UF6 surrogate for regulatory drop tests of UF6 cylinders need to be finalised. Also, as it has already been a major aim in the past, the ongoing improvement of guidance and operational procedures for the safe and secure handling of UF6 is further promoted.

For more information, contact:

Chairman: Joel Kruehler,
URENCO, Logistics Compliance Manager
joel.kruehler@urencocom

Secretary: Anne Presta,
WNTI, Specialist Advisor
apresta@wnti.co.uk

Securing Your Network

WNTI offers a secure platform for its international members, where experts can leverage their technical experience and contribute towards shaping the future processes of our industry.



Semi Annual Member Meetings

WNTI Semi Annual Members Meetings (SAMM) take place each Winter in London and Summer in a Member destination. They are attended by Transport, Security, Logistics, Mining, Compliance, Sales and Packaging experts from within our industry and from across the world.

These two-day events are centred around the Working Group meetings, supported with an evening event, where attendees can network in an informal setting. Representative Chairmen from our membership body lead the five bespoke Working Group seminars, with a range of organisations and disciplines sharing their knowledge and experience. In addition, a Plenary Day is held on Day 2.

SAMM 2018

WNTI held SAMM on the 30-31st May and the 12-13th December, 2018. In December, we progressed to the new location of the Hilton Metropole hotel, in London. The WNTI Working Group Chairmen (from Urenco, Sellafield, Cameco, INS and Swiss Nuclear Fuel Commission) lead each group, with a consistent focus on investigating and refining industry best practises.

We enjoyed increased member participation this year, with a Shared Experiences initiative introduced in the Transport Security Working Group and selected members shared their company's individual Security challenges, this past year. A successful Security Training Workshop and side meeting also took place in December, which was sponsored by International Nuclear Services (UK).

Each Working Group continued to focus on the WNTI publications, providing comment to the IAEA in their publication revision process and proposing new publications to address topics not currently covered by WNTI, within the Fuel Cycle. Various new packages were also discussed such as a new type of package for low level waste introduced by Radioactive Waste Management in the Back End Transport Working Group. At the end of Day 1 the WNTI Secretary General provided an update to Members on the WNTI Strategy and other relevant topics.

The second day of the SAMM is split into two main sessions. One session is dedicated to presentations and discussions on topics that potentially affect the Nuclear Industry, particularly safety and security in transport. In the December SAMM, guest presentations included speakers from the IAEA and The UK Department for Business, Energy and Industrial Strategy (BEIS). There were also updates from other organisations that WNTI have close relationships with, such as the World Nuclear Association (WNA), the Institute of Nuclear Materials Management (INMM) and FORATOM a trade association for the European nuclear energy industry. The second session is a closed session to which only WNTI members are invited. This session received updates from the various WNTI global representatives who are best placed to give a clear insight into developments in their regions. It was also an opportunity for the WNTI members to hold frank and open discussions on topics that affect the membership and the broader nuclear transport industry.

WNTI Celebrates 20 Years Of Safe Nuclear Transport

On the 31st May 2018, WNTI members travelled to London to celebrate 20 years of the institute's dedication to nuclear transport safety and security. Members met at the House of Commons, to recall the events and progress during the last 20 years and in the evening, held a celebratory dinner on board The Silver Sturgeon, cruising the River Thames. WNTI reached this milestone with a growing global representation of nearly 50 member companies worldwide, from a range of nuclear industry sectors.

David Ohayon, Director of Business Line Waste at Orano TN and Chairman of WNTI said "WNTI is the voice of its members, in order to bring a common position in the class 7 transportation network and Orano TN is proud to be a founder member of WNTI."

John Mulkern, WNTI Secretary General said: "I'm proud to be the Secretary General of WNTI, an organisation which has attracted member companies from across the world, at the time of its 20th Anniversary.

"In addition to our core work with organisations such as IMO and IAEA, we have collaborated with other global partners on areas such as transport security. We develop solutions in the five WNTI Working Groups, that result in best practice guides and we share our 'best-practice' approach at many international conferences."

INS Director of Shipping, Pete Buchan said "WNTI plays a vital role on behalf of the industry by helping to promote a sound international framework for radioactive materials transport. They help to build consensus, co-operation and understanding in what is a complex regulatory, commercial and political environment. INS is proud to be a founder member of WNTI and we look forward to working with them for many years to come."

"WNTI is the voice of its members, in order to bring a common position in the class 7 transportation network and Orano TN is proud to be a founder member of WNTI."



PATRAM 2019

This year's International Symposium on the Packaging and Transportation of Radioactive Materials promises to be the strongest yet, providing a glimpse of the future of the Nuclear Transport industry and its focus on new technology and innovations.

PATRAM 2019

August 4-9 | New Orleans Marriott | New Orleans, LA,

WNTI is partnering with INMM to host the only meeting in the world devoted entirely to the exchange of information for the packaging and transportation of radioactive materials. PATRAM is a unique opportunity for the entire professional community.

PATRAM 2019 is a series of symposia bringing together worldwide experts from government, industry and research organisations to exchange information relating to all aspects of the packaging and transportation of radioactive materials.

These symposia were initiated in the early 1960s by the U.S. Atomic Energy Commission because of the rapid progress in package design and transport experiences with the development of the Regulations for the Safe Transport of Radioactive Material by the IAEA.

When in the US, The Institute of Nuclear Materials Management (INMM) is the technical organisation hosting the conference, in partnership with WNTI. The Department of Transportation (DOT), Department of Energy (DOE) and the US Nuclear Regulatory Commission (NRC) are the U.S. federal agencies supporting PATRAM 2019.

When PATRAM is in Europe, WNTI will take the lead and INMM will support, as is planned for PATRAM 2022 in France.

OPPORTUNITIES FOR WNTI MEMBERS

WNTI members were invited to submit an Abstract not limited to the following topics:

- Package Design (including Materials and Testing)
- Analysis (including Structural, Thermal, Shielding, Criticality, and Risk Assessment)
- Transport Operations (including Tracking, Routing, Emergency Preparedness, Radiation Protection, Denial of Shipments)
- Regulatory & Institutional Issues (including Regulations, Codes and Standards, Communications, Liability, Security)
- Content Specific Challenges (including Spent Fuel, Radio Pharmaceuticals, Large Items, UF₆, NORM, Waste, Fissile Material, Orphan Sources, Manufactured Items).

In addition, companies have the opportunity to advertise, in various marketing materials distributed throughout the PATRAM event. Popular areas for advertisement have been within the PATRAM event program, at the PATRAM guest dinner in the evening, where various experts will present and also with regard to the free branded merchandise distributed to PATRAM guests. Overall, some ten abstracts have been submitted by WNTI. These will be reviewed at the Review Meeting in February. Some 350 abstracts have been submitted overall.

NEW FOR 2019

PATRAM 2019 will take place in the new location of New Orleans at the New Orleans Marriott Hotel, from August 4th-9th, 2019.

www.Patram.org

WNTI intends to be an Exhibitor at Patram 2019.



Events 2018

January - March

IAEA

4th Consultancy Meeting
on Safety Security Interface

6th Consultancy Meeting
on EPR TS-G-1.2 revision

Consultancy Meeting on
SSG-26 draft revision

IMO

Ship Design and
Construction (SDC), London

Sub-Committee on Navigation,
Communications and Search
and Rescue (NCSR) – 4th Session

Sub-Committee on Pollution
Prevention and Response (PPR)

Sub-Committee on Ship Systems
and Equipment (SSE)

OTHERS

33rd INMM Spent Fuel Seminar

EC ENER Study

FORATOM
Communication
Task Force meeting

OECD/NEA –
Nuclear Liability – WPNL1

PATRAM 2022 –
Steering Committee No 8

PATRAM 2022 –
Steering Committee No 9

RAMTRANSPORT
Conference 2018 Steering
Committee meeting

July - September

IAEA

Coastal and Shipping
States Meeting

General Conference
– 62nd Session

Technical Meeting on Integrated
Approaches to the Back End of
the Fuel Cycle

Technical Meeting on
Transport Security

IMO

Carriage of Cargoes and
Containers (CCC) – 5th Session

IMO Council

Sub-committee Implementation
of IMO Instruments – 5th Session

OTHERS

ENCO – European RAM
Transports Study- Workshop No 2

INMM Meeting

PATRAM 2022 Steering
Committee No 103rd

World Nuclear Decommissioning
and Waste Management
Congress (Europe) 2018

WNA Transport Working Group

WNA Symposium 2018

April - June

IAEA

TRANSSC 36

EPRReSC 6

NSGC 13

IMO

Facilitation Committee

Legal 105th session

Marine Environment
Protection Committee (MEPC)

Marine Safety Committee (MSC)

OTHERS

INLA WG-7 – Nuclear Liability
and RAM Transports

ISO/TC 85 plenary and
SC5/WG4 Meeting

11th RAMTRANSPORT
Conference

Transport Facilitation
Working Group Meeting

WNA – Transport Working
Group – WNFC

WNTI

WNU Lecture

Semi-Annual Members Meeting

Advisory Committee Meeting

Board of Directors Meeting

October - December

IAEA

EPRReSC7

TRANSSC 37

IMO

IMO Council

Marine Environment Protection
Committee (MEPC)

Maritime Safety Committee
(MSC)

OTHERS

ICAO Dangerous Goods
Working Group

WNTI

Advisory Committee

Board of Directors Meeting

Semi-Annual Members Meeting

Transport Security
Training Workshop



Key Goals & Events for 2019



WNTI will be involved in preparing and participating in several important International Conferences and key events during 2019:

PATRAM

WNTI is the official co-host of PATRAM 2019. This conference will be held from 4th to 9th August 2019 in New Orleans, USA.

WNTI will have an exhibition stand and will communicate with all PATRAM 2019 attendees. The WNTI Secretary General and Specialist Advisors will make presentations and be present during the conference:

- WNTI SG and several WNTI members will present an abstract during the technical sessions.
- WNTI will sponsor the tote bags handed out to delegates, in order to raise awareness of our Institute.
- WNTI staff will attend several technical sessions, to supply a structured report identifying the topics of interest, in order to improve our services to the Members.

WNTI May SAMM

The next WNTI SAMM will be hosted in Russia, with our members' meal sponsored by TENEX.

TENEX (a part of the ROSATOM company) is a major supplier of the NFC products, which provides a significant share of the uranium enrichment services required for western type nuclear reactors.

The SAMM Meeting will take place in St.Petersburg in May 2019 with Working Group meetings, a plenary session and a site visit.

Intergovernmental Meetings

WNTI will continue to maintain its close cooperation with UN Bodies (IAEA, IMO, ICAO and the UN Sub-Committee of Experts on the Transport of Dangerous Goods) through strong involvement and participation at major transport related events throughout the year – these being:

- IAEA 63rd General Conference
- Transport Safety Standards Committee (TRANSSC No 38 and No 39)
- Emergency Preparedness and Response Standards Committee (EPReSC No 8 and No 9)
- Nuclear Security Guidance Committee (NSGC) and associated Consultancy and

Technical Meetings dedicated to IAEA Publications revision.

IMO

Assembly
Maritime Safety and Technical Co-operation
Reinforce the WNTI and IMO relations.

ICAO

Dangerous Goods Panel Working Group WNTI is also continuing to strengthen its cooperation with other Industry Organisations:

ISO, CINS, FORATOM, INMM, NEL, WANO, WNA

On behalf of and with its Members, WNTI will maintain its strong engagement for promoting effective safety and security standards for the packaging and transport of radioactive materials in participating

40 Events 12 Cities

January	February	March	April
WNA Transport Working Group, London	IMO Strategic direction 6 Committee (SDC 6) – Ensure regulatory effectiveness	IMO Sub-Committee on Ship System and Equipment (SSE 6)	IMO Facilitation Committee (FAL 43)
Submission of WNTI Abstracts to PATRAM.	PATRAM 2019 – Paper Selection Committee meeting, New Orleans	45th annual Waste Management Symposium, Phoenix	WNTI Advisory Committee
Further Preparations meeting for PATRAM 2022.	IMO Sub-Committee on Pollution Prevention and Response (PPR 6)	IMO Legal Committee Session 106	
		FORATOM Communication Advisory Group, Brussels	
		IAEA Consultancy Meeting on SSG-26	
May	June	July	August
IMO Sub -Committee on Human Element, Training and Watch Keeping (HTW 6)	PIME Public Information Material Exchange Conference	FORATOM Communication Advisory Group	PATRAM 2019, New Orleans
ISO TC85 SC5 Plenary, Berlin	IAEA International Conference on the Management of Spent Fuel from Nuclear Power Reactors, Vienna	IMO Sub Committee on Implementation of IMO instruments (III 6)	
IMO Marine Environment Protection Committee (MEPC 74)	IAEA TRANSSC 38, Vienna	IMO Council 122	
WNTI SAMM in St.Petersburg, Russia	IMO Maritime Safety Committee (MSC 101)		
WNTI Board of Directors Meeting	IAEA EPRSC8		
	NSGC/15		
	WNTI Board of Directors Meeting		
September	October	November	December
WNA Symposium, London	IAEA TRANSSC 39	WNTI Advisory Committee	WNTI SAMM
IMO Sub-Committee on Carriage of Cargoes and Containers (CCC 6)	FORATOM Communication Advisory Group, Brussels	IAEA NSGC/6	WNTI Board of Directors Meeting
IAEA General Conference 63		IMO Assembly 21	IAEA EPRSC 9

WNTI Fellowship Programme

I lived and studied in Malmo at the World Maritime University (WMU) for 14 months. It became a home away from home for me and 123 other students from 45 different countries.

Esther Cecilia Derrick Maritime Law & Policy, World Maritime University, 2018

Esther Cecilia Derrick of St. Vincent and the Grenadines joined the World Maritime University (WMU) in September 2017, funded by the WNTI Fellowship. She is the 8th student to be funded by WNTI.

The MSc in Maritime Affairs programme offers seven areas of specialisation, namely Maritime Education & Training, Maritime Energy Management, Maritime Law and Policy and Shipping Management & Logistics. The programme helps persons in both the public and private sectors, in the field of maritime, ports and the ocean and is divided into three terms. The first (foundation) term covers introductory knowledge fundamental to understanding activities in the maritime field.

Courses covered are: International law, Maritime Conventions and International Institutions; the IMO System for Maritime Governance; Maritime Economic; Marine Environmental Science; Management and organisational Behaviour and Research Methodology and Study skills and these courses stretch across each specialisation. In the second term I focused on my



specialisation: Maritime Law and Policy. This is designed for those working in policy formulation or an advisory capacity at an executive level, both in the private and public sector.

It provides the essential knowledge and understanding of maritime administration issues and gives an in-depth appreciation and advanced knowledge of the law and policy related to international maritime transport. This term covers the following courses: Introduction to Roles and Obligations of Maritime Administrations, Law of the Sea and

Maritime Security, Maritime Human Element, Maritime Commercial Law and Law and Policy Related to the Marine Environment. In addition, the second term includes Field Studies, which demonstrate the theories taught during the term. It involves travelling to major maritime destinations that offer valuable insights into organisational practices and networking opportunities with professionals around the world. This year, field studies involved visits to:

- Denmark: Maritime Administration of Denmark and BIMCO

8 STUDENTS SPONSORED



- Chile: Maritime Administration of Chile, which is part of the Chilean Navy
- The Hague, Netherlands: the Directorate Maritime Affairs of Netherlands, the Paris MoU Secretariat, the International Court of Justice (ICJ), the Permanent Court of Arbitration (PCA), The Hague Academy of International Law and the Peace Palace Library
- Hamburg, Germany: the International Court of Justice (ICJ), the Permanent Court of Arbitration and the International Tribunal of the Law of the Sea (ITLOS)
- London: the IMO Headquarters, 99th Committee (MSC) and a session with the Secretary General, Mr. Kitack Lim. We also visited the UK P&I Club, the International Chamber of Shipping (ICS), the Royal Court of Justice, The Baltic Exchange and the London Maritime Arbitration Association

During my internship with WNTI in October 2018, I was given an insight into the role of the organisation that made it possible for me to study at WMU. The week was very interactive and informative. I learned about the role and history of WNTI in the transportation of nuclear waste and the processing of uranium ore from its mining to the final waste product. One of the highlights of my internship was the opportunity to visit Pacific Nuclear Transport Limited (PNTL) in Barrow and the Port of London Vessel Traffic Service Control Centre at Gravesend. The visit to PNTL, which

"During my internship with WNTI in October 2018, I was given an insight into the role of the organisation that made it possible for me to study at WMU".

included a tour of the MV Pacific Egret was hosted by Captain Walby. He gave a very enlightening and educational tour from the bridge of the ship to its cargo hold and explained the safety and security measures onboard the vessel.

Captain Chaplin also give insights into the ship's operation. This was an eye opening experience for me, as the thought of the transportation of nuclear waste through my country's water and the Caribbean has always been a nightmare for me. The tour has given me an understanding and appreciation of the safety measures of ships assigned for the transportation of nuclear waste. I have successfully completed my programme and on 4th November 2018, I joined my fellow classmates as we celebrated our success. It was pleasing that th WNTI Secretary General was able to attend my Graduation Ceremony. I have returned to my country and taken up my substantial position as Assistant Registrar of

Ships, beginning the journey of fulfilling my goal of assisting in the development of the maritime industry in my country and making our mark in the international maritime arena, while working with other maritime professionals locally, regionally and internationally.

On behalf of my country, St. Vincent and the Grenadines and myself, thank you WNTI for choosing me as your fellowship student for the academic year 2018 at the World Maritime University. You have given me the opportunity to acquire the knowledge and skills needed to enhance my contribution towards the improvement of maritime safety, environmental protection and ocean affairs in my country.

I take this opportunity to thank WMU - the President, the Professors and other members of staff for their support, guidance and nurturing through this journey.

Members' & Stakeholders' Voice

Challenges for the nuclear transport industry: an engineer's perspective on public engagement



Ulf Stahmer,
NWMO Canada,
WNTI Associate
Member

Like many countries, Canada is actively engaged in siting a deep geological repository for its inventory of used nuclear fuel. This work is being carried out by the Nuclear Waste Management Organization (NWMO).

Over the past decade at the NWMO, I have had the pleasure and challenge of communicating and engaging with the general public on technical topics related to used nuclear fuel transportation and the nuclear industry in general.

My experience is that although the public has limited knowledge about nuclear topics, they are interested and keen to learn. I have also found that the nuclear

industry often expresses itself in unfamiliar units and abstract measurements. My work in technical engagement has given me the opportunity to try communication techniques that address these challenges. There are many approaches to successful communication. An effective one, especially with an audience unfamiliar with the topic, is to provide a relatable analogy: a suitable comparison that associates the unfamiliar topic to something individuals already understand and accept.

Take the transportation of used nuclear fuel for instance: this takes place in the public domain and it emits radiation. Through listening to the public, we heard that there were sufficient concerns over the safety of this and the impact radiation exposure would have on citizens and the environment. So, as a result, we developed ways to improve communication and address these concerns. The levels of cosmic radiation we receive from space increases with altitude. When flying in an airplane, this naturally occurring radiation is about 15 times higher than the natural background radiation at the earth's surface.

Hence, the flight-hour was developed as a yardstick to help people understand radiological dose by comparing it to time spent in an airplane. For example, the dose received during a typical dental x-ray (measured in millisieverts, an unfamiliar unit) is roughly equivalent to the dose received during a two-and-a-half hour flight (a familiar activity).

Flight-time comparisons provide a simple way to quantify the low levels of radiation surrounding us in our daily lives. Some typical human activities and associated

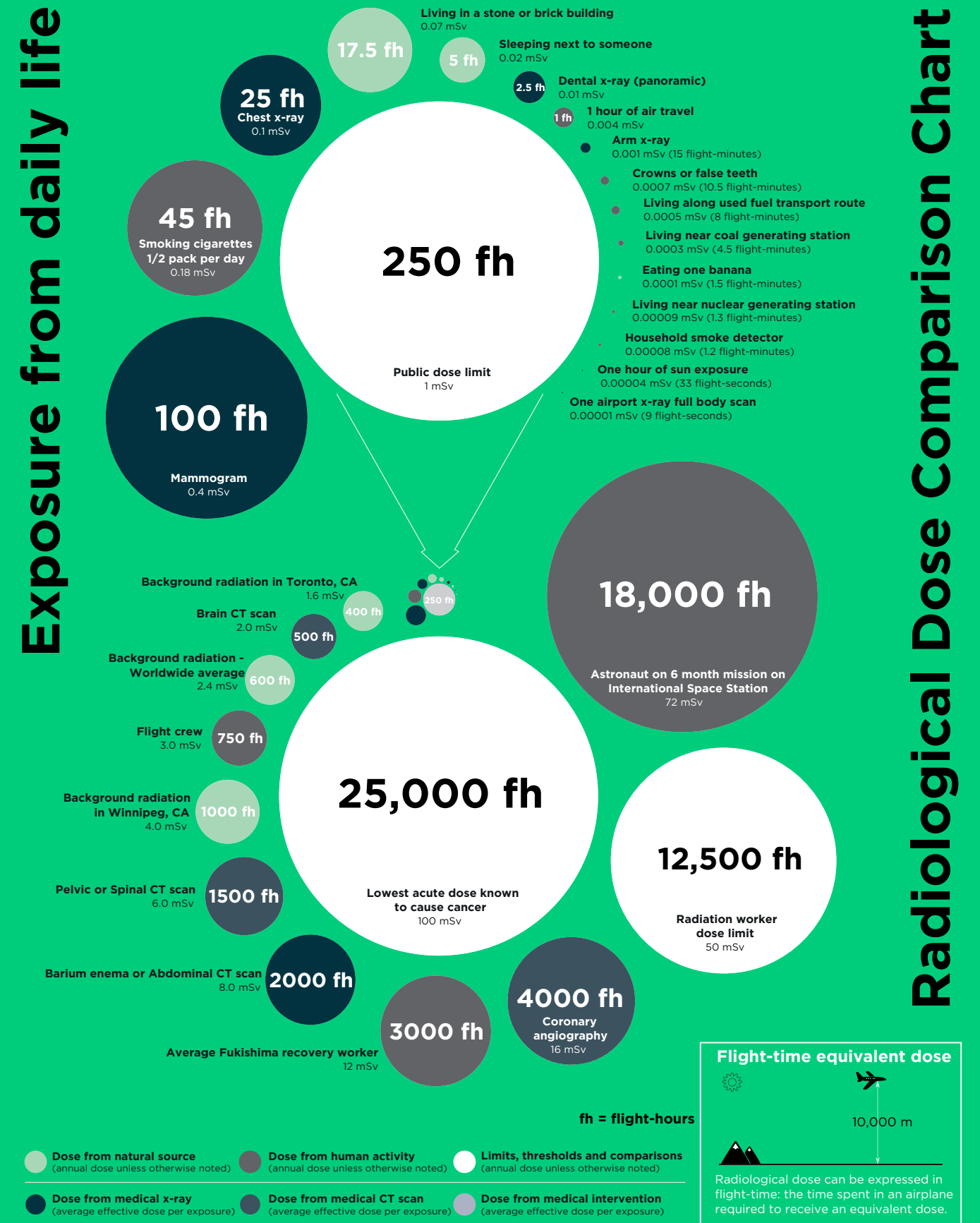
exposures are shown in the accompanying Radiological Dose Comparison Chart.

As for Canada's used nuclear fuel transportation program, an internal study on radiological doses estimated that the annual impact on the most exposed member of the public along the transportation route would be less than eight minutes of flight-time equivalent dose. It is important to note, however, that the flight-hour is an approximation created to provide an analogy and not a unit to be used for measurement.

In engaging with thousands of people over the past decade, I have learned the importance of providing relevant context. Rather than focusing on the quantity of fuel bundles or assemblies to be stored and the costs required to store them, I try to focus on the relatable and personal.

For example, a small handful of fuel pellets similar in size to a few AA household batteries produces enough electricity to power the average home for a year. And the one-time cost for the safe and secure long-term care of this handful of pellets is less than the cost of a family meal at a fast food restaurant. It's analogies like these that resonate with the public.

Exposure from daily life



NFT a WNTI associate member, is Launching a New vessel designed for Low-level waste



Nuclear Fuel Transport (Japan), WNTI Associate Member

Nuclear Fuel Transport (NFT) currently owns three vessels for transporting nuclear materials. One of them, Seiei maru, a vessel carrying low-level radioactive waste was built in September 1991. She has safely transported over 300,000 drums without any accidents to date. Seiei maru is scheduled to retire by the end of September 2019 at the age of 28. Therefore, we are currently building her successor.

Firstly, we have to comply with the special requirements "KAISA No. 450" for dedicated ships to carry low-level radioactive waste in addition to the domestic requirements for ordinary ships. KAISA No. 450 is domestic requirements to improve safety and the major features are as follows:

- Damage stability requirements (certain buoyancy remains even when the hull is damaged or flooded)
- Equipment requirements (fire protection

equipment, life-saving equipment, emergency power supply equipment, etc.)

Secondly, we have reflected on the lessons learned from the Great East Japan Earthquake.

Based on the lessons learned from the tsunami and great earthquake which hit East Japan, as well as the operational experiences of Seiei maru, the successor vessel will have improved the safety features.

For example, in order that the vessel can leave the shore urgently if there is a tsunami, we will have improved the maneuver ability. This includes boosting the propulsion method, boosting the thrust of the side thruster and enabling joystick maneuvering.

NFT are going to complete the successor vessel by the end of March 2019, and we

will continue the safe transport of low-level radioactive waste by using new vessel incorporating lessons learnt. NFT hope that sharing this new vessel design and our forward plans is of interest to the broader WNTI membership.

"we have reflected on the lessons learned from the Great East Japan Earthquake. Based on the lessons learned from the tsunami and great earthquake which hit East Japan, as well as the operational experiences of Seiei maru, the successor vessel will have improved the safety features."

Charles Mawer Serco, WNTI Associate Member



What WNTI means for you?

Serco was founded initially back in 1929 as RCA services Limited and became Serco in 1987. Serco works in the public sector primarily. With regards WNTI, Serco work to support International Nuclear Services with their operations by providing ship management services for Pacific Nuclear Transport Limited. In becoming involved with WNTI our goal is to get a better understanding of the movement of nuclear material around the world.

The range of WNTI membership means there is a great deal of expertise and knowledge. The Serco motto is "Bringing Service to life" and we believe membership of WNTI will indeed do this.

From one meeting, the conversations around different issues were very helpful and illuminating on the worldwide shipping of nuclear material.

What are your expectations for WNTI for the future?

We will aim to get involved and support the pertinent working groups within WNTI, engage in the meetings and sessions.

We hope this helps and that we can support WNTI and its members. WNTI is a great opportunity to meet people working in similar businesses, where experience can be shared, and common issues discussed.

Peter Buchan International Nuclear Services (INS), WNTI Board of Directors



What WNTI means for you?

"As a founder member of WNTI, International Nuclear Services (INS) is very proud of WNTI's achievements over the last 20 years and how it has adapted as the nuclear transport challenge has changed over that time.

WNTI's unique position means it has not only helped to shape regulations that enable safe, secure and reliable transports; but what is equally, if not more important to us, is that it provides a great opportunity for its members and key stakeholders to share knowledge and understanding.

WNTI is one of those organisations where the more you participate, the more you benefit. This is something we actively promote within INS. We feel we have a lot to offer with our wealth of experience across all facets of transport from problem identification, feasibility studies, stakeholder engagement, package design and licensing and physical transport, but we want to continue to improve and give our people the chance to develop too.

INS experts have led working groups, participated in seminars, provided training and have been seconded to WNTI as technical leads. Every one of them has found this experience enriching and rewarding.

We would encourage everyone to think of WNTI in this way, particularly as WNTI moves into its next decade in a new and more modern office, with an updated strategy. We're very excited to be part of its future, we hope its members are too and together we can continue to grow the valuable service we provide."

Public Communications & Publications

As part of the ongoing WNTI media relations programme, a network of contacts continues to be developed with the broader key industry publication companies. In addition, the WNTI is pursuing further opportunities outside the nuclear

sector to raise awareness of the exacting standards of radioactive materials transport, the importance of radioactive materials to society, and the issues caused by delay and denial of shipments of these materials.

Number of
website visits
in 1 year
82,039

Website

The WNTI public website provides information on nuclear transport including the nuclear fuel cycle, non-fuel cycle transport, regulations and packages.

WNTI is delighted to announce our new website launching in 2019, which will feature a comprehensive Members Intranet, covering upcoming events, as well as a dedicated area for each Working Group.

Publications

The WNTI suite of publications includes over 31 Standards, Good Practice Guides, Fact Sheets and Information Papers.

The WNTI publications are available on www.WNTI.co.uk

Information Email

The WNTI Information Email provides information on WNTI's industry reports and upcoming events. The Information Email is distributed to members bi-weekly.

Published Articles

WNTI was pleased to have an article published in the December edition of NEI magazine. This reflected the significant work of the WNTI Members in developing this system. More recently, the IAEA has indicated its intent to utilise this

**WNTI
STANDARDS**

**GOOD
PRACTICE
GUIDES**

**FACT
SHEETS**

**INFORMATION
PAPERS**

Publications Revision Process

WNTI has established a robust process dedicated to the revision of its Publications. This comprehensive process comprises, in accordance with the regulatory developments, update, review, revision, restructure or removal of the Publication.

The revision process is led by each WNTI Industry Working Groups involving experts. The process aims to ensure consistency between the publications and provide always more clarity, understanding and comprehensiveness of each document.

WNTI Standards

Standard for Packaging and Transport of Uranium Concentrates - Version 2

WNTI Standard - UF6 Cylinder Identification

WNTI Good Practice Guides

WNTI Transport Principles

Radiation Protection Programmes for Road Carriers, Sea Carriers and Port Handlers

Good Practice for the Securing of Drums of Uranium Ore Concentrate in 20' ISO Containers

Electronic Tracking for the Transport of Nuclear and other Radioactive Materials - Revision 1.0 - A WINS/WNTI International Best Practice Guide

WNTI Best Practice for Checking Shipping Containers Prior to Loading Drums of UOC and Before Dispatch

Nuclear Transport Security - Revision 1 - A WNTI/WINS International Good Practice Guide

Communicating Radioactive Materials Transport

Good Practice Guide for the Transport of UN3507 by Air

Good Practice Guide for The Installation of Socket Head Plugs in UF6 Cylinders

WNTI Fact Sheets

Safety Regulations Governing Radioactive Materials Transport

Package Types used for Transporting Radioactive Materials

Nuclear Fuel Cycle Transport - Front-End Materials

Nuclear Fuel Cycle Transport - Back-End Materials

The INF Code and purpose-built vessels

Quick facts on the transport of Nuclear Fuel Cycle Transport

The Safe Transport of Uranium Ore Concentrates

Preparation of Natural Uranium Samples for Shipment in an Excepted Package

Transport of Large Objects and Special Arrangement

Uranium Hexafluoride (UF6)

Nuclear Liability for Transport)

Industry Interpretation of TI and CSI Limits for the transport of UF6 packages by Sea

WNTI Information Papers

Radioactive Materials Transport - Industry Experience

Nuclear Fuel Cycle Transport - The IAEA Regulations and their Relevance to Severe Accidents

Uranium Concentrates Industry Best Practice for avoiding contamination of Packages and Shipping Containers in Multimodal Transports

Radioactive Materials Transport the International Safety Regime - An Overview of Safety Regulations and the Organisations Responsible for their Development

Radiation Dose Assessment for the Transport of Nuclear Fuel Cycle Materials

WNTI Glossary

New Fissile Exception Provisions in the IAEA Transport Regulations (SSR-6)



World Nuclear Transport Institute

Head Office

World Nuclear Transport Institute
WeWork
4th Floor
Aviation House
125 Kingsway
London
WC2B 6NH
United Kingdom

Tel: +44 (0)20 7580 1144

Tokyo Office

World Nuclear Transport Institute
WeWork
4th Floor
Aviation House
125 Kingsway
London
WC2B 6NH
United Kingdom

Tel: +44 (0)20 7580 1144

Washington Office

World Nuclear Transport Institute
WeWork
4th Floor
Aviation House
125 Kingsway
London
WC2B 6NH
United Kingdom

Tel: +44 (0)20 7580 1144

Regional Representation

Australasian, China, Northern
American and Southern African
World Nuclear Transport Institute
WeWork
4th Floor
Aviation House
125 Kingsway
London
WC2B 6NH
United Kingdom

Tel: +44 (0)20 7580 1144

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