THE IMPORTANCE OF BUILDING AND ENHANCING WORLDWIDE INDUSTRY COOPERATION IN THE AREAS OF RADIOLOGICAL PROTECTION, WASTE MANAGEMENT AND DECOMMISSIONING

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ABSTRACT

The slow or stagnant rate of nuclear power generation development in many developed countries over the last two decades has resulted in a significant shortage in the population of mid-career nuclear industry professionals. This shortage is even more pronounced in some specific areas of expertise such as radiological protection, waste management and decommissioning. This situation has occurred at a time when the renaissance of nuclear power and the globalization of the nuclear industry are steadily gaining momentum and when the industry's involvement in international and national debates in these three fields of expertise (and the industry's impact on these debates) is of vital importance.

This paper presents the World Nuclear Association (WNA) approach to building and enhancing worldwide industry cooperation in radiological protection, waste management and decommissioning, which is manifested through the activities of the two WNA working groups on radiological protection (RPWG) and on waste management and decommissioning (WM&DWG).

This paper also briefly describes the WNA's participatory role, as of Summer 2005, in the International Atomic Energy Agency (IAEA) standard development committees on radiation safety (RASSC), waste safety (WASSC) and nuclear safety (NUSSC). This participation provides the worldwide nuclear industry with an opportunity to be part of IAEA's discussions on shaping changes to the control regime of IAEA safety standards. The review (and the prospect of a revision) of IAEA safety standards, which began in October 2005, makes this WNA participation and the industry's involvement at the national level timely and important.

All of this excellent industry cooperation and team effort is done through "collegial" exchanges between key industry experts, which help tackle important issues more effectively. The WNA is continuously looking to enhance its worldwide industry representation in these fields of expertise through the RPWG and WM&DWG.

INTRODUCTION

The slow or stagnant rate of nuclear power generation development in many developed countries over the last two decades has resulted in a significant shortage in the population of mid-career nuclear professionals. Among other things, factors that contributed to this shortage included an increasing number of staff that retired and a low number of new recruits. This shortage is even more pronounced in some specific areas of expertise that are essential to the sustainability of nuclear power generation. The expert areas of radiological protection, waste management and decommissioning are a case in point. The current state of affairs for the experts in these fields is

either that they are overloaded with day-to-day operational responsibilities, thus leaving very limited time for extra activities, or that too few of them hold job functions that facilitate key forward-looking activities (such as policy review and revision).

It is easy to imagine that such an overload of day-to-day operational responsibilities can also be a hindrance when it comes to addressing key topics on the national, world regional and worldwide scales. In the nuclear industry, even large companies are well acquainted with this issue. Moreover, the industry is also aware that the social dimensions of radiological protection, waste management and decommissioning have substantially evolved over the years and that this adds to the challenge.

All of this occurs at a time when the renaissance of nuclear power and the globalization of the nuclear industry are steadily gaining momentum and when the industry's involvement in international and national debates in these three fields of expertise (and the industry's impact on these debates) is of vital importance.

WORLD NUCLEAR ASSOCIATION (WNA) APPROACH TO BUILDING AND ENHANCING WORLDWIDE INDUSTRY COOPERATION

The aims underlying the WNA approach are two-fold:

- Maximize the industry's knowledge of international and national debates and the industry's impact on these debates.
- Maximize the use of worldwide industry expertise.

The working model is simple. It is about sharing, as efficiently as possible, the necessary burden of providing industry expertise to constructively tackle common key issues that the industry is facing and that most impact on its activities.

Were there enough experts, having the whole pool available and involved at the same time for every single case would be ideal but this proposition is not physically possible nor realistic. The vast scope of the worldwide nuclear industry alone inherently imposes limits on what can be practically achieved.

In the current context, it is evident that the most viable option is rather to pool the available industry experts and to gradually establish a cooperative mode among them of developing and putting forward the industry case on key common issues. In essence, this is the operating mode that has been successfully implemented by the two WNA working groups on radiological protection (RPWG) and on waste management and decommissioning (WM&DWG).

The WNA approach to building and enhancing industry cooperation is examined in practice below through the activities of the RPWG and WM&DWG.

RPWG and WM&DWG

The RPWG and WM&DWG each consist of industry experts (policy-making and operations) from all sectors broadly representing the nuclear fuel cycle and the generation of nuclear power from all around the world. Currently, the RPWG and WM&DWG each comprise about 30 members – see Appendices I and II.

The RPWG and WM&DWG each serve as a global industry expert forum for:

- Exchanging and sharing information.
- Analysing data and issues.
- Developing views and positions, and strategies that are implemented to advocate these views and positions.
- Coordinating an adequate representation of the worldwide nuclear industry interests in key international forums.

The RPWG and WM&DWG develop strong, clearly stated industry views and positions on key topics in order to:

- Establish industry clarity on complicated issues.
- Equip the nuclear industry and national associations.
- Enhance the global industry's credibility and impact in international forums.

Examples of Common Key Issues that the RPWG and WM&DWG are tackling

These issues include:

- International Atomic Energy Agency's (IAEA) (and possible revision) of its Basic Safety Standards (BSS) and revision of the related Draft Series documentation (e.g. Safety Guides).
- International Commission on Radiological Protection's (ICRP) evolving proposal on the revision of its international radiological protection recommendations.
- The application of the concepts of exemption and clearance for materials containing radioactivity.
- The development of a broader understanding of (and support for) the safe management of nuclear waste and used nuclear fuel.
- The emerging topic of radiological protection of non-human species.

Examples of Views and Positions that the RPWG and WM&DWG Have Developed and Put Forward[1]

These views and positions include:

- WNA views/comments on the ongoing IAEA review of the BSS and revision of the related Draft Series documentation (e.g. Safety Guides).
- WNA views/comments on the evolving draft proposal of the ICRP's next recommendations: 1st and 2nd proposals issued in 2003 and 2004.
- WNA Position Statement on *Safe Management of Nuclear Waste and Used Nuclear Fuel.*
- WNA Position Statement on *Risks of Low-Dose Ionizing Radiation.*

[1] There is also a WNA Position Statement on *Decommissioning of Civil Nuclear Facilities* currently under development.

- WNA Working Group Position Statement on *Removal from Regulatory Control of Material Containing Radioactivity – Exemption and Clearance.*
- WNA Key Messages on Radiological Protection of the Environment/Non-Human Species.

The WNA has advocated and publicized these views and positions in key international forums such as those organized by the IAEA, ICRP, the Organisation for Economic Co-operation and Development / the Nuclear Energy Agency (OECD/NEA), the International Radiological Protection Association (IRPA), WM Symposia Inc. (WMS) and the International Conference on Environmental Remediation and Radioactive Waste Management (ICEM). Moreover, these views and positions are also presented to the wider nuclear industry community through WNA events (e.g. our Annual Symposium held in early September each year).

All of this information is publicly available on the WNA website at http://www.world-nuclear.org/[2], which is another effective means of reaching the worldwide nuclear community and beyond.

WNA Participation in the IAEA Standard Development Committees on Radiation Safety (RASSC), Waste Safety (WASSC) and Nuclear Safety (NUSSC)

This WNA participation (since Summer 2005) provides the worldwide nuclear industry with an opportunity to be an integral part of IAEA's discussions on shaping changes to the control regime of IAEA safety standards.

The WNA provides a means for the nuclear industry to gain direct access to information concerning the IAEA's development of safety standards and related deliberations. This access enables the nuclear industry to inform itself earlier and to provide shared input into these deliberations through the WNA voice. Independent of this, at the national level, it is equally important that the nuclear industry has an exchange of views with governmental representatives so that industry input is taken into account in the views and positions put forward by the national delegations.

The review (and the prospect of a revision) of IAEA safety standards, which began in October 2005, makes this WNA participation and the nuclear industry's involvement at the national level timely and important. Given the increasing trend towards the globalization of the nuclear industry, the importance of getting the worldwide nuclear industry actively involved in the process of setting sound and practical international safety standards at the IAEA is unquestionable.

Building and Enhancing Worldwide Industry Cooperation through the RPWG and WM&DWG

As was demonstrated clearly above, worldwide nuclear industry cooperation in radiological protection, waste management and decommissioning is already well established at the WNA and

[2] The only exception is the WNA's views/comments developed as an input to the internal deliberations of IAEA RASSC, WASSC and NUSSC.

is being manifested in important activities that favour the further development of nuclear energy on a global scale.

The broad WNA membership – consisting of over 130 industry enterprises from over 30 countries – and their farsighted views are at the basis of this on-going successful nuclear industry cooperation. Indeed, nuclear operators clearly see the benefits of pooling the available industry experts for tackling common key issues that the industry is facing and that most impact on its activities, and for advocating and publicizing the industry case on these key issues in key international forums. Correspondingly, the number of industry experts involved in the RPWG and the WM&DWG is steadily increasing and strengthening.

In order to further build and enhance industry cooperation, improving the RPWG's and WM&DWG's links to the already existing networks based on regional/national industry cooperation around the world seems logical. Practically, this can be achieved by improving our WNA network of key industry experts. The basic model is that for each world region or country, a few key industry experts, who are leaders in their region's/nation's industry cooperation, would join the RPWG and WM&DWG membership.

It is not difficult to imagine that both worldwide industry cooperation and regional/national industry cooperation would mutually benefit from these closer interactions. This two-way cooperation would contribute to strengthening the industry's case both worldwide and regionally/nationally as well as to the effort deployed on advocating the industry's case. It can also contribute to reducing the potential duplication of efforts. This approach is also helpful in facilitating the implementation of worldwide industry cooperation with the world's regions or countries where the difference of culture and language can impose inherent limitations on cooperation.

Why should a nuclear operator be involved? Here are a few points to consider:

- The move towards the globalization of standards is underway and will intensify.
- There is a good chance that safety standards, which will ultimately apply to your organization, will be developed without your involvement.
- As a single company, what are the chances of impacting on international deliberations about standards?
- The overall aim is to improve the control regime of international safety standards.
- Gaining a good understanding of the proposed changes is key for operators.
- Your experts will have an opportunity to contribute to this endeavour.
- Interacting with industry colleagues will help your experts identify/act on issues more efficiently.
- Your experts will become more knowledgeable, thereby bringing benefit to your organization.
- The level of involvement of your experts is up to your organization: experts can decide just to be kept informed, or to participate more actively in e-mail exchanges and meetings.
- The effort required to join the RPWG and WM&DWG is minimal.

CONCLUSIONS

Worldwide nuclear industry cooperation in radiological protection, waste management and decommissioning is already well established at the WNA and is being manifested in important activities that favour the further development of nuclear energy on a global scale.

In order to further build and enhance industry cooperation, improving the RPWG's and WM&DWG's links to the already existing networks based on regional/national industry cooperation around the world seems logical. Practically, this can be achieved by improving our WNA network of key industry experts.

The WNA is continuously looking to enhance its worldwide industry representation in these fields of expertise through the RPWG and WM&DWG. We encourage key industry experts in these fields to become members of these two teams of industry excellence. There is a whole range of good reasons that would support this decision. If your world region or country is not sufficiently represented in the RPWG and WM&DWG, this would provide an extra good reason for enhancing this worldwide industry cooperation.

Appendix I

World Nuclear Association – WNA,
Radiological Protection Working Group – RPWG
(Official List – January 31, 2006)

AREVA (France)	Philippe Bosquet
BARC (India)	Ambika Shai Pradhan
BARC (India)	Shri Kushwaha
Barsebackkraft (Sweden)	Carl Göran Lindvall
BNFL-BNG (UK)	Roger Coates
Cameco (Canada)	Al Shpyth, Vice-Chair
Cameco (Canada)	John Takala
Cogema Resources Inc. (Canada)	Dale Huffman
CEZ (Czech Republic)	Josef Koc
CNNC (China)	Xinhe Liu
CRIEPI (Japan)	Kenji Ishida
EDF (France)	Yves Garcier
Enusa (Spain)	Guillermo Sánchez
ERA (Australia)	Ian Marshman
IBRAE (Russia)	Oleg Pavlovsky
JAEA (Japan)	Sadaki Futura
JNFL (Japan)	Suzuki Akira
KANSAI (Japan)	Shinichiro Miyazaki, Chair
KKG (Switzerland)	Marcel Lips
NEI (USA)	Ralph Andersen
OPG (Canada)	Robin Manley
RIARA (Russia)	Rudolf Alexakhin
RIAR (Russia)	Vyacheslav Usoltsev
RWE NUKEM (UK)	Richard Birch
Shikohu Electric Power (Japan)	Kashimoto
UCIL (India)	Ramendra Gupta
UCIL (India)	Diwakar Acharya
WM Mining Inc (USA)	Wallace Mays
WNA (International)	Sylvain Saint-Pierre, Secretariat
WNA (International)	Tetsuji Kishida, Mentor, WNA Board
Corresponding Members	
IAEA (International)	Didier Louvat
IAEA (International)	Khammar Mrabit

Appendix II

World Nuclear Association – WNA
Waste Management and Decommissioning Working Group – WM&DWG
(Official List – January 31, 2006)

Arius (Switzerland)	Charles McCombie
BARC (India)	Shri Kushwaha
Barsebackkraft (Sweden)	Carl Göran Lindvall
Barsebackkraft (Sweden)	Hakan Lorentz
Belgonucléaire (Belgium)	Alain Vandergheynst
BNFL (UK)	Phil Hallington, Co-Chair
Cameco (Canada)	John Jarrell
COGEMA (France)	Guy Decobert
COGEMA (France)	Hervé Masson, Co-Chair
Cogema Resources Inc. (Canada)	Dale Huffman
CEZ (Czech Republic)	Ivana Davidova
EdF (France)	Michel Debes
Foratom (Europe)	Berta Picamal
JAEA (Japan)	Jun-ichiro Ishida
KANSAI (Japan)	Shinichiro Miyazaki
Kazatomprom (Kazakhstan)	Sergey Krechetov
KKG (Switzerland)	Marcel Lips
NEI (USA)	Steven Kraft
NEI (USA)	Ralph Andersen
NOK (Switzerland)	David McGinnes
PAEC (Pakistan)	Fatima Rehman
RIAR (Russia)	Vladimir Maklakov
RWE NUKEM (UK)	Keith Collett
Sydkraft (Sweden)	Hagan Wingren
Tenex (Russia)	Alexei Lebedev
UCIL (India)	Ramendra Gupta
UCIL (India)	Diwakar Acharya
WMC (Australia)	Ian Duncan
WM Mining Inc (USA)	Wallace Mays
WNA (International)	Sylvain Saint-Pierre, Secretariat
WNA (International)	Rustem Tursunbayev, Mentor, WNA Board
Corresponding Members	
IAEA (International)	Didier Louvat