



World  
Nuclear  
Association

# **WNA at Work**

**2014 Edition**

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Over the course of my first year as Director General of the World Nuclear Association (WNA), I have focused my efforts on reshaping the organisation to meet the evolving needs of our members more effectively. I have implemented several key changes, with the full help and support of WNA Chairman Tim Gitzel and the Board, starting with an essential restructuring of the Secretariat to focus on our new core activities. With the creation of three priority areas – industry cooperation, strategic communication and information management – WNA now has a more targeted approach, with clear management goals and business plans. Together the staff and I have created a more accountable, business-minded WNA that offers better value to all its members.



This is only the beginning. In 2014 we are pursuing a broad range of external outreach projects, as WNA becomes an even stronger advocate for the nuclear industry. We have strengthened our ties with our sister nuclear industry bodies and started collaborative communication initiatives. We are reaching out to key energy policy stakeholders such as the International Energy Agency and the World Energy Council – representing the nuclear industry's collective interests. We have revitalised the World Nuclear University (WNU) with new staff, a developed mandate and improved cooperation with our co-founding supporters – the International Atomic Energy Agency, the OECD Nuclear Energy Agency and the World Association of Nuclear Operators.

At the same time, we continue to improve the quality of member benefits such as networking and information sharing opportunities. Our conferences saw major improvements last year, with strong programmes and emphasis on innovation and interactivity. Our Working Groups, where joint positioning on industry matters is discussed among members, are further streamlined.

Even in these challenging times the nuclear industry is growing and there are many positive prospects around the world. This report will give you an overview of our achievements in the past year and an outlook on future projects. I encourage all members to make the best use of WNA and I look forward to a great year ahead.

A handwritten signature in black ink that reads "Agneta Rising".

Agneta Rising, WNA Director General

2013 proved to be another interesting and challenging year for the nuclear industry – the long-term outlook remained very positive while near-term uncertainty continued to challenge all. 2013 also marked a year of change for WNA. Under the leadership of Director General Agneta Rising, WNA realigned to better serve the needs of its members.



The international nuclear industry is dynamic and growing and we must continue to work together to strengthen its reputation, enhance safety and security, and ensure the full incorporation of lessons learned. You will see in the following pages that WNA is working hard in these areas.

I want to thank Agneta and her team for the good work they have done.

A handwritten signature in blue ink that reads "Tim".

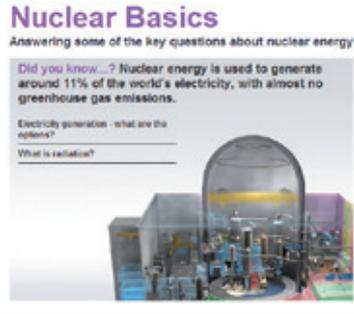
Tim Gitzel, WNA Chairman

# Highlights of 2013

Agneta Rising becomes Director General of WNA on 1 January 2013, bringing the experience of over 30 years in the Vattenfall Group, holding multiple expert and advisory positions in international bodies and serving as Chair of the Board of the Uranium Institute when it was developed into the World Nuclear Association.



www.world-nuclear.org is re-launched with a brand new design, featuring a new *Nuclear Basics* section and improved navigation.



Agneta Rising takes part in the global leaders panel at AtomExpo 2013 and represents the global nuclear industry at the IAEA International Ministerial Conference on Nuclear Power in the 21st Century in St. Petersburg.



WNA becomes a Special Liaison Organisation of the International Commission on Radiological Protection.

WNU holds a one-week course in Brazil.

WNA chairs the final meeting of the IAEA International Committee on Denials of Shipment in Vienna.

WNA is invited to be an observer in the IAEA Nuclear Security Guidance committee.



The Loop, WNA's newsletter for members, is launched, allowing representatives of all 180 member companies to stay in touch with the Secretariat's activities.

**The Loop**

WNA and the Nuclear Energy Institute collaborate for the ninth consecutive year to host the World Nuclear Fuel Cycle conference in Singapore. WNA Working Groups meet alongside the conference and the WNA Board holds its first meeting of the year.

WNA Working Groups hold their first meetings of the year in London, setting their plans for 2013.



Agneta Rising implements a new structure for WNA and, after an internal recruitment process, appoints her management team to head four new departments: Industry Cooperation, Information Management, Strategic Communication, and Finance and Administration.

As part of a tour in Asia, Agneta Rising gives keynote addresses at the 46<sup>th</sup> Japan Atomic Industry Forum Annual Conference in Tokyo and the 2013 International Congress on Advances in Nuclear Power Plants on Jeju Island, Korea.

The WNA Symposium takes place in London, using for the first time a more discussion-based panel format and integrating social media through a purpose-built app. Working Groups meet alongside Symposium and the WNA Board holds its second meeting of 2013.



The Secretariat conducts its first member satisfaction survey.

Agneta Rising is awarded the Atoms for Peace Prize in Assisi, Italy, in recognition of her work advancing peaceful uses of nuclear energy.



Gathering international experience, WNA observes a US emergency drill from the offices of the Nuclear Energy Institute in Washington DC.

July

September

October

November

January 2014

The WNU holds one-week courses in Seoul and Beijing, and the Summer Institute starts in Oxford, UK, gathering 72 fellows from 25 countries.



Agneta Rising talks about "better, smarter regulatory governance" at the World Energy Congress in Daegu, South Korea, WEC's triennial event discussing critical developments in the energy sector.

Agneta Rising presents at the International Commission on Radiological Protection (ICRP) Main Commission during ICRP 2013 in Abu Dhabi to explain WNA's role and support, and convey industry concerns about the system of radiological protection.

The WNU Summer Institute is awarded Nuclear Engineering International magazine's Nuclear Training Awards prize for best training programme shorter than one year.



The WNA publishes *The Global Nuclear Fuel Market: Supply and Demand 2013-2030*, the industry's leading reference on the subject published biennially.

The WNA hosts a meeting of national, regional and international nuclear associations from around the world, to share communication best practice and messages.

# Introducing WNA

## Mission

The World Nuclear Association (WNA) is the international organisation that represents the global nuclear industry. Its mission is to promote a wider understanding of nuclear energy among key international influencers by producing authoritative information, developing common industry positions, and contributing to the energy debate, as well as to pave the way for expanding nuclear business.

## Challenges

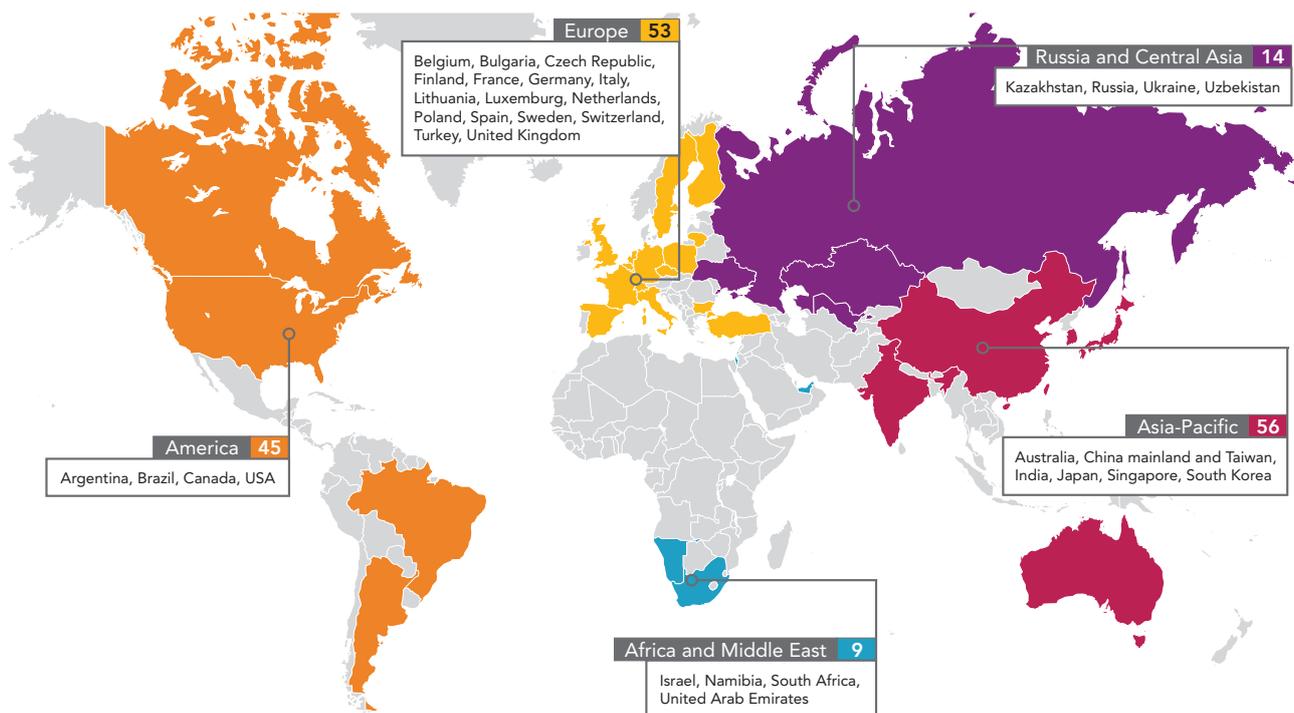
The nuclear industry holds a unique place in the world economy, both in its fundamental benefit – delivering clean, reliable, affordable energy on a large scale – and in the challenges it faces, which range from the technological sophistication of its products, high capital costs of its plants, complexity of its supply chain, and concerns raised by some sections of the general public over this form of energy.

To address these challenges, the industry needs to work together in a coordinated way at national, regional and international level. WNA, with its membership including major companies in the nuclear industry around the world and a global mandate to communicate about nuclear energy, provides a platform for sharing and advancing best practice and common messages.

WNA aims to work alongside other organisations, including the inter-governmental bodies for technical and scientific cooperation in nuclear energy, the industry's reactor safety organisations, and other regional and national nuclear associations around the world.

## Presence

WNA members represent all aspects of the global nuclear industry: uranium mining, conversion, enrichment and fuel fabrication; reactor design and nuclear generation; nuclear engineering, construction, and waste management; and research and development. Other members provide international services in nuclear transport, law, insurance, brokerage, industry analysis and finance.



Geographical representation of WNA's 177 members as of 31 December 2013

## Activities

### Industry cooperation

WNA acts as a global forum and commercial meeting place for leaders and specialists representing all aspects of the nuclear industry. It provides a vehicle for members, through Working Groups, to shape joint positions on economic, safety, and environmental issues. Through these Groups, WNA represents the industry in key world forums that shape the nuclear industry's regulatory and policy environment.



### Strategic communication

With a goal to increase global support for nuclear energy among key stakeholders, WNA's role is to represent the nuclear industry's interests where the energy debate is taking place. By coordinating on key messages with our partners, the WNA delivers targeted information to decisions-makers and influencers, including the media and international organisations that have an interest in energy-related issues.

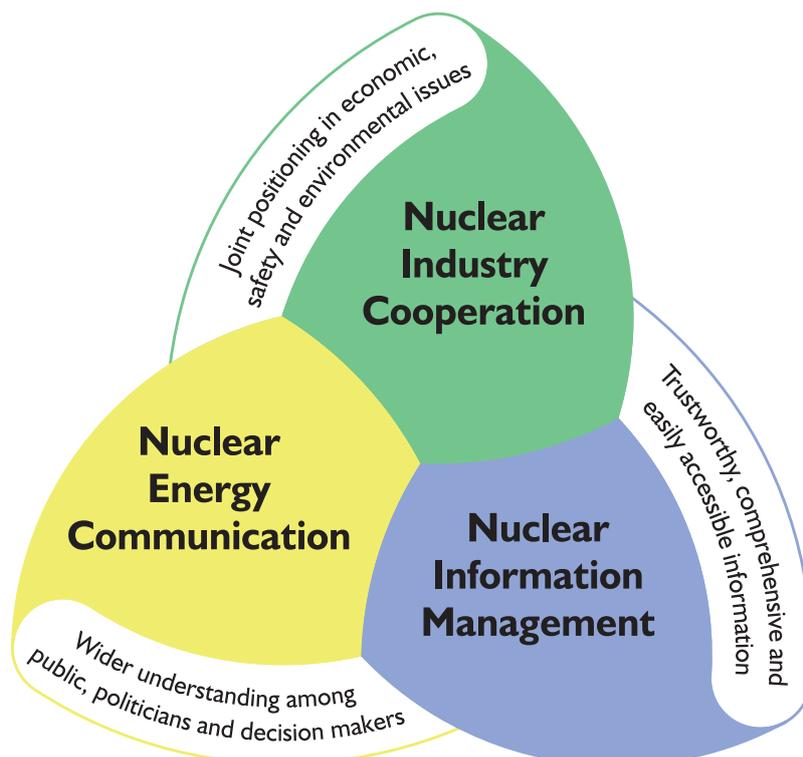


### Information management

The WNA provides trustworthy, comprehensive and easily accessible information on nuclear power via the WNA website, which serves as the world's leading nuclear information source, and via World Nuclear News (WNN), the world's leading online news service on developments related to nuclear power.

### World Nuclear University

WNA works in partnership with the IAEA, WANO, and the OECD-NEA in projects to enhance nuclear education and build nuclear leadership.



WNA strategic process

# Working Groups

The Working Groups are forums through which the enterprises of the global nuclear industry share best practice, conduct analysis, and develop consolidated positions on economic, safety and environmental issues. Several Groups act as the interface for industry at international policy-making organisations, such as the International Atomic Energy Agency (IAEA), the International Commission for Radiological Protection (ICRP) and the Nuclear Energy Agency (NEA) of the OECD.

Each Group is chaired by an expert from WNA membership, and has a mentor assigned to it from the WNA Board. Administrative and technical support is provided by the WNA Secretariat.

Working Groups typically gather three times a year with meetings taking place in January in London, in the spring around the World Nuclear Fuel Cycle conference or at another location, and in September around the WNA Symposium in London. Working Groups draw on 500 participants.

In January 2015, to coincide with the 60<sup>th</sup> anniversary celebrations of the Chinese nuclear industry, WNA will team up with the Chinese Nuclear Society to hold Working Groups in Beijing.

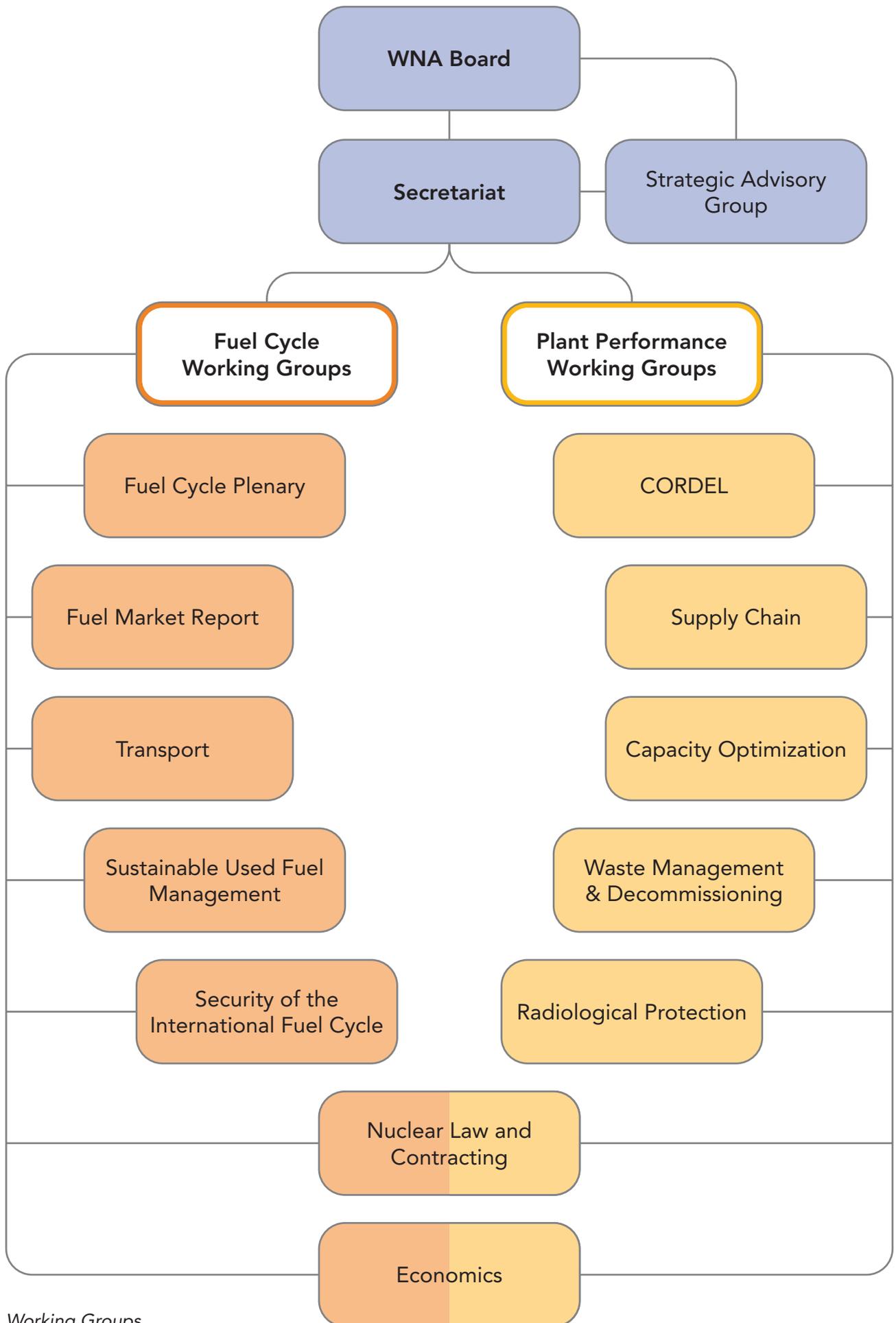
WNA member representatives can view all Working Group reports, documents, presentations and contact lists on the members website.

## Working Group Structure

- *Fuel Cycle* Groups are focused on the fuel market, security of supply of fuel, and used fuel management.
- *Plant Performance* Groups look at quality, safety and efficiency issues at plants throughout their life cycle.
- *Cross-cutting* Groups (e.g. Nuclear Law and Contracting; Economics) come under both Fuel Cycle and Plant Performance Groups.

## Schedule for Working Groups

Dates	Location	Working Groups
7-8 April 2014	San Francisco, US (around WNFC)	Fuel Cycle
5-6 May 2014	Frankfurt, Germany (around DATF annual meeting)	Plant Performance
5-6 May 2014	Charlotte, US	Supply Chain
13 May 2014	Bethesda, US	CORDEL
4-5 June 2014	Paris, France	Radiological Protection
8-10 September 2014	London, UK (around WNA Annual Symposium)	All Groups
w/c 12 January 2015	Beijing, China	All Groups
w/c 20 April 2015	Prague, Czech Republic	Fuel Cycle



Working Groups

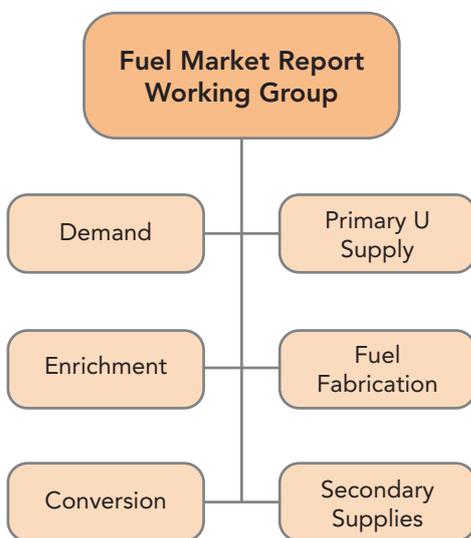
# Fuel Cycle Working Groups

## Fuel Market Report

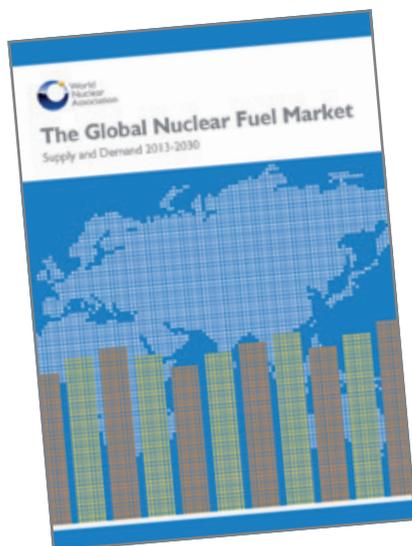
**Co-Chairs:** Hendrik de Baenst, Synatom;  
Pierre Durante, AREVA

**Staff Director:** Ian Emsley

Published since the 1970s, the biennial *Global Nuclear Fuel Market* report compiles data from WNA member companies, national sources and international agencies to produce an authoritative projection of global supply and demand. The Group is broken down into sub-groups, which focus on different areas of the fuel cycle. The participation of experts from all areas of WNA membership (buyers, producers, consultants) in its compilation gives the report its unique authority.



*Fuel Market Report sub-groups*



## Transport

**Chair:** Francisco Tarin, ENUSA

**Staff Director:** Serge Gorlin

This Group acts as a forum for communicating industry developments and best practice, as well as for identifying and resolving issues relating to the shipment of radioactive materials. The Group's main focus is commercial issues affecting the transport of front-end nuclear materials.

The Group is represented on the IAEA's Transport Safety Standards Committee (TRANSSC) and works closely with relevant organisations working in the transport domain, such as the World Nuclear Transport Institute.



In 2013, this Group's Staff Director, Serge Gorlin, chaired the eighth and final meeting of the International Steering Committee on Denials of Shipment (ISC-DOS), hosted by the IAEA. In its report, the ISC-DOS recommended maintaining a streamlined set of activities to combat denials. The report has since been accepted by the IAEA Director General's office, demonstrating an ongoing commitment by the IAEA to resolving this issue.

The Group organised a one-and-a-half-day Class 7 transport workshop in Singapore around the WNFC conference in 2013. The workshop was attended by the Singaporean competent authority as well as port authorities, shipping companies and other regulators in the region. The workshop included a visit to Singapore port, an essential hub for the transit of fuel cycle material – notably that destined for China or India.

In 2014, the Group will conduct a survey of the WNA membership to help identify major issues in the global shipment of radioactive material. The results of the survey will be used to help target training activities, notably that led by the IAEA.

## Security of the International Nuclear Fuel Cycle

**Chair:** Pat Upson, Consultant

**Staff Director:** Isis Leslie

The original mission of this Group, set up in 2005, was to produce a report on the evolving policy debate surrounding sensitive fuel cycle technologies, with particular reference to the IAEA initiative on Multilateral Approaches to the Nuclear Fuel Cycle. The report was revised in 2011. The Group's mission was extended in 2013 to include security in the wider sense.

As of 2013, the Group has represented WNA on the IAEA's Nuclear Security Guidance Committee (NSGC) as an observer. NSGC's role is to review and approve draft IAEA guidelines relating to security.

In 2014, the Group will conduct a survey throughout the WNA membership on security policy and governance. This will give a baseline for analysis of the current status of security in the industry. The Group will also be formulating industry approved messages for the WNA Chairman to communicate at the Nuclear Industry Summit taking place in March in the Netherlands alongside the government-level Nuclear Security Summit. The Group will continue to promote the industry views on the importance of a robust fuel supply market as a contributor to non-proliferation.

## Sustainable Used Fuel Management

**Chair:** Henri Zaccai, AREVA

**Staff Director:** Isis Leslie

This new Group aims to gather the views of the nuclear industry and stakeholders on current and best practice in sustainable used fuel management, and to produce guidelines for the industry to use in communication.

In 2013, the Group established three task forces: to assess the different options for sustainable used fuel management (on the basis of a survey); to establish an effective and mutually beneficial relationship with the IAEA; and to look into methods and options for fulfilling the Group's role in communications with different stakeholders.

## Fuel Cycle Plenary

**Chair:** Emmanuelle Verger, EDF

**Staff Director:** Serge Gorlin

The Plenary is WNA's largest members forum and focuses on developments in nuclear fuel and trade. Sessions consist of formal presentations and panel discussions, as well as reports from interest groups in the areas of primary uranium supply, conversion, enrichment, fuel fabrication, secondary supply and demand. To serve as a practical means for keeping members informed about all WNA activities in the fuel cycle area, the Plenary receives periodic reports from relevant Working Groups.



# Plant Performance Working Groups

## Cooperation in Reactor Design Evaluation and Licensing (CORDEL)

**Chair:** Gerry Head, GE Hitachi

**Deputy Chairs:** Hae Ryong Hwang, KEPCO E&C; Xavier Pouget-Abadie, EDF

**Staff Directors:** Barry Kaufer; Andrew Wasyluk

CORDEL's mission is to promote the standardisation of nuclear reactor designs. This can be achieved only by the development of a worldwide nuclear regulatory environment where internationally accepted standardised reactor designs, certified and approved by a recognised competent authority in the country of origin, can be widely deployed without major design changes at the national level. In practice, this would mean that generic design certification and safety evaluations approved by a recognised competent authority in the country of origin would be acceptable in other countries without the need to duplicate or repeat the entire design certification process.

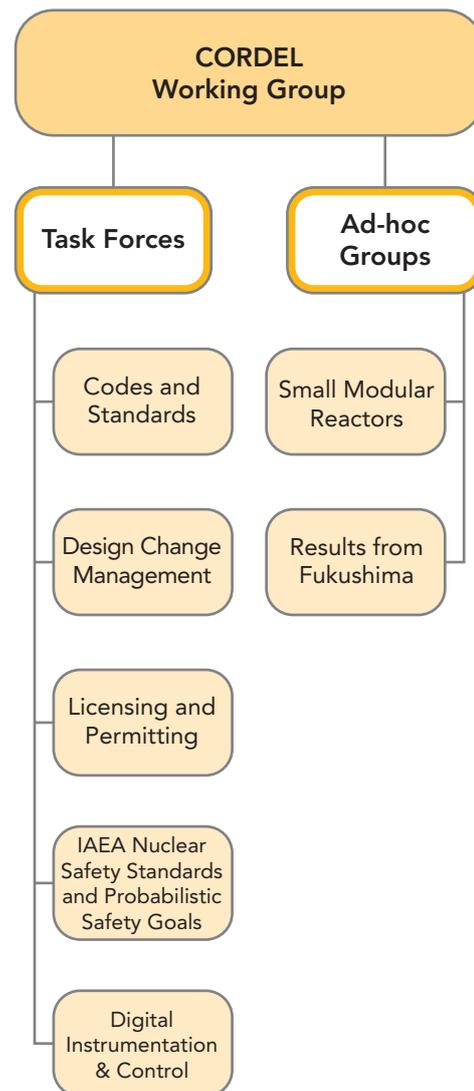
In 2013, CORDEL issued its Strategic Plan, which outlines the general directions and activities CORDEL plans to undertake during the next five-year period. Alongside general strategy, the report includes CORDEL activities, priorities and interactions with customers in order to meet its objectives.

The key tasks in 2014, to be undertaken by the various CORDEL Task Forces and sub-groups, will be as follows:

- The Codes and Standards Task Force will issue reports on the requirements for non-destructive evaluation (NDE) personnel qualification and on mechanical design stress analysis including elastic stress analysis rules, stress limits and non-linear analysis methodologies.
- The Design Change Management Task Force will update and reissue its report on design change management. New reports on design authority and owners groups will be developed.
- The Licensing and Permitting Task Force is planning an international workshop with the Nuclear Law and Contracting Working Group in which both industry and government/regulators can further explore areas of harmonisation.
- The IAEA Nuclear Safety Standards and Probabilistic Safety Goals Task Force will maintain oversight on the work being performed by the IAEA Nuclear Safety Standards Committee

(NUSSC) to ensure that proper input related to industry concerns is provided. It will also focus on the development of an integrated safety goal concept, which is an essential element of integrated risk-informed decision making (IRIDM).

- The Digital Instrumentation & Control (I&C) Task Force, created in 2013, is developing a report on safety classification. Throughout 2014, it aims to establish an expanded membership within CORDEL and with codes and standards organisations in order to meet its strategic commitments.
- The Small Modular Reactors Ad-hoc Group is helping to establish a path towards harmonised and regulated SMR deployment globally. Initial efforts have been focused on developing a clear recognised definition for SMR and an interactive roadmap for SMRs.



CORDEL sub-groups

## Supply Chain

**Chair:** Juan Molina, Westinghouse

**Staff Director:** Greg Kaser

As nuclear power spreads around the world, economic factors and initiatives for localising production are driving the internationalisation of the supply chain. The industry faces common challenges in understanding and meeting national technical regulations, in achieving vendor and product qualification and quality assurance certification, in monitoring and identifying market trends, and in communicating with stakeholders on industrial developments. The role of the Group is to support WNA members in these tasks with a view to ensuring timely and efficient construction.

The remit of the Group encompasses the sharing of general information and best practice and addressing the common issues in the manufacture of components and systems and associated services to facilitate safe, timely and cost-efficient construction and refurbishment of nuclear power plants.

In 2013, the Group established a Task Force on Vendor Oversight and Control of Suppliers (VOCS) to develop a concept for an industry-wide approach to strengthening capability along the supply chain that enhances safety and offers a common approach to quality control. It also undertook a survey of WNA member organisations experienced in complying with export controls.

In September 2014 the Group will publish its biennial *Market Report* consolidating key data and information on the nuclear supply chain.



## Capacity Optimization

**Chair:** Mike Baron, Global Nuclear Associates

**Staff Director:** David Hess

This Group identifies means by which nuclear power plant operators worldwide can improve the performance of their plants. The Group focuses on areas relevant to plant economics such as availability, reliability, flexibility and capacity.



Highlights for 2014 include:

- Publication of the third edition of the Group's *Optimized Capacity* report.
- Group members will participate in an IAEA Task Force contributing to IAEA TecDoc 1383, *Guidance for Optimizing Nuclear Power Plant Maintenance Programmes*, due for publication in December 2014.
- The Group will host an IAEA technical meeting, Maintenance Optimization to Improve Nuclear Power Plant Performance, around the WNA Symposium in September.

## Waste Management & Decommissioning

**Chair:** tbc

**Staff Director:** Binika Shah

This Group monitors developments and shapes industry positions with a view to improving the system of waste management and decommissioning. It promotes the appropriate re-use and recycling of material – and safe disposal of wastes – from nuclear sites. It also represents industry interests on the IAEA Waste Safety Standards Committee (WASSC).

The Group has produced two WNA Position Statements: *Safe Management of Nuclear Waste and Used Nuclear Fuel* and *Safe Decommissioning of Nuclear Industry Sites*. More recently, it has produced the WNA Statement *Towards Greater Efficiency in the Management of Low-Level Radioactive Material that Concurrently Supports Reuse, Recycling and Disposal*.

At its meetings in 2014, the Group will continue to facilitate exchange between those companies with experience of decommissioning and those new to the field or planning for the future. It will further share practical lessons learned on the optimal radiological protection of workers during nuclear power station decommissioning, and during the transition period following cessation of generation. In April the Group will make a presentation on behalf of WNA at the Recycling of Metals Arising from Operation and Decommissioning of Nuclear Facilities conference hosted by Studsvik.



## Radiological Protection

**Chair:** Willie Harris, Exelon

**Deputy Chair:** Marcel Lips,  
Kernkraftwerk Goesgen-Daeniken

**Staff Director:** Binika Shah

This Group aims to promote improvements in the international system of radiological protection by developing and advocating scientifically sound positions of policy and practice. The Group has Special Liaison Organisation status with the International Commission on Radiological Protection (ICRP), and has observer status on the Radiation Safety Standards Committee (RASSC) of the IAEA.

2013 highlights include:

- Establishing a project to review the available scientific evidence surrounding the contribution of radiation to cardiovascular and cerebrovascular disease, as well as to lens of the eye effects. The debate on this topic has the potential to lead to significant changes to the international system of protection with new dose limits already being incorporated into the IAEA Basic Safety Standards. The project, running over two years, should equip the nuclear industry with an informed and credible voice over how to incorporate such effects into the international system of protection.
- The Group supported the first ever address by a WNA Director General to the ICRP Main Commission in Abu Dhabi. It also fielded an expert speaker in the non-cancer effects technical session at the accompanying ICRP Symposium.
- Members of the Group participated in an IAEA Technical Meeting on Protection of the Environment where they advocated a simple, scientifically sound and coherent system which is in proportion to the risks involved.

As well as publishing a report on its non-cancer effects research, the Group in 2014 plans to:

- Gather industry views on the ICRP Task Group 84 report *Initial Lessons Learned from the Nuclear Power Plant Accident in Japan vis-à-vis the ICRP System of Radiological Protection*.
- Continue to monitor and coordinate industry participation in the work of international organisations on radiological protection of the environment such as IAEA, ICRP and OSPAR.
- Continue the work started by the Uranium Mining Standardisation Working Group's Radon Task Group to monitor scientific and policy developments arising from the ICRP on protection against radon exposure.

# Cross-cutting Working Groups

## Economics

**Chair:** Milt Caplan, MZ Consulting

**Staff Directors:** Ian Emsley; Greg Kaser

This Group's primary focus is on developing a better understanding of the capital costs of new nuclear plants and comparing projections showing the potential role of nuclear power in the 21st century.

In 2014, the Group will focus on:

- Collecting and discussing new data demonstrating the strong economics of existing nuclear power plants and the arguments for continuing to operate them.
- Contributing to the debate on state aid and nuclear power, in particular to submitting comments to the EU investigation into UK government support for Hinkley Point C.
- Monitoring localisation activities and documenting the relationship between localisation and nuclear overnight costs.
- Contributing to surveys of nuclear costs, in particular the forthcoming IEA/NEA publications: *Technology Roadmap – Nuclear Energy to 2050*, *World Energy Outlook 2014* special chapter on nuclear, and *Projected Costs of Generating Electricity 2014*.
- Examining heavily renewables-dependent energy strategies to highlight their fundamental economic weaknesses and adverse effects on nuclear.

## Nuclear Law and Contracting

**Chair:** Angela Thornhill, GE Hitachi

**Staff Director:** Virginie Ryan-Taïx

This Group was established with a mandate to raise awareness among WNA membership on the legal issues facing the nuclear industry. It also liaises with other WNA Working Groups to assist when necessary on ways to respond to specific legal challenges.

The Group also focuses on increasing interaction between other WNA Working Groups with common work areas or objectives, such as CORDEL and Supply Chain.

In 2014, the Group plans to:

- Participate in the organisation of a follow-up workshop on licensing and permitting.
- Provide assistance to the CORDEL SMR Task Force on legal issues surrounding the development of small modular reactors.
- Provide support to the Supply Chain Working Group initiative(s) on export control regimes.
- Start developing a library of nuclear-related cases accessible to WNA members.

Olkiluoto 3 under construction  
Photo courtesy TVO



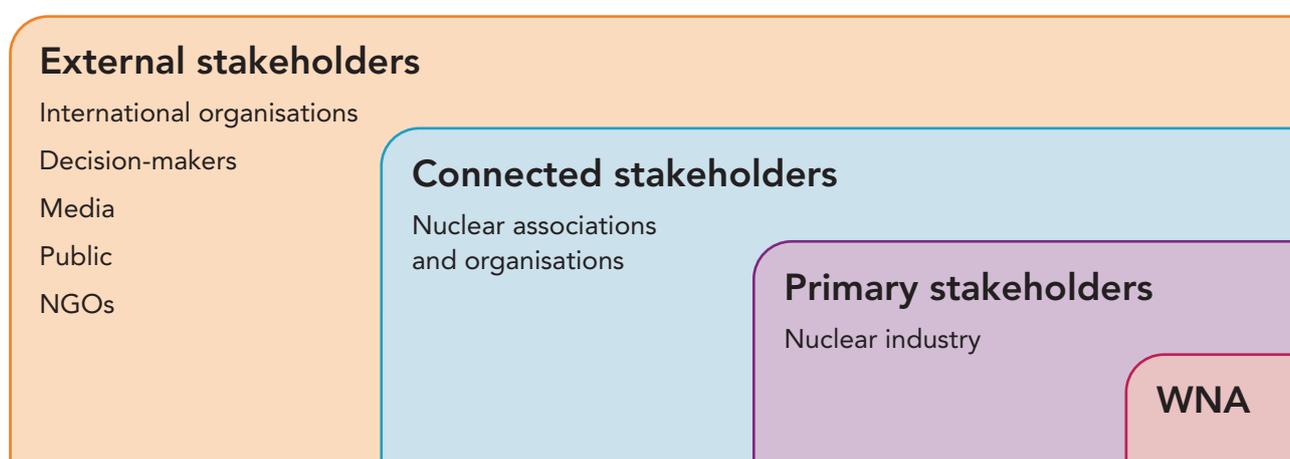
# Stakeholder Outreach

Outreach activities are central to WNA's overall mission to achieve greater support for nuclear power internationally. A new emphasis was put on this activity in 2013: influencing key international decision-makers in the energy arena became part of WNA's strategy, and a Strategic Communication department was created to that effect.

WNA's primary stakeholders are its members, the global nuclear industry, but to carry out its mission efficiently, WNA needs to interact with a variety of people and organisations. This requires working collaboratively with partner organisations, and reaching out to international bodies and influencers who have an interest in nuclear or other energy-related issues.

Activities in 2013 focused on identifying and analysing WNA's stakeholders, and starting to carry out actions to disseminate relevant information and engage with them.

WNA's main communication tool has traditionally been its website. Although online activities remain a major platform for WNA, emphasis is now put on direct engagement with key stakeholders.



## [www.world-nuclear.org](http://www.world-nuclear.org)

The WNA public website is the leading information source on nuclear energy. Website usage has grown significantly over the past five years, with four million visits to the site in 2013 (up from 3.5 million in 2012). In 2013 WNA launched a refreshed, reorganised website, which provides separate sections for different users. In addition to the encyclopaedic *Information Library*, the site offers a new *Nuclear Basics* section, which provides key information and answers to common questions in a more concise and accessible format for those who are less willing or able to research the information in the *Information Library*.

## Social media

WNA communicates to a broad public audience through social media. On Facebook 6,500 people have 'liked' the WNA page and over 5000 people follow WNA's Twitter account. These accounts are used to promote WNA events, share articles on topical issues and also engage in debates.



## 2013 Outreach Activities

### Decision-makers

*Build relations with opinion formers and influence decisions*

- WNA's participation at the 2013 World Energy Congress, the World Energy Council's triennial event, was an opportunity to engage with this major organisation.
- An important achievement in 2013 was to become Special Liaison Organisation to the International Commission on Radiological Protection. This gives WNA the opportunity to better represent the industry at a time when significant changes to the system of radiological protection are being considered.
- For 2014, WNA is aiming to reach out to financial institutions who have a vital role in the financing of new nuclear projects.
- WNA will also contribute to the IEA *World Energy Outlook 2014*, the high level publication from the International Energy Agency, which this year includes a chapter on nuclear energy.

### Nuclear associations and organisations

*Work with partners to communicate with consistent messages*

- In 2013, WNA focused on establishing good relations with partner organisations, including regular updates with NEI, Foratom and WANO; and cooperating with the Japan Atomic Industry Forum on several activities including a video about contaminated water at Fukushima.
- WNA maintains a network of nuclear associations to rapidly share information in emergency situations, and to share communication best practice and common messages.
- WNA has a long-lasting relationship with the OECD-NEA and the IAEA, cooperating with both on several issues.

### Media

*Provide authoritative and timely information to the international press and trade media*

- In addition to responding to media enquiries, WNA issued several press announcements on major news relevant to the global nuclear industry.
- The Secretariat is now gearing up to engage more proactively with international media in 2014, and will be creating a dedicated section for the press on its website.

### Nuclear industry

*Provide the right tools and platform to our members and potential members*

- 2013 saw many improvements in how WNA communicates with its members: creation of *The Loop* newsletter and a new member information package.
- The premier industry event, the WNA Symposium, attracted around 650 people and featured high-level interactive panels in 2013.
- To reach out to more people in the industry, the *About WNA* section of the website is now available in Japanese.
- A brand new members website with improved functionality will be launched in 2014.

### Public

*Contribute to the debate and build public trust on nuclear*

- In 2013, the WNA public website was re-launched with a new look and structure designed to help users navigate the site more easily, and a new *Nuclear Basics* section with non-technical information about nuclear.
- The WNA site had 6.2 million page views in 2013, up from 5.2 million in 2012.
- WNA, WNN and WNU Twitter, Facebook and LinkedIn accounts are becoming evermore popular and ensure an increased worldwide reach.

# Events and Partnerships

WNA acts as a global forum and business meeting place for leaders and specialists in the nuclear industry. It runs its own events, but also co-hosts and partners other conferences, to reach out to various regions, organisations and people worldwide.

## WNA Symposium 2013

The WNA Symposium in September in London is the place where the global nuclear industry meets every year. A two-day conference is held alongside a large exhibition, in conjunction with WNA Working Group meetings.

Delegates have a unique chance to network at meetings and social events in London's famous venues, such as the 2013 welcome reception at the Science Museum and the gala dinner at the Dorchester Hotel.

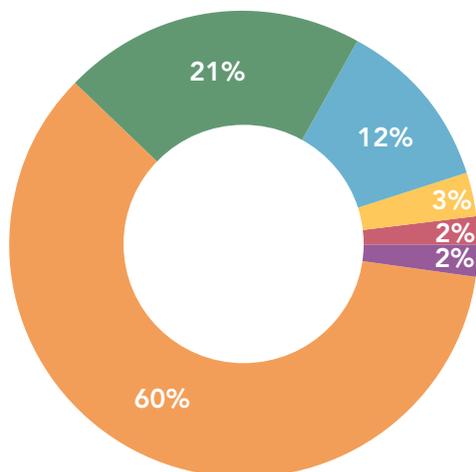
Delegates can also interact with over 30 exhibitors – vendors, suppliers, brokers, services, generators.

In 2013 the Symposium App proved to be a successful tool used by 70% of delegates to interact, share and download presentations.

635 delegates  
34 countries represented  
33 international speakers



2013 Leaders Panel featuring Vincent de Rivaz (EDF Energy), Lee Hee-Yong (Kepco), Kirill Komarov (Rosatom), Luc Oursel (AREVA), Danny Roderick (Westinghouse), Jay Wileman (GE Hitachi Nuclear Energy), Frank Yee (Candu Energy)



- CEO/MD/VP/GM/Director
- Press
- Senior Manager/Manager
- Executive/Analyst
- Engineer
- Other

2013 Symposium delegates

*“The WNA Annual Symposium provides the best opportunity for connecting with nuclear industry leaders from around the world. Papers from leaders within and outside the industry provide valuable insights and topics for further discussion.”*

**Bob Van Namen,**  
Senior Vice President and COO, USEC

## World Nuclear Fuel Cycle conference 2013

Every April, WNA runs the WNFC conference jointly with the Nuclear Energy Institute. The conference provides an international forum to discuss issues affecting the commercial nuclear fuel cycle. Leading industry experts provide information and insights to help the industry navigate through the complex and changing fuel marketplace.

The conference rotates around the world each year enabling people from all continents to attend. WNFC 2013 was held in Singapore, allowing more representatives from Asia to come.

WNFC also offers a technical tour alongside the conference. In 2013, participants visited the Rolls-Royce Selat Campus, the group's most modern manufacturing, training and research facility.



## Partnerships

WNA partners with events and conferences to get exposure to parts of the world where it is less present, to reach out to potential members especially in emerging countries, and to have an opportunity to speak and represent industry views in wider energy debates.

In the last year, WNA partnered events in China, Malaysia, Turkey, United Arab Emirates and Vietnam.

## Where will you meet us this year?



**WNFC will be in San Francisco  
8-10 April 2014**



**WNA Symposium will be in London  
10-13 September 2014**

## We are also supporting several events in 2014:

- 6-8 May: Annual Meeting on Nuclear Technology, Frankfurt, Germany
- 11-15 May: European Nuclear Conference, Marseille, France
- 13-14 May: African Utility Week, Cape Town, South Africa
- 29-30 May: 10th Annual Nuclear Energy Congress, Beijing, China
- 30-31 May: Istanbul Nuclear Plants Summit, Turkey

# Information Library

Providing base-load supply of information on the status of the nuclear power industry globally, the 150+ papers in the WNA website's *Information Library* received 4.8 million page views in 2013. WNA members benefit not only directly from the *Information Library* as a unique information resource, but also indirectly as it supports more informed reporting and discussion on nuclear power and all its surrounding issues.

The screenshot shows the World Nuclear Association's Information Library website. The header includes the WNA logo and navigation links for 'Nuclear Basics', 'Information Library', and 'The WNA'. A search bar and 'Members Login' are also present. The main content area is titled 'Information Library' and states that it consists of nearly 150 frequently-updated information papers. Below this, there are several columns of links categorized into 'Facts and Figures', 'Nuclear Fuel Cycle', 'Current and Future Generation', and 'Energy and Environment'. A central article titled 'Nuclear Radiation and Health' is highlighted, with a sub-header 'Updated February 2014'. The article discusses radiation exposure, health risks, and the benefits of nuclear power. A sidebar on the left contains a section on 'Small Nuclear Power Reactors'. The footer includes social media icons, a blog/gallery link, and contact information for the WNA, registered in England and Wales.

The screenshot shows the 'Doel-4, Belgium' reactor database entry. The page features a table with the following details:

CURRENT STATUS	
Operable	

DETAILS	
Reactor Type	Commercial Reactor
Process	PWR
Vendor	Acecowen
Owner	Sociétes Réunies D'énergie Du Bassin De L'escaut Sa
Model	WE 3-loops Electrabel M. V.
Operator	Nucleaire Productie
Capacity Net	1039 MWe
Capacity Gross	1090 MWe
Capacity Thermal	2988 MWt

CONSTRUCTION AND OPERATION	
Start Construction	1 December 1978
Criticality	31 March 1985
Grid Connection	8 April 1985
Commercial Operation	1 July 1985

OPERATING PERFORMANCE	
Output Life	203.14 TWh
Capacity Factor Life	83.7 %

Two satellite images of the reactor site are included, one from Google Maps and another from a different source. The page also includes a 'Map' and 'Satellite' view option.

## Reactor Database

This searchable database on the WNA website provides information on every nuclear power reactor in the world. It gives key design details, important dates, pictures, maps and operation history.

# World Nuclear News

The WNA news service, World Nuclear News (WNN), provides full coverage of the nuclear power industry. Publishing every working day since January 2007, WNN has established itself as the leading source of nuclear industry news.



In 2013, the WNN website (www.world-nuclear-news.org), which serves as the central repository and searchable archive of all its reporting, had 3 million page views from over 620,000 individual users. These figures represent an increase of 7% in pages viewed and 18% in the number of people reached during the year, compared with 2012.

WNN's reach in social media increased dramatically in 2013. Its following on Twitter grew by 33% to 13,800, while on Facebook the number of followers increased from 8700 in 2012 to over 55,000. This means that summaries of the most popular stories are now seen by more people on Facebook than on WNN's own website. Accordingly, the distribution of WNN's Daily and Weekly emails declined by about 3%, to 17,700 and 20,200, as readers turned to new ways to discover and share WNN's original reporting.

## Fear and Fukushima

03 September 2013

**International radiation protection experts have written messages to the Japanese people to explain the health impacts of the Fukushima accident.**

The letters were published on the website of prime minister Shinzo Abe and his cabinet and explain the health impacts of the Fukushima accident. As independent Nuclear Disaster Expert Group members, they collectively state that radiation exposure are mirrored by stress and stigmatisation of the affected people.

Werner Burkart, a professor at the University of Munich's Ludwig-Maximilians-University began his letter a half year since the earthquake and tsunami event of March 2011. He reflects on the suffering but also on the resilience of the affected people as a whole, and to develop visits to the affected areas without fears and restrictions.

Abel Gonzalez of Argentina has spent many years on the UN Scientific Committee on the Effects of Atomic Radiation (UNSCEAR). He explained that "No discernible increased radiation-related health effects among exposed members of the population or their descendants." The Argentinean expert, David Mettler, noted that fear of radiation is unfounded: "You should be reassured that this does not mean that we can see health effects."

Gerry Thomas of Imperial College London provided information from studies on the use of radiation to treat cancer, but have found that we can see health effects from radiation therapy.

**Related Stories**

- Fear and stress outweigh

## Double nuclear by 2040 says Exxon

13 September 2013

**World electricity demand is likely to grow by over 80% by 2040, and nuclear energy capacity will need to double to help to meet it, according to figures from Exxon Mobil. The company's analysis triggered a lively exchange at the WNA Annual Symposium in London.**

**Related Links**

- World Nuclear

## Reactors installed on floating plant

01 October 2013

**The two reactors for the first floating nuclear power plant being built in Russia have been installed in the vessel's hull, marking a major milestone in the plant's construction.**



**Related Stories**

- New milestone for floating nuclear plant
- Delivery of floating plant set for 2016
- Turbines installed on floating plant
- Fuel for Russia's first floating plant

**WNA Links**

- Nuclear Power in Russia
- Small Nuclear Power Reactors

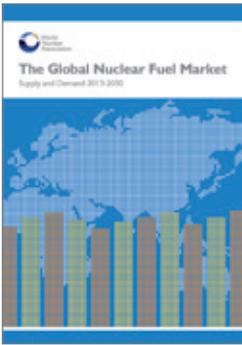
**Related Links**

- Baltiysky Zavod
- Rosenergoatom

The first 220-tonne steam generating unit - comprising the reactor, steam generators and pressurizer - is lowered into the vessel's reactor compartment (Image: Rosenergoatom)

The first 220-tonne steam generating unit - including a 35 MWe KLT-40S reactor - was installed in the vessel's reactor compartment on 27 September at the Baltiysky Zavod-Shipbuilding shipyard in St Petersburg. The second one was installed today. The operation to install the reactors, carried out using a special floating crane, was held in the presence of Rosenergoatom and the Russian Maritime Register of Shipping.

# 2013 Publications

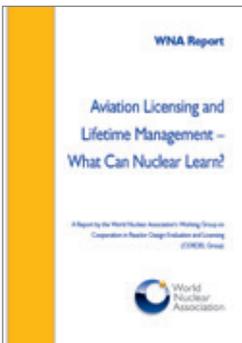
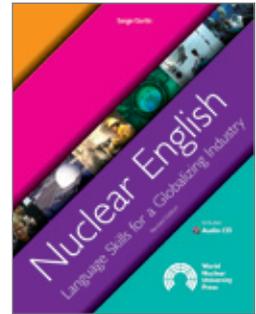


## The Global Nuclear Fuel Market: Supply and Demand 2013-2030

The 16<sup>th</sup> edition of WNA's authoritative biennial report on the outlook for nuclear power and nuclear fuels.

## Nuclear English: Language Skills for a Globalizing Industry (Revised Edition)

*Nuclear English* by Serge Gorlin is a course designed for English language learners working in the nuclear industry and in other fields of nuclear science and technology.

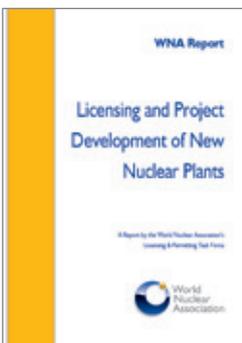
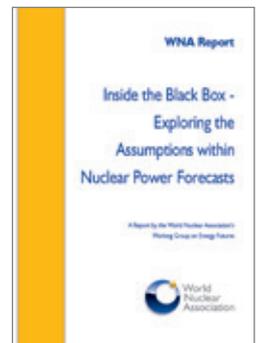


## Aviation Licensing and Lifetime Management – What Can Nuclear Learn?

This report, written by CORDEL's Design Change Management Task Force, explores design licensing and design change management procedures in the civil aviation industry.

## Inside the Black Box – Exploring the Assumptions within Nuclear Power Forecasts

This report reviews some of the best-known recent energy scenario studies using integrated models and maps the variations between them.

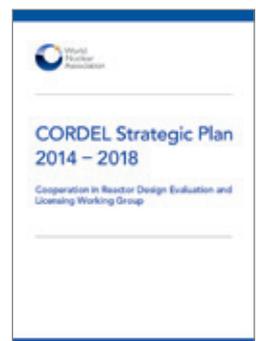


## Licensing and Project Development of New Nuclear Plants

This report explores the relationship between nuclear licensing and regulatory systems on the one hand and important commercial project decisions on the other.

## CORDEL Strategic Plan 2014-2018

This *Strategic Plan* outlines the general directions and activities CORDEL plans to undertake during the period 2014-2018.



# World Nuclear University

WNA works in partnership with the IAEA, WANO, and the OECD-NEA in projects to enhance nuclear education and build nuclear leadership through the World Nuclear University (WNU).



WNU activities are led by WNA at its London headquarters. A WNU Advisory Panel composed of high-level representatives of the founding supporters is being established. Its role will be to provide broad advice for WNU on its continuous role in international education in the peaceful applications of nuclear science and technology.

In 2013, Patricia Wieland joined WNA to lead this work. Patricia brings a wealth of experience and enthusiasm from her background as Deputy Director of the Nuclear Engineering Institute, part of the National Commission of Nuclear Energy (CNEN) in Brazil, and before that at the IAEA.

## Summer Institute

The WNU Summer Institute has a unique programme that was set up in collaboration with both industry and intergovernmental bodies to address the need for a global leadership development programme. The curriculum is continuously shaped to provide cutting-edge presentations from leading world experts on the full range of topics relevant to the future of nuclear technology.



Building competence is fostered not only by providing state-of-the-art nuclear knowledge, but also by developing skills such as leadership, communication, planning and organisation.

During the course, fellows present case studies in front of their peers and industry experts, and give a final presentation on a topic that has been researched and framed within collaborative groups, mentored by senior nuclear experts.

A video featuring mentors, CEOs and fellows was produced in 2013 and is available on the WNU website.



*“The main themes of the Summer Institute are diversity, perspective, experience and networking. It is a unique experience which provides future nuclear industry leaders with world-class expertise.”*

**Ann Roberts**, 2010 fellow from EDF Energy

## Summer Institute wins training award

The Summer Institute was the winner of Nuclear Engineering International magazine's 2013 Nuclear Training Awards prize for best training programme shorter than one year.



*"The WNU Summer Institute is a very effective and industry relevant initiative with high-level teaching quality, including some innovative ideas such as the alumni network."*

Nuclear training awards judge **Ulrik von Estorff**,  
European Commission Human Resources Observatory for  
the Nuclear Energy Sector

## 2013 Summer Institute

Out of 122 applications, 72 fellows from 25 countries participated in the 2013 Summer Institute, held in Christ Church College, Oxford, UK.

The fellows were educated in a broad range of nuclear energy topics, engaged in team-building and leadership exercises, participated in several networking events and attended a technical tour to Finland, where they had first-hand experience of waste disposal and nuclear power plant operations.



## Summer Institute Alumni

Since the first Summer Institute held in 2005 at Idaho Falls, USA, 799 professionals from 79 countries have graduated and become part of an expanding global network of future nuclear industry leaders.

Following the success of the 2012 Alumni Assembly held in Vienna, WNU is organising, in collaboration with Oak Ridge National Laboratory, the second WNU Alumni Assembly, in Oak Ridge, Tennessee, from 31 March to 4 April 2014. The five days of the meeting will feature presentations from former WNU fellows and from several high-level experts and nuclear industry leaders. Throughout, social events enable WNU fellows to reconnect and expand their network among WNU alumni.

## One-week courses

The WNU one-week courses focus on key issues in the world nuclear industry and are designed to enhance the knowledge of younger people about how nuclear science and technology are applied in the world today.

In 2013, one-week courses were held in Brazil, South Africa, South Korea and China.



2013 one-week course in Beijing, China

## Plans and forthcoming events

### For 2014, plans include:

- Better coordination among all WNU activities and courses.
- The preparation of a business case model to address the needs of the nuclear community.
- The creation of the WNU Advisory Panel and programme committees.
- Modernisation of teaching methods.
- Promotion of WNU activities in educational forums.
- Conducting a survey with Summer Institute fellows to provide a basis for future programme improvements.

### WNU events and courses for 2014 include:

- 7-20 March: 3rd Radiation Technology School, Doha, Qatar
- 31 March - 4 April: 2nd Alumni Assembly, Oak Ridge, USA
- 22-25 April: One-week course in Putrajaya, Malaysia
- 5-16 May: Nuclear English course, Angra dos Reis, Brazil
- 21-23 May: One-week course in Seoul, South Korea
- 5 July - 16 August: Summer Institute, Oxford, UK

# Governance and Organisation

The Director General is responsible for governing the WNA as effectively and efficiently as possible, and is ultimately accountable to the Board of Directors. The Board holds final approval on proposals made by the Director General, including all strategic and budgetary decisions.

## The Board of Directors

The WNA Board is composed of senior delegates from member companies who meet twice a year and serve a two-year term.

The Board fulfils all statutory duties pertaining to the organisation's governance, sets WNA policies and strategic objectives acting on proposals from the Director General.

To ensure balance among the elected members of the Board, each of the three categories of WNA institutional membership – suppliers, generators and general – must be represented by at least two members.

Board members act as mentors for the various WNA Working Groups. This enables the Board to monitor the activities of the Working Groups and to shape the overall agenda of the Working Groups.

In 2013 the Board met on 11 April and 11 September, in Singapore and London.

There are also two Board sub-committees, whose members serve two-year terms and report directly to the Chair of the Board:

- The **Governance and Nominations sub-committee** oversees appointments to the Board and handles Director General and senior staff succession planning.
- The **Audit and Finance sub-committee** carries out a regular review of the financial health of WNA, assesses fee levels and guidelines, and holds in-depth dialogue with the WNA auditor during the preparation of the annual accounts.

## Membership meetings

There are two annual meetings where the whole membership is called and can vote, as well as ask questions to the Chairman and the Director General about WNA operations. At the **Annual General Meeting** the accounts are presented for approval, and any alterations to the fee structure or fee changes are put to the vote. Immediately after the AGM, the **Members Council** takes place, during which significant developments in WNA are presented to the member company delegates in attendance.

## Audit

An independent review is carried out every year. For 2013, the Board decided to perform a full audit. The 2012 WNA accounts were signed by the WNA Board of Management on 11 April 2013, having been prepared in accordance with applicable accounting standards and given a clean opinion by an external auditor, Moore Stephens LLP. The financial statements were then presented at the Annual General Meeting, held on 11 September 2013.

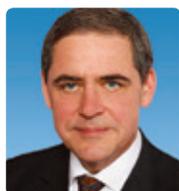
## Board members (as of 15 March 2014)



**Chair: Tim Gitzel**  
President and CEO,  
Cameco



**Vice-chair:**  
**Jean-Jacques Gautrot**  
Senior Advisor, AREVA and  
former CEO, AREVA UK



**Paul Bowden**  
Partner, Freshfields  
Bruckhaus Deringer



**Seok Cho**  
President and CEO,  
KHNP



**Dominique Dapei**  
Nuclear Fuel International  
Director, EDF



**Helmut Engelbrecht**  
CEO, Urenco



**S.K. Jain**  
Specialist Advisor,  
NPCIL



**Vadim Jivov**  
President,  
Uranium One



**Kirill Komarov**  
Deputy Director General,  
ROSATOM



**Klaus Lohrey**  
Managing Director,  
Nukem



**Yoichi Maeda**  
Senior Advisor,  
Mitsubishi Corporation



**Per-Olof Nestenborg**  
Managing Director,  
Vattenfall Nuclear Fuel



**Michaël Plaschy**  
Head of Nuclear Power  
Generation, Alpiq Suisse



**Caroline Reda**  
President and CEO,  
GE Hitachi Nuclear Energy



**Amir Shahkarami**  
CEO,  
Exelon Nuclear Partners



**Jiashu Tian**  
Deputy Chief Engineer,  
CNNC



**Hideki Toyomatsu**  
Chief Nuclear Officer,  
Kansai Electric Power Co.



**Qiyan Wei**  
Deputy General Manager,  
CGNPC Uranium  
Resources Co. Ltd.



**Ex-officio: Ken Ellis**  
Managing Director,  
World Association of  
Nuclear Operators



**Honorary: Hans Blix**  
Director General-Emeritus,  
International Atomic  
Energy Agency



**Honorary:**  
**Gerald Grandey**  
Former CEO, Cameco  
and WNA  
Chairman-Emeritus

## Strategic Advisory Group

**Chair:** Bob Van Namen, USEC

**Staff director:** Virginie Ryan-Taïx

The Strategic Advisory Group (SAG) is an advisory body to the Secretariat and WNA Board. It is an invitation-only group composed of WNA member company representatives who are well-positioned to conduct broad analyses of the worldwide nuclear industry.

This brainstorming group seeks to identify challenges facing the global nuclear industry, opportunities to advance its position in international, regional and national policy arenas, and ways to improve public acceptance of nuclear energy. SAG offers direct guidance to the Director General on future action for the Secretariat, and can also make recommendations to the Board.

## The Secretariat

WNA is made up of an international Secretariat of 30 people, covering a broad range of expertise and experience, who are responsible for coordinating the work that WNA does on behalf of its members. The Secretariat is located in London at the WNA offices and also has representatives in India, China and Australia.

Agneta Rising took up leadership of the World Nuclear Association in January 2013. One of Agneta's earliest and most important tasks was to restructure the organisation. This was completed in March 2013. The new structure includes four departments, each headed up by a manager appointed after a process of internal recruitment. The Head of WNU, previously under the Industry Cooperation department, is now reporting directly to the Director General.



**Agneta Rising**  
Director General



**Patricia Wieland**  
Head of World Nuclear University



**Shah Nawaz Ahmad**  
Senior Advisor India



**Francois Morin**  
Director China



**Jeremy Gordon**  
Head of Information Management



**Ian Hore-Lacy**  
Senior Research Analyst, Australia



**Claire Maden**  
Writer and Analyst



**Richard Petrie**  
Graphic Information Designer



**Warwick Pipe**  
Web Content Manager



**Stephen Tarlton**  
Writer and Analyst



**Virginie Ryan-Taix**  
Head of Strategic Communication



**Jonathan Cobb**  
Senior Communication Manager



**Julia Deere**  
Events Manager



**David Hess**  
Communication Analyst



**Ken Kitamura**  
Visiting Research Officer



**Brigita Mammetti**  
Visual Communication Manager



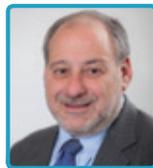
**Serge Gorlin**  
Head of Industry Cooperation



**Ian Emsley**  
Senior Project Manager



**Greg Kaser**  
Senior Project Manager



**Barry Kaufer**  
Director CORDEL



**Isis Leslie**  
Project Manager



**Binika Shah**  
Senior Project Manager



**Andrew Wasyluk**  
Project Manager



**Paul Kidman**  
Head of Finance and Administration



**Erica Boffano**  
Events Coordinator and Administrator



**Amelia Cook**  
Executive Assistant to the DG



**Gabrielle Flannery**  
Member Relations and Office Manager



**Kathy Montana**  
Accounts Assistant



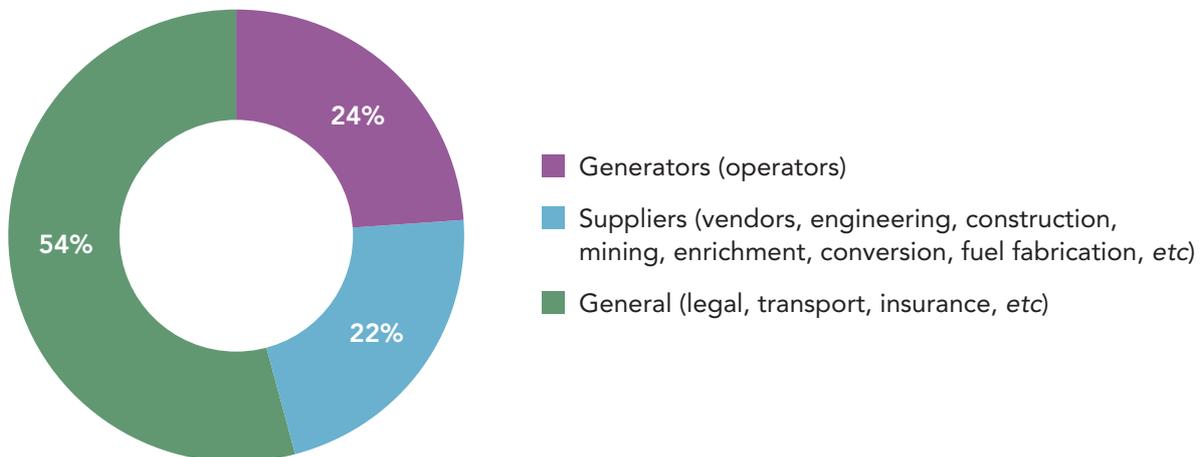
**Ana Rodriguez**  
Administration Assistant



**David White**  
ICT Manager

# Membership

WNA membership is open to all companies involved in nuclear energy: generators, suppliers, uranium producers, fuel cycle and other nuclear supply chain companies. WNA also welcomes members such as banks and financial institutions, law firms and government and research agencies. Fees are invoiced in pounds sterling on an annual basis.



In 2013, WNA welcomed 12 new members: Borealis Infrastructure Management; Cimtas Piping; DMS; East Cliff Consulting; Enlog USA; EPZ; Euratom Supply Agency; Horizon Nuclear Power; Japan Steel Works; Marking Services; PricewaterhouseCoopers; State Nuclear Power Technology Corporation (SNPTC).

WNA members benefit from: participation in WNA members-only meetings; access to the WNA members website containing reports and presentations from members-only meetings; complimentary copies of WNA publications including *The Global Nuclear Fuel Market* report; heavily discounted registration fees at WNA events; and the opportunity to exhibit and sponsor activities.

Membership fees are used to maintain WNA's public information work and the work performed by the organisation in representing the industry and promoting nuclear energy globally.

The WNA **Members Survey** performed in September 2013 has shown good overall satisfaction with WNA membership and events. 90% say WNA brings value to the industry, and 80% are satisfied or very satisfied with WNA membership.

For members the three most important reasons for being a member of WNA are: opportunities for international networking (70%); participation in Working Groups (69%); and supporting WNA's role in promoting nuclear energy internationally (59%).

In 2014, another survey will be conducted with a goal to improve on the response rate, in order to have an even greater representation of members' views.

## Charter of Ethics

All members of WNA must agree to the Charter of Ethics upon joining the association. This Charter is an affirmation of values and principles, summarising the responsibilities of the nuclear industry and the surrounding legal and institutional framework. The Charter is available on the WNA website.

## List of WNA members (as of 31 December 2013)

AECL  
 Alpiq Suisse S.A.  
 AREVA  
 ARMZ (JSC Atomredmetzoloto Inc.)  
 Association for Regional and International  
 Underground Storage (ARIUS)  
 Atomenergomash  
 Atomic Minerals Directorate for  
 Exploration & Research  
 Atomstroyexport  
 Australia Nuclear Science and  
 Technology Organisation  
 Babcock and Wilcox Nuclear Energy  
 Bannerman Resources Limited  
 Bentley Systems  
 Berkeley Resources Limited  
 BHP Billiton  
 Borealis Infrastructure Management Co.  
 Bruce Power  
 Burges Salmon  
 Cameco Corporation  
 Candu Energy Inc  
 Central Research Institute of Electric  
 Power Industry  
 CEZ a s  
 CGNPC Uranium Resources Co Ltd  
 Chamber of Mines of Namibia  
 China National Nuclear Corporation  
 Chubu Electric Power Co Inc  
 Chugoku Electric Power Co Inc  
 Cimtas Piping  
 CLP Power Hong Kong Limited  
 Commonwealth Independent States  
 Navigation Inc  
 Constellation Energy Group  
 Conuar SA  
 ConverDyn  
 Dassault Systemes SA  
 Daya Bay Nuclear Power Operations  
 and Management Co Ltd  
 Deutsche Bank  
 DMS s.r.o.  
 Doosan Heavy Industries &  
 Construction  
 East Cliff Consulting  
 Edlow International Company  
 Electric Power Development Co Ltd  
 (J-POWER)  
 Electricite de France  
 Electronics Corporation of India Limited  
 Eletronuclear  
 Emirates Nuclear Energy Corporation  
 EnBW Kernkraft GmbH  
 Ergoatom  
 EnLog Strategic Services LLC  
 EnLog USA  
 ENUSA Industrias Avanzadas SA  
 EOn Kernkraft  
 Eon Nordic  
 EPZ  
 Ernst & Young GmbH  
 Eskom Holdings Limited  
 Euratom Supply Agency  
 European Mutual Association for  
 Nuclear Insurance  
 Excel Service Corporation  
 Exelon Generation LLC  
 Extract Resources  
 Fairbanks Morse Engine  
 Federal State-owned Unitary Enterprise  
 Concern Rosenergoatom  
 FirstEnergy Nuclear Operating  
 Company (FENOC)  
 Freshfields Bruckhaus Deringer  
 FUELCO LLC  
 GDF Suez  
 GE Energy  
 Generation mPower  
 GEODIS Wilson - STSI  
 Global Atomic Fuels Corporation  
 Greenland Minerals and Energy  
 Herbert Smith Freehills LLP  
 Hitachi Ltd  
 Hokkaido Electric Power Co Inc  
 Hokuriku Electric Power Co Inc  
 Horizon Nuclear Power  
 Iberdrola Generacion S.A.  
 Idemitsu Kosan Co Ltd  
 Imperial College London  
 Industrias Nucleares do Brasil S A (INB)  
 Intelligent Systems  
 International Nuclear Services  
 International Uranium Enrichment  
 Centre  
 INTERNEXCO GmbH  
 Israel Atomic Energy Commission  
 ITOCHU Corporation  
 Japan Atomic Power Co  
 Japan Nuclear Fuel Ltd  
 Japan Steel Works  
 Kansai Electric Power Co Inc  
 KAZATOMPROM  
 KEPCO E&C  
 KEPCO Nuclear Fuel Co., Ltd.  
 Kernkraftwerk Gösgen-Däniken AG  
 Kernkraftwerk Leibstadt AG  
 King's College London (Project Alpha)  
 Korea Atomic Energy Research Institute  
 Korea Electric Power Corporation  
 Korea Hydro & Nuclear Power Co  
 Korea Nuclear Energy Promotion  
 Agency  
 Kozloduy NPP plc  
 Kyushu Electric Power Co  
 Laramide Resources Ltd.  
 Lightbridge Corporation  
 Lincoln Structural Solutions LLC  
 Lloyd's Register  
 MacGiver Works B.V.  
 Marking Services  
 Marubeni Corporation  
 Mega Uranium Ltd.  
 Mitsubishi Corporation  
 Mitsubishi Heavy Industries Ltd  
 Mitsubishi Nuclear Energy Systems Inc  
 Mitsubishi Nuclear Fuel Co Ltd  
 Mitsui & Co Ltd  
 Morgan Lewis & Bockius LLP  
 NAC International  
 Navoi Mining and Metallurgy Combine  
 New York Nuclear Corporation  
 North West University  
 Nuclear Atkins Assystem Alliance  
 Nuclear Cargo and Service GmbH  
 Nuclear Electric Insurance Limited  
 Nuclear Fuel Complex  
 Nuclear Power Corporation of India  
 Limited  
 Nuclear Resources International Inc (NRI)  
 Nuclear Risk Insurers Limited  
 Nukem GmbH  
 Nukem Technologies  
 Ontario Power Generation  
 PGE Energia Jadrowa S.A.  
 Pillsbury Winthrop Shaw Pittman LLP  
 Pinnacle West  
 Pinsent Masons LLP  
 PM Dimensions Pvt Ltd  
 PricewaterhouseCoopers  
 Regulation and Supervision Bureau  
 Rio Tinto plc  
 Risk Engineering  
 Rolls Royce plc  
 Rosatom State Corporation  
 RSB Logistic GmbH  
 Rusatom Overseas  
 Rusatom Service  
 RWE Power AG  
 Samsung C & T Corporation  
 Shikoku Electric Power Co Inc  
 Shimizu Corporation  
 Silex Systems Limited  
 SNPTC  
 Sogin SpA  
 Sojitz Corporation  
 South African Nuclear Energy  
 Corporation (Necsa)  
 Southern Nuclear Operating Company  
 Sumitomo Corporation  
 Swedish Nuclear Fuel and Waste  
 Management Co (SKB)  
 Taiwan Power Company  
 TAM International Inc  
 Techsnabexport (TENEX)  
 Teollisuuden Voima Oyj (TVO)  
 The Ux Consulting Co  
 Tohoku Electric Power Co Inc  
 Toshiba Corporation  
 Total  
 TradeTech Energy  
 TradeTech, LLC  
 TVEL Corporation  
 UCL Australia  
 Uranium Corporation of India Ltd (UCIL)  
 Uranium One Inc.  
 Uranium Solutions LLC  
 Urenco Limited  
 USEC Inc  
 Vattenfall  
 Visagino Atomine Elektrine  
 W M Mining Company  
 Westerman Nuclear LLC  
 Westinghouse Electric Co





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