



June 2009  
No 11

# The ANS Globe

...e-news from the ANS International Committee

## From the editors

*The ANS Globe* is the Bulletin of the American Nuclear Society's International Committee. The Editors would like to thank all who have sent news, messages, and articles to *The ANS Globe* since 2004, thus contributing to its continued presence.

*The ANS Globe* has as its mandate the dissemination of news of international interest to International Committee members and to others. Please send us your letters, articles, and/or comments for consideration towards the next issue.

Note: We recently received the unhappy news that [France Brès-Tutino's](#) husband passed away just before Christmas 2008. On our own behalf and on behalf of all readers of *The ANS Globe*, we want to express sincerest sympathies to France. We hope she finds comfort in the friendship of her many international colleagues.

[Ben Rouben](#)

[roubenb@alum.mit.edu](mailto:roubenb@alum.mit.edu)

[Mauro L. Bonardi](#)

[mauro.bonardi@mi.infn.it](mailto:mauro.bonardi@mi.infn.it)



**Acknowledgements:** The editors would like to thank [Dr. Rolland Langley](#) and [Mr. Mike Diekman](#) of the ANS for their invaluable help in stimulating reports and collecting news items for *The ANS Globe*. [Mike Diekman](#) also kindly ensured the correctness of contact information for International Committee members and Agreement Societies.

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## From the Chair



Dear friends,

If we look at the rapidly evolving global landscape, the concept of sustainable growth has highlighted the necessary requirements of developing new policies and new tools necessary to meet the mutual needs of the world's society in an unavoidable global interdependence.

The energy field is a clear illustration of this interdependence and of the imperative need to reduce carbon releases to avoid global warming while ensuring security of energy supply and sustainable energy policies.

In the frame of the previous ANS meetings focusing on such relevant topics as “Nuclear Science and Technology Now Arriving on Main Street” or “Nuclear Power, Ready, Steady, Go”, our Committee has timely assessed the value of relying on nuclear energy to achieve these goals, and wisely tackled the challenge of joining efforts for developing partnerships to make nuclear energy even safer and more reliable, environment friendly and sustainable. The recognition of such an approach is increasingly visible in the face of the number of “new” countries interested by this energy path - or other countries reassessing their national policies toward building additional nuclear energy capacity, to meet such requirements.

The current world-wide movement to give more priority to the protection of the planet and to help solve the climate-change issue, as well as to implement policies based on sustainability, can find, through an international partnership in nuclear R&D, regulation and industrial application, the necessary tools to contribute to this important effort.

I am confident that our Committee, by assembling the many competencies of its members, and continuing to deploy its outreach, will keep a confident look into the expanding role of nuclear energy for the future.

Looking forward to seeing you in Atlanta to “Advancing Nuclear Energy Technology for a Greater Tomorrow”.



France Brès-Tutino

## **The ANS International Committee's Web Page**

Visit the enhanced ANS International Committee's Section on the ANS website, located at <http://www.ans.org/const/international>. It includes:

- Background information about the ANS International Committee
- Connections to ANS International Local Sections
- An overview of Society alliances with international organizations (INEA, INSC, and PNC), along with contact information
- Connections to 30 ANS Agreement Societies/Organizations, and
- Current/back issues of *The ANS Globe*, which features ANS International Committee activities and related items.

## **Candidates of ANS IC for 2009 Elections to ANS Board of Directors**

For the 2009 election to the Board of Directors, the International Committee was to suggest nominees from the Asia Region to the ANS Nominating Committee. At its meeting in Reno, the IC voted to recommend the following nominees:

- [Prof. Naiyan Wang](#), of China
- [Dr. Kazuoki Matsui](#), of Japan

The ANS is very thankful to both candidates for their willingness to serve as a member of the Board of Directors. We have an election update: [Dr. Kazuoki Matsui](#) was the candidate elected.

## **News from Sister Societies and International News**

### • [Prof. Mamoru Akiyama's Passing](#)

It is with sadness that the ANS Globe learned from [Prof. Kazuaki Matsui](#) of Prof. Emeritus Mamoru Akiyama's passing, on April 1, 2009, at the age of 73, after several years of struggle with stomach cancer. Prof. Akiyama was President of The Institute of Applied Energy, of the Atomic Energy Society of Japan, and of the Pacific Nuclear Council. On behalf of the ANS Globe, we would like to extend to [Prof. Akiyama's family](#) our very deepest condolences.



Prof. Hisashi Ninokata kindly provided additional remembrances: Prof. Mamoru Akiyama, 73, ANS member from 1992 to 1999, received his bachelor's degree in 1958 and a doctorate in 1970 in mechanical engineering from the University of Tokyo. He worked at the Japan Atomic Energy Research Institute for 5 years, and then joined the

faculty of the Nuclear Engineering Department of the University of Tokyo in 1963. Prof. Akiyama was Professor Emeritus at the University of Tokyo since 1996. He was a leader in energy engineering, nuclear engineering and thermal hydraulics in academia as well as for industries; he was a former President of the Saitama Institute of Technology and a former member of the Science Council of Japan.

- [Australia](#)

[Dr. Clarence Hardy](#), Hon. Secretary, Australian Nuclear Association, sends the following progress report on developments in Australia

- **Uranium Resources and Production:** Australia's uranium resources totalled 1,243,000 teU, or about 23% of the world's uranium resources in the category of Reasonably Assured Resources plus Inferred Resources recoverable at a cost of up to US\$130/kgU (data from "Uranium Resources and Demand" published by the IAEA/NEA in 2007). Australia's uranium production in calendar year 2008 totalled 9,941 te U<sub>3</sub>O<sub>8</sub> (or 8,430teU), or about 23% of world's mine production. This uranium came from the three operating mines at Ranger (Northern Territory), Olympic Dam (South Australia) and Beverley (South Australia). It is likely that two new mines will commence operation in 2009 at the Honeymoon deposit and at the Four Mile deposit, both in South Australia.
- **ANSTO News:** [Dr. Adrian Paterson](#), the new Chief Executive Officer of the Australian Nuclear Science & Technology Organisation, took up his position on 1 March 2009. Dr. Paterson has had a distinguished career in government and industry positions in South Africa, his last position being as the General Manager, Business Development & Operations, at the Pebble Bed Modular Reactor Company in South Africa.
- **ANA National Conference:** The ANA's 8th National Conference will be held in Sydney on 2 October 2009. The Opening address will be given by [Dr. Ziggy Switkowski](#), Chairman, ANSTO. There will be presentations by invited speakers on Australia's uranium resources and production; nuclear power developments worldwide; nuclear fuel cycle developments worldwide; ANSTO's programs in nuclear science and technology; progress on the Commonwealth Government's Radioactive Waste Facility; developments in non-proliferation and safeguards, and the role of the Australian Institute for Nuclear Science & Engineering.

- [Canadian Nuclear Society \(CNS\) \(<http://www.cns-snc.ca>\)](#)

2009 marks the **30<sup>th</sup> anniversary** of the Canadian Nuclear Society (CNS). In a very busy autumn 2008, the CNS held three very successful conferences: the 23<sup>rd</sup> Nuclear Simulation Symposium, the 10<sup>th</sup> International Conference on CANDU Fuel, and the 8<sup>th</sup> International Conference on CANDU Maintenance. As of this writing, the CNS had also held its first major event of 2009, its 30<sup>th</sup> Annual Conference, "New Nuclear Frontiers", which was held 2009 May 31-June 3 in Calgary, Alberta. The second major event of the CNS in 2009 is the 6<sup>th</sup> International Steam Generator Conference, to be held 2009 November 8-11 in Toronto, Ontario.

The Executive of the CNS for 2009-2010 has just been elected:

- President: [Eleodor Nichita](#), University of Ontario Institute of Technology
- 1<sup>st</sup> VP: [Adriaan Buijs](#), McMaster University
- 2<sup>nd</sup> VP: [Frank Doyle](#), CANDU Owners' Group
- Secretary: [Prabhu Kundurpi](#), Consultant
- Treasurer: [Eric Williams](#), Bruce Power (Retired)
- Immediate Past President: [Jim Harvie](#), Canadian Nuclear Safety Commission (Retired).

- [China](#)

[Prof. Guanxing Li](#) has succeeded [Prof. Naiyan Wang](#) as President of the Chinese Nuclear Society. [Dr. Changxin Liu](#) sent the following report on activities of the Chinese Nuclear Society (CNS):

- The General Assembly of the CNS was held in Beijing in November 2008. This was a very successful congress; 300 participants on behalf of about 9000 members came from all over the country to attend the congress. During this Congress, the former President [Prof. Naiyan Wang](#) was awarded Honorary President, the academician [Guanxing Li](#) was elected President for a four-year term, and Prof. Chuanhong Pan was elected Secretary-General of the CNS.
- The 2009 CNS Annual Meeting is anticipated for November 17th -20th in Beijing. Its purpose is to provide a platform and forum for technical information exchange, promote the communication and cooperation of nuclear experts, advance the development of the nuclear science and technology industry, and improve innovation capabilities. This meeting will cover topics of Nuclear Physics, Nuclear Materials, Nuclear Power, Nuclear Fission and Fusion, Radiation Protection and other relevant fields. Over 1000 participants are expected to attend. More information is available at the CNS website, <http://www.ns.org.cn>.
- NIC 2010, the 11th China International Nuclear Industry Exhibition, will take place in Beijing next year. This is the top-level Chinese nuclear tradeshow. It is the largest, most comprehensive event to cover the whole nuclear industry. It is also the only event that addresses this broad market effectively.
- The 30th Anniversary Celebration of the CNS will be held next April. The Chinese Nuclear Society was established in 1980. It is a not-for-profit organization on nuclear science, technology and engineering. Its object is to unify the nuclear professionals to promote the advancement and peaceful use of nuclear science and technology.
- ICONE18 took place 2009 May 10-14 in China. The International Conference on Nuclear Engineering (ICONE) is the premier global conference for addressing the needs of the nuclear industry. For further information, please visit <http://www.ns.org.cn>.



- [Czech Nuclear Society](#)

[Ing. Vaclav Hanus](#) sent the following detailed report on the Czech Nuclear Society (CNS):

The Czech Nuclear Society was established in 1990. It is a member of the European Nuclear Society and is represented on the ENS boards and committees. It is a founding member of the Czech Association of Scientific and Technical Societies. CNS has maintained a long-term partnership and cooperation with the Slovak Nuclear Society (SNUS). The CNS is a volunteer, not-for-profit organization. Its main goal is to promote public awareness about the nuclear industry and electricity generation, and to provide a professional level of information on the peaceful uses of nuclear energy.



CNS and SNUS also cooperate with the German Nuclear Society (KTG). The main results of our cooperation are the jointly organized Nuclear Societies Information Meetings (NUSIM). These conferences have taken place annually since 1992 (starting in Prague), alternating between host countries. The last conference was held 2009 March 30 to April 2 in Schoneck, Germany. The next NUSIM will be organized by SNUS for April 2010 in Slovakia.



CNS organizes other significant international conferences and workshops in the Czech Republic, usually with international participation. The traditional CNS topical international conference is called “VVER 20XY”, and is organized at 3-year intervals in Prague. This event focuses mainly on VVER reactor issues.

CNS has cooperation agreements with nuclear societies of Slovakia, USA, Japan, Bulgaria and Ukraine. The Czech Nuclear Society Charter is the founding document of CNS. There are two kinds of CNS membership: individual members (people interested in nuclear matters) and corporate members (public organizations, schools, universities, research institutes, companies). CNS currently has 165 individual members and 23 corporate members.

The highest level in the CNS organization is the conference, where the CNS committee and supervisory board are elected. The CNS committee manages and coordinates CNS activities until the next CNS conference. The Society president and

vice-presidents are elected by the CNS committee. The CNS organizes for its members and the public the following events:

- Workshops, usually focused on special topics. It is the aim of CNS to provide for the development of particular specialized interests by organizing gatherings of people from different organizations at minimum costs.
- Professional seminars and meetings of Czech and international experts on broader topics.
- Participation in important international events, providing individual members with significant discounts.

Young members of CNS have demonstrated significant and important initiatives. Represented by the Czech Young Generation (CYG), they participate in the Young Generation Network of the European Nuclear Society. Long tradition has an annual CYG technical meeting, called the “St. Nicholas meeting”. Another important part of CNS is also the Women in Nuclear section (WIN). The CNS issues the InfoWIN magazine.

Relatively new CNS initiatives are focused on supporting and promoting the interest of high school students in natural sciences, mainly physics, chemistry and mathematics. The CNS supports national and regional competitions of students in these areas.

The Czech Nuclear Society publishes a periodic Bulletin, which contains information about CNS activities in addition to regular articles on current topics about the Czech and international nuclear energy generation arena. Significant news are published on our [www.csvts.cz/cns](http://www.csvts.cz/cns) pages as well. Participation in public media discussions about nuclear energy, and advocacy of nuclear energy against antinuclear ideology in media is also a very important CNS activity. CNS has published some books, e.g., “Who’s Who in the Czech and the Slovak Nuclear Energy; “Tamelin Case”, about the development of Czech-Austrian nuclear relations; and “Nuclear Smiles”, a book of funny cartoons about the nuclear business.

The Czech Nuclear Society welcomes all who are interested in nuclear energy generation and related fields.

- [Egypt](#)

*The ANS Globe* has received late news of the death of [Prof. Anas El Naggar](#) in 2007 November. Prof. El Naggar was the International Nuclear Societies Council’s contact with the Egyptian Society of Nuclear Sciences and Applications (ESNSA). Prof. El Naggar made many important and admirable contributions to radiological sciences in Egypt, the Arab and African region, and also to the IAEA and to ESNSA. He supervised and examined many M.Sc. and Ph.D. students. Prof. El Naggar provided kind and sincere assistance to his own students and to other students as well. Very belatedly but nonetheless sincerely, *The ANS Globe* wishes to express sympathy to Prof. El Naggar’s family.



- [France](#)

- Global 2009/Topfuel/LWRFP\*: The French experts from the French Section and the French Nuclear Society are actively preparing this international joint meeting, to be held in Paris **2009 September 6 to 11**. As of now, over 600 papers are included in the program. Thirty four countries have contributed, with 80% from non-French countries, mainly the USA, Japan, Korea and the Russian Federation.  
\*Light Water Reactor Fuel Performance

- Nuclear Historic Landmark Award: The Areva Chalon/St. Marcel Plant, in the Burgundy region of France, was presented with the Nuclear Historic Landmark Award during the past ANS Winter Meeting in Reno, for “successfully demonstrating its uninterrupted capacity to manufacture more than 500 high-quality heavy components for nuclear plants worldwide” since 1975.

- [Hungary](#)

It was reported that there was a recent announcement that the Government of Hungary decided to seek Parliament’s support for the expansion of the Paks Nuclear Power Plant. Building two more units will be considered, with construction possibly starting in 4-5 years. The units, each of capacity 1,000-1,100 MW, would go online in 2020.

- [India \(http://www.ins-india.org\)](http://www.ins-india.org)

[R.K. Singh](#), Secretary of the Indian Nuclear Society (INS), sent the following reports:

In the context of the centenary celebrations of [Dr. Homi Bhabha’s](#) birth, the Indian Nuclear Society has organized a massive National Public Awareness Programme to popularise fascinating, challenging and multidisciplinary Nuclear Science and Technology. The Kalpakkam branch of the Society at Madurai, Tamilnadu, and the Vellammal College of Engineering and Technology have organized a large meeting for 2009 April 27 with the theme of “Nuclear techniques for Research, Industry and Society”.

Also, the INS’s One-Day National Seminar on “Atomic Energy in the Development of the Nation” at Periyar Maniammai University, Vallam, Thanjavur, Tamilnadu on 2009 April 11 was a grand success. Participants from Institutes and Colleges of the other neighboring towns came in large numbers to attend the Seminar.

- [International Nuclear Societies Council \(INSC\)](#)

Results from the recent INSC ballots: [Bernard Jolly](#), Executive Director of the French Nuclear Energy Society, has been unanimously elected as INSC’s First Vice



Chairman for 2009-2010 and [Dr. William Burchill](#), ANS President, was voted in as Secretary/Treasurer.

Also, the INSC has changed the address of its website: the URL is now <http://insc.ans.org>.

- [Italy](#)

[Prof. Mauro Bonardi](#) reports on the situation of nuclear power in Italy:

- The Italian population is now greatly in favour (60 to 65%) of installing new NPP in Italy (precise locations are still under study, but several have had a licence from IAEA for the past 40 years - in Lombardia, Piemonte, Emilia, Romagna, Lazio and several other Italian regions).
- Very recently [Prime Minister Dr. Silvio Berlusconi](#) signed an official agreement (for ENEL) with [French President Nicholas Sarkozy](#) (for EdF) to commission and build 4 new EPRs (1600 MWe, AREVA-Siemens). Construction of the first one would start in 2012 and end in 2020.  $4 \times 1600 \text{ MWe} = 6400 \text{ MWe}$  is about 14% of the present electrical capacity in Italy (54-56 GWe in 2008, including the 14-18 % of nuclear electricity imported from France - of course through France-Switzerland, Austria and Slovenia).
- The present Government is very stable and Prime Minister Berlusconi has a popularity rating close to 65% (it never happened before). In my opinion, the present political situation will be stable for not less than 10 years (5 + 5 years legislatures).
- For practical purposes, the Green Party has disappeared from Parliament, with none reelected in 2008. A similar situation is typical of Europe, with a few exceptions. And finally pro-nuclear positions were expressed in the last two years by prominent members of the political opposition.
- At the moment, ENEL is owner of 66 % of Slovenske Elektrarne and 12.5 % of the Flamanville plant. ANSALDO-Nucleare (Genova) is involved in international NPP projects (Romania, Bulgaria, others).

- [Japan](#)

[Prof. Yoshiaki Oka](#) of the University of Tokyo sends the following item:

The First International Summer School of Nuclear Power Plants and Young Generation Workshop (“Bridging Fundamental Studies with Practical Applications”) will be held 2009 July 28 to August 5 in Tokai-Mura, Ibaraki



Prefecture, Japan. Lecturers are invited from internationally renowned universities, research institutes, and industry. Participants will be not only PhD students, but also young researchers and engineers. The Young Generation Workshop will be held every day during the lunch break. The basic philosophy of the school is to link fundamental studies to practical application. The International Summer School is co-sponsored by the GoNERI program of the University of Tokyo and the Japan Atomic Energy Agency (JAEA) in cooperation with the Atomic Energy Society of Japan (AESJ). Information on these activities, a program outline as well as an application form, are available on [www.nuclear.jp/summerschool/](http://www.nuclear.jp/summerschool/).

The [ANS Globe](#) also received news from the Japan Section of the ANS. [Kiyoshi Oyamada](#) of ANS Japan Section steering committee indicated that some members of the Section's steering committee changed in April. The new members are as follows:

- Chair: [Akira Fujita](#) (JGC)
- Vice-chair: [Michihiro Ozawa](#) (Hitachi)
- Secretary of general affairs: [Kiyoshi Oyamada](#) (JGC)
- Secretary of account: [Yoshishige Kawada](#) (Hitachi)
- Committee members: [Tomio Tanzawa](#) (TCU)

[Ms. Chihiro Kumakiri](#), of the AESJ Secretariat, also sent a report on international conferences in Japan:

- 2009 International Congress on Advances in Nuclear Power Plants (ICAPP '09), 2009 May 10-14, Tokyo, <http://www.icapp09.org/>
- 5<sup>th</sup> International Symposium on Radiation Safety and Detection (ISORD-5), 2009 July 17-18, Kitakyushu, <http://meteor.nucl.kyushu-u.ac.jp/isord-5/>
- Thirteenth International Topical Meeting on Nuclear Reactor Thermal Hydraulics (NURETH-13), 2009 September 27-October 2, Kanazawa, Ishikawa, <http://www.nureth13.org/>
- [Latin American Section \(www.las-ans.org.br\)](#)

The Latin American Section is organizing its 2009 Symposium, to be held in Buenos Aires, 2009 June 23-26. The Symposium is intended to provide an overview of the present situation of nuclear energy, its applications and future challenges, in order to keep the nuclear option current. Main topics to be discussed at the Symposium are Energy Planning, Nuclear Electricity Generation, Medical and Industrial Applications, Human Resources Training and Public Communication.

- [Malaysia \(http://www.nuklearmalaysia.org\)](http://www.nuklearmalaysia.org)

[Dr. Nahrul Khair](#), President of the Malaysian Nuclear Society (MNS), sends the following report:

### **INC'09**

The Malaysian Nuclear Society (MNS), in collaboration with the Malaysian Nuclear Agency and Malaysian Radiation Protection Association. is organizing a three-day

International Nuclear Conference (INC'09), 28 June – 1 July. The conference is to take place at Putra World Trade Centre (PWTC), in bustling Kuala Lumpur, capital city of Malaysia. The Conference theme is “Strengthening Partnership in Nuclear Energy” and its main focus is nuclear energy. The Asian region is expected to be actively playing its role in the “nuclear renaissance”, with several countries in the region already at various stages of planning to introduce nuclear in their energy mix. INC'09 is the third in a series of similar conferences organized by MNS, following INC'97 and INC'02.

Papers in the following areas are expected to be presented in two parallel sessions during the conference: nuclear power policy issues, energy planning, nuclear-power-plant technology assessment, reactor technology, nuclear fuel cycle, financial and economic aspects of nuclear power, public acceptance, human capital development, siting of nuclear power plants, safety, security and safeguard of nuclear material, infrastructure development, supporting technology, and also non-power applications of nuclear technology. As in past conferences, several companies will also take part in an exhibition, to display their products and services related to nuclear technology. An International Conference on Neutron and X-ray Scattering (ICNX 2009) will also be held in conjunction with INC'09. The MNS is offering reduced registration fees to all members of the American Nuclear Society (ANS), Canadian Nuclear Society (CNS), and other societies with which it has active cooperation.

### **Two Decades and Forging Ahead**

The year 2009 has special meanings for Malaysian Nuclear Society (MNS). It is twenty-years old this year. It enjoys the support of over 500 members, comprising students, professionals, and corporate members from the public and private organizations.

The annual “Hiroshima and Nagasaki” commemoration day will this year continue with the seminar on beneficial applications of nuclear science and technology. The seminar program is a new format that was introduced last year. Last year, it was the turn of Universiti Sains Islam Malaysia (USIM) at Nilai to host the event. More than 200 university and secondary-school students participated in the event. That was the first time that the H&N event was held outside of Kuala Lumpur. Nilai is some 12 kilometers south of Putrajaya, the new administrative center of the federal government.

H&N'09 will move further south when Universiti Teknologi Melaka (UTEM) is proposed to be the host. H&N was held at the locations of the co-organizer of the event. The first was in 2002 with Dewan Bahasa dan Pustaka, a literary agency, followed by University Malaya (UM), University Teknologi MARA (UiTM), Management and Science University Malaysia (MSU), Universiti Kebangsaan Malaysia (UKM), and International Islamic University Malaysia (IIUM). The event has always been held at either 6 or 9 August every year.

The event has always enjoyed good participation, indicating the healthy interest among professionals and students on the benefits of the applications of nuclear technology and current development in the country. The choice of the date of the bombings of Hiroshima and Nagasaki was made to deflect attention from the ‘dark’ side of the technology and the devastation it can inflict on humankind, should it be misused again. The promotion of its peaceful applications through exhibitions and seminars on that day also hammer home to the public that nuclear technology is not all bad.

- [Morocco](#)

[Prof. El Hassan Sayouti](#) sent a report summarizing AIGAM's recent and planned activities:

During the last two years AIGAM organized several events concerning the promotion of, and communication with the public on, peaceful uses of nuclear technology.

- AIGAM edits a Bulletin which publicizes its principal activities and international events on nuclear technology (three issues were published in 2007 and 2008)
- The AIGAM web site is still visited by a number of students and media
- Concerning the media, AIGAM organized an information day in March 2007 for the oral, written and TV media. More than thirty people participated in this seminar.
- In October 2008, AIGAM organized an international conference on ‘The Fuel Cycle and Opportunities for the Moroccan Economy’. More than two hundred people participated in this conference. The Minister of Energy and Mining gave a lecture in the opening session. She congratulated AIGAM for its efforts in developing the nuclear culture at the national level, especially in the sense that Morocco needs to develop its nuclear power program by 2020. For this reason, public acceptance is very important and AIGAM is playing this role very well.
- In relation with energy, AIGAM participated in the first national energy conference, held in Rabat 2009 March 6. In this conference, the King’s message to participants was very clear regarding nuclear energy. The national strategy on energy for 2020-2030 previews the utilization of nuclear power to assure the independence and the diversification of energy resources, as the minister of energy had presented.
- Concerning its program plan for 2009, AIGAM will participate with another NGO on a national conference on “Nuclear Power: Opportunities for the Electric National Sector”. This conference will be held in Casablanca 2009 June 5.
- AIGAM is also preparing a national conference on developing human resources in relation with the development of the Moroccan nuclear power program. This conference will be held in Rabat in 2009 October. AIGAM projects to carry out a national study on nuclear education and how to adapt it to industrial nuclear power requirements.

- [OECD Nuclear Energy Agency \(http://www.nea.fr\)](http://www.nea.fr)

The Nuclear Energy Agency (NEA) is a specialised agency within the OECD that helps its member countries to maintain and further develop, through international co-operation, the scientific, technological and legal bases required for a safe, environmentally friendly and economical use of nuclear energy for peaceful purposes. Its 28 member countries in Europe, North America and the Asia-Pacific region account for approximately 85% of the world's installed capacity for producing nuclear energy.

### **A new outlook for nuclear energy**

The Agency launched its first *Nuclear Energy Outlook* (NEO) in October 2008. The NEO responds to the changing dynamics and renewed interest in nuclear energy and arrives at a moment when energy security, climate change and the cost of energy have become priorities in both short-term and long-term energy policies. Using the most current data and statistics available, the NEO provides projections up to 2050 to consider growth scenarios and potential implications on the future use of nuclear energy. It also offers unique analyses and recommendations on the possible challenges that lie ahead.

### **The NEA celebrates its 50<sup>th</sup> anniversary**

An international array of over 300 dignitaries and government experts in the field of nuclear energy gathered in Paris on 16 October 2008 to mark the 50th anniversary of the creation of the NEA and to discuss the future use of nuclear power for peaceful purposes. In addition to keynote presentations and round-table discussions, both government ministers and private-sector CEOs made statements on nuclear energy policy and strategic directions. The programme and complete footage of the high-level session are available on the NEA website at [www.nea.fr/html/general/50th](http://www.nea.fr/html/general/50th).

### **Key issues**

The key issues surrounding current and future use of nuclear energy are covered in detail in the recently published *Nuclear Energy Outlook*. Some of the most significant concern the provision of a secure energy supply at affordable prices and the mitigation of climate change. Nuclear energy is produced in 17 OECD member countries and the uranium resources used for its fuel benefit from a diverse and stable geopolitical distribution. In terms of costs, although nuclear energy has high initial capital costs, its total generation costs are largely insensitive to fuel costs and thus particularly stable. For example, a doubling of fuel prices would increase generation costs by about 40% for coal and 75% for gas, but only 4% for nuclear. In addition, the operational lifetime of many nuclear power plants is now being estimated at 60 years, thereby significantly extending that of the capital asset. Regarding global warming and climate change, nuclear energy can provide electricity with almost no CO<sub>2</sub> emissions, and is the only nearly carbon-free technology with a proven track



record for providing electricity on the scale required.

Radioactive waste management continues to be an important issue on which member countries need to make progress. Deep geological repositories are the preferred solution for the disposal of high-level waste (see the NEA member country collective statement issued in 2008 on this topic) and studies are under way on the potential contribution that reprocessing can make to reducing, though not eliminating, the quantities of high-level waste which require such disposal.

As always, nuclear safety must be ensured to very high standards at all times. Nuclear power plants in OECD countries are closely regulated and have very good safety records with some 10 000 reactor-years of operating experience.

### **Key event**

The International Ministerial Conference on Nuclear Energy in the 21st Century was held in April 2009 in Beijing, China. Organised by the International Atomic Energy Agency, hosted by the Government of the People's Republic of China and co-sponsored by the NEA, it brought together some 400 participants to discuss the future role of nuclear energy. The NEA Director-General moderated a session on energy resources and the environment, and was a keynote speaker on available technology and long-term perspectives. The OECD Secretary-General spoke at the opening ceremony.

### **Current scope of activities**

NEA studies and co-operative activities address nuclear safety and regulation; radioactive waste management; radiological protection and public health; nuclear science; economics, resources and technology; and legal affairs. Full descriptions of ongoing activities in these areas are available on the NEA website at [www.nea.fr](http://www.nea.fr).

The NEA also facilitates the organisation of multinational projects and information exchange programmes to enable interested countries, on a cost-sharing basis, to pursue research or the sharing of data with respect to particular fields or issues. These joint projects, primarily in the area of nuclear safety but also in radioactive waste management and radiological protection, are one of the NEA's major strengths.

In addition, the NEA acts as Technical Secretariat for the Multinational Design Evaluation Programme ([www.nea.fr/mdep/](http://www.nea.fr/mdep/)) and the Generation IV International Forum ([www.gen-4.org](http://www.gen-4.org)).

### **Publications**

The Agency publishes roughly 60 titles a year. Most reports can be downloaded free of charge from the NEA website ([www.nea.fr](http://www.nea.fr)).

Key titles in 2008 included: *Nuclear Energy Outlook*; *Uranium 2007: Resources, Production and Demand*; *Market Competition in the Nuclear Industry*; *The Regulatory Goal of Assuring Nuclear Safety*; *Nuclear Energy Data 2008*; *Timing of High-level Waste Disposal*; and *Regulating the Decommissioning of Nuclear Facilities*.

The NEA also produces two periodicals: the *Nuclear Law Bulletin* and *NEA News*.

- [Pacific Nuclear Council \(http://www.pacificnuclear.org\)](http://www.pacificnuclear.org)

The Pacific Nuclear Council is looking forward to its 17<sup>th</sup> Pacific Basin Nuclear Conference, which will be hosted in 2010 October in Cancún by the Sociedad Nuclear Mexicana.

- [Spain](#)

As of 2009 February 25, the Sociedad Nuclear Española has a new Board. New Executive members are: President [D. José Emeterio Gutiérrez Elso](#), Vice-President [Dña. Lola Morales Dorado](#), Secretary General [D. José Luis Elviro Peña](#), Treasurer [D. Julio Blanco Zurro](#).

[Ms. Teresa Dominguez](#), Past President of the Sociedad Nuclear Española reports that the 2nd Edition of the English-Spanish Dictionary on Nuclear Technology has been published by the Spanish Nuclear Forum (<http://www.foronuclear.org>), with the collaboration of the Engineering company Tecnatom, S.A. This new, revised and updated edition is more ample. It contains a glossary of terms and appendices on acronyms, units, and the periodic table.

- [World Nuclear University](#)

The World Nuclear University's Fifth Annual Summer Institute will be held in Christ Church, University of Oxford, England, 2009 July 5 - August 15.

- [Nice Photos of IC Member Masao Hori at a Gulf Co-operation Council nuclear technology conference in Saudi Arabia.](#)



## News from ANS Divisions

To further the implementation of the Joint Protocol between the IC and the Professional Divisions Committee, we are pleased to include in the Globe some newsworthy Division items, typically gleaned from the Divisions' web pages.

- [Decommissioning, Decontamination, & Reutilization \(DDR\) \(http://ddrd.ans.org\)](http://ddrd.ans.org)

Incoming DDR Chair [Sue Aggarwal](#) (also an IC Member) thanks the many ANS International Agreement Organizations that responded favorably to her request for international co-sponsors of DDR 2010, 29 August to 02 September, Idaho Falls, ID, USA.

- [Mathematics and Computation Division \(MCD\) \(http://mcd.ans.org\)](http://mcd.ans.org)

MCD organized the 2009 International Topical Conference on Advances in Mathematics, Computational Methods, and Reactor Physics, held 2009 May 3-7 in Saratoga Springs, NY.

- [Reactor Physics Division \(RPD\) \(http://rpd.ans.org\)](http://rpd.ans.org)

RPD enjoyed an extremely well attended and very successful PHYSOR-2008, held 2008 September 14-19 in Interlaken, Switzerland. More recently, RPD organized its Reactor Physics Topical "Advances in Nuclear Fuel Management IV", held in Hilton Head, SC, 2009 April 12-15. RPD is now looking forward to PHYSOR-2010, to be held 2010 May 9-14, in Pittsburgh, PA.

- [Thermal Hydraulics Division \(THD\) \(http://thd.ans.org\)](http://thd.ans.org)

THD is looking forward to NURETH-13, which will be held in Kanazawa, Japan, 2009 September 27 to October 2. Details can be found at <http://www.nureth13.org>. The following conference in the series, NURETH-14, will be hosted by the Canadian Nuclear Society at the Hilton Hotel in Toronto, Canada, 2011 September 25-30. At the 2009 ANS Annual Meeting in Atlanta, Georgia, THD is organizing 8 contributed paper sessions, with a record number of summaries (48). This represents a new high for THD and is the highest among all divisions at this conference. The winner of the 2008 ANS Technical Achievement award was the [late Professor Larry Hochreiter](#). [Professor Jack Brenizer](#) accepted the award on behalf of Larry's family and friends during a memorial session honoring Prof. Hochreiter. The session was chaired by [Prof. Y. A. Hassan](#) and [Prof. S. Kim](#).

## Highlights from the 2008 November Meeting in Reno

Two major presentations were made to the meeting of the ANS International Committee in Anaheim. A "digest" of these presentations is reproduced here.

### **Highlight 1: Presentation on "Nuclear Power in Ukraine", by the Ukrainian Nuclear Society**

This very interesting picture of the nuclear-power sector in Ukraine was presented by [Prof. Oleksandr Klyuchnykov](#), Director of the Institute for Safety Problems in NPP of the National Academy of Sciences of Ukraine, and President of Ukrainian Nuclear Societies since 2008, and by [Sergiy Barbashev](#), Researcher at the Institute, Founder of the Ukrainian Nuclear Society, and currently its Executive Secretary and Vice President.

MINISTRY OF FUEL AND ENERGY OF UKRAINE  
**ЕНЕРГОАТОМ**  
 NATIONAL NUCLEAR ENERGY GENERATING COMPANY  
**Ukrainian Nuclear Society**

ANS INTERNATIONAL COMMITTEE MEETING

**Development of Nuclear Power Sector of Ukraine**

Reno, Nevada, USA  
 November, 2008

**Nuclear Power Sector of Ukraine**

Условные обозначения  
 List of terms:

Типы реакторов  
 Type of reactors

- VVER-1000
- VVER-440

**National Nuclear Energy Generating Company "Energoatom"**

Currently, Ukrainian NPPs have 15 nuclear power units in operation. Their total installed capacity is 13 835 MW, of which:

- 13 - power units with VVER-1000 reactors
- 2 - power units with VVER-440 reactors

- Zaporizhzhya NPP**  
6 nuclear power units: VVER-1000
- Rivne NPP**  
4 nuclear power units: 2 – VVER-440, 2 – VVER-1000
- South Ukraine NPP**  
3 nuclear power units: VVER-1000
- Khmelnytsky NPP**  
2 nuclear power units: VVER-1000

**New Power Facilities of NNEGC "ENERGOATOM"**

During the period of Ukraine's independence, there were commissioned:

- 3 power units - #6 at Zaporizhzhya NPP (Oct. 19, 1995), #2 at Khmelnytsky NPP (Aug. 07, 2004), #4 at Rivne NPP (Oct. 10, 2004)
- 2 hydro power units of Tashlyk HPSP (South Ukraine power complex):
  - hydro power unit #1 (Sept. 21, 2006)
  - hydro power unit #2 (Aug. 17, 2007)

Today, Ukraine is among top five of European countries utilizing nuclear power

**Place of NPPs in Power Sector of Ukraine**

Installed Generation Capacities

Structure of Electricity Delivery to the Wholesale Electricity Market

Category	NPP	HPP	TPP and others
Installed Generation Capacities	26.6%	9.3%	64.1%
Structure of Electricity Delivery to the Wholesale Electricity Market	49.9%	4.6%	45.5%

**Capacity Factor**

Year	Capacity Factor (%)
2000	68.9%
2001	73.5%
2002	75.2%
2003	78.5%
2004	81.4%
2005	73.2%*
2006	74.4%*
2007	76.4%*
1 квартал 2008	85.1%

\* Decrease of capacity factor in 2005-2007 was due to the extension of outage duration, in particular, for the reasons of:

- Design deficiencies of high speed generators
- Performance of scheduled activities on operating life extension

**Energy Strategy of Ukraine till 2030**

The Government of Ukraine approved scenario of the power industry development till 2030, which envisages:

- Retaining of nuclear power share in the total electricity generation in Ukraine at the level of 50%
- Increase of total installed capacity of Ukraine's NPPs up to 29.5 GW
- Life extension of power units in operation by 15 years beyond the design life
- Start of new NPP power units construction with a unit capacity of 1000 - 1500 MW
- Commissioning of power units #3 and #4 at Khmelnytsky NPP till 2016

**Construction of New Power Units**

Construction of new power units is envisaged on the sites of operating NPPs

Prior to construction of Khmelnytsky NPP units #3 and #4 the following activities will be held:

- State environmental review and state review of nuclear and radiation safety of the projects in question
- Public hearings on power units construction, with their safety level and environmental impact been substantiated
- Consultation with neighboring countries about consequences of putting power units in operation

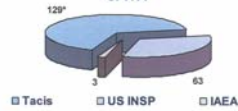




## International Cooperation

Implementation of programs of International Technical Assistance (ITA) is aimed at safety improvement of nuclear power plants of Ukraine

Number of completed projects of ITA



The ITA programs comprise :

- ✓ Package of activities on operational safety
- ✓ Personnel training
- ✓ Development and improvement of scientific and technical support



\* Including the projects that were cancelled

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## Cooperation in the framework of International Technical Assistance



### Cooperation with the United States

✓ All in all, 75\* projects were launched, their total funding being USD 296 mln.



### Cooperation with the European Commission

✓ 163 projects under Tacis-1992/2002 и Tacis-2004 have been implemented and are underway for the total amount of Euro 171 mln.

✓ Ukraine received for approval Action Plan of Tacis-2006 that comprises 3 projects with the total budget of Euro 29.2 mln.



\* Including Chernobyl projects

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## Highlight 2: Presentation on the International Youth Nuclear Congress ([www.iync.org](http://www.iync.org)), by Lisa Stiles, Former IYNC President

IYNC Background:

- Formed in 1998
- Network of young professionals in over 50 countries with goals to:
  - develop new approaches to communicate the benefits of nuclear power
  - promote the peaceful use of nuclear science and technology
  - transfer knowledge from today's leading experts to the next generation

The IYNC has held biennial Congresses:

- 2000, Bratislava, Slovakia
- 2002, Daejeon, South Korea
- 2004, Toronto, Canada
- 2006, Stockholm, Sweden/Olkiluoto, Finland
- 2008, Interlaken, Switzerland (326 attendees, 29 countries represented, 120 papers)

IYNC today:

- Global voice of young professionals in nuclear
- Stimulates development of national/regional Young Generation Networks (YGNs)
  - Financial support to regional meetings such as last year's South African Young Nuclear Professionals Society (SAYNPS) Conference
- Special projects to advance the interests and development of young professionals around the world
  - Declaration on Nuclear Science and Technology presented at IYNC 2006 calling on world leaders to recognize the role of nuclear science and technology in meeting sustainable development goals
  - Young Professional Engagement Survey

IYNC Business:

- Elected New Officers
  - President: [Hans Korteweg](#), Belgium



- Secretary: [Ekaterina Ryabikovskaya](#), Russia
- Treasurer: [Ryan Stiltner](#), USA
- Selected Host of 2010
  - Four proposals: Brazil, Russia, South Africa, United States
  - Winner for IYNC2010 (July 12-18) was Cape Town, South Africa



## **Societies with Collaboration Agreements with ANS**

The following is a list of nuclear societies with collaboration agreements with the ANS, along with the corresponding website addresses. The Table contains also a few other entries of interest to ANS International Committee members.

<b>Society</b>	<b>Website or E-Mail Address</b>
Asociación Argentina de Tecnología Nuclear	-
Associação Brasileira de Energia Nuclear	<a href="http://www.aben.com.br">www.aben.com.br</a>
Association des Ingénieurs en génie atomique du Maroc	-
Atomic Energy Society of Japan	<a href="http://wwwsoc.nii.ac.jp/aesj/index-e.html">wwwsoc.nii.ac.jp/aesj/index-e.html</a>
Australian Nuclear Association	<a href="http://www.nuclearaustralia.org.au">www.nuclearaustralia.org.au</a>
Bangladesh Nuclear Society	-
British Nuclear Energy Society	<a href="http://www.bnes.com">www.bnes.com</a>
Bulgarian Nuclear Society	<a href="http://www.bgns.bg">www.bgns.bg</a>

Canadian Nuclear Society	<a href="http://www.cns-snc.ca">www.cns-snc.ca</a>
Chinese Nuclear Society	<a href="http://www.ns.org.cn">www.ns.org.cn</a>
Croatian Nuclear Society	<a href="http://hnd.zvne.fer.hr">hnd.zvne.fer.hr</a>
Czech Nuclear Society	<a href="http://www.csvts.cz/cns">www.csvts.cz/cns</a>
European Nuclear Society	<a href="http://www.euronuclear.org">www.euronuclear.org</a>
Hungarian Nuclear Society	<a href="http://www.kfki.hu/~hnucsoc/hns.htm">www.kfki.hu/~hnucsoc/hns.htm</a>
Indian Nuclear Society	<a href="http://www.indian-nuclear-society.org.in">www.indian-nuclear-society.org.in</a>
Israel Nuclear Society	<a href="mailto:meins@tx.technion.ac.il">meins@tx.technion.ac.il</a>
Korean Nuclear Society	<a href="http://www.nuclear.or.kr/e_introduce.php">www.nuclear.or.kr/e_introduce.php</a>
Lithuanian Energy Institute	<a href="http://www.lei.lt">www.lei.lt</a>
Malaysian Nuclear Society	<a href="http://www.mint.gov.my/mns">www.mint.gov.my/mns</a>
Nuclear Energy Society of Kazakhstan	<a href="http://www.nuclear.kz">www.nuclear.kz</a>
Nuclear Energy Society of Russia	<a href="mailto:ns@kia.ru">ns@kia.ru</a>
Nuclear Energy Society of Slovenia	<a href="http://www.drustvo-js.si">www.drustvo-js.si</a>
Nuclear Energy Society of Thailand	<a href="http://www.nst.or.th">www.nst.or.th</a>
OECD/Nuclear Energy Agency	<a href="http://www.nea.fr">www.nea.fr</a>
Polish Nuclear Society	<a href="http://www.ptn.nuclear.pl">www.ptn.nuclear.pl</a>
Romanian Nuclear Energy Association	<a href="http://www.aren.ro">www.aren.ro</a>
Romanian Society for Radiological Protection	<a href="http://www.ispb.ro/rsrp.htm">www.ispb.ro/rsrp.htm</a>
Slovak Nuclear Society	<a href="http://www.nuc.elf.stuba.sk">www.nuc.elf.stuba.sk</a>
Sociedad Nuclear Española (SNE)	<a href="http://www.sne.es">www.sne.es</a>
Sociedad Nuclear Mexicana	<a href="http://www.sociedadnuclear.org.mx">www.sociedadnuclear.org.mx</a>
Ukrainian Nuclear Society	<a href="http://www.ukrns.odessa.net">www.ukrns.odessa.net</a>
Women in Nuclear – Global	<a href="http://www.win-global.org">www.win-global.org</a>
<b>Affiliated National Societies</b>	<b>Website or E-Mail Address</b>
Belgian Nuclear Society	<a href="http://www.bns-org.be">www.bns-org.be</a>
<b>Associated Nuclear Organizations</b>	<b>Website or E-Mail Address</b>
International Nuclear Societies Council	<a href="http://insc.ans.org">http://insc.ans.org</a>
Pacific Nuclear Council	<a href="http://www.pacificnuclear.org">www.pacificnuclear.org</a>
<b>Non-U.S. Local Sections</b>	<b>Website or E-Mail Address</b>
Austrian Section	
French Section	<a href="http://local.ans.org/france/">http://local.ans.org/france/</a>
Italian Section	
Japanese Section	
Latin American Section	<a href="http://www.las-ans.org.br">www.las-ans.org.br</a>
Korean Section	
Swiss Section	
Taiwan Section	<a href="mailto:u805301@taipower.com.tw">u805301@taipower.com.tw</a>

# Calendar of Events

Some Upcoming International Conferences on Nuclear and Related Topics  
(Please send us information about your upcoming conferences, for inclusion in this space.)

## 2009

- 14-18 June: ANS Annual Meeting, Atlanta, GA, USA – <http://www.ans.org/meetings>
  - 22-24 June: FISA-2009 Conference, “Seventh European Conference on EURATOM Research and Training in Reactor Systems”, Prague, Czech Republic, organized by the EC Directorate-General for Research - [http://cordis.europa.eu/fp7/euratom-fission/events\\_en.html](http://cordis.europa.eu/fp7/euratom-fission/events_en.html)
- 
- The banner for the FISA 2009 conference features the title 'FISA 2009' in large green letters at the top. Below the title, it specifies the location as 'Prague, Czech Republic' and the dates '22-24 June 2009'. The main text reads 'Seventh European Commission conference on Euratom research and training in reactor systems'. The banner includes several images: a reactor core, a group of people, and a landscape. At the bottom, there are logos for 'EU2009.CZ', the European Commission, and the '7th Framework Programme'.
- 23-26 June: 2009 Symposium of the Latin American Section of the ANS, “Integration of Nuclear Programs in Latin America”, Buenos Aires, Argentina – <http://www.las-ans.org.br>
- 28 June - 1 July: INC’09, “Strengthening Partnership in Nuclear Energy”, Kuala Lumpur, Malaysia; contact: [inc09@nuclearmalaysia.gov.my](mailto:inc09@nuclearmalaysia.gov.my).
- 29 June –3 July: ICENES-2009, 14th International Conference on Emerging Nuclear Energy Systems, Ericeira, Portugal, <http://www.itn.pt/icenes2009/> - organized by ITN (the Nuclear and Technology Institute, Sacavém, Portugal) and IPFN (Institute of Plasma and Nuclear Fusion, Lisbon).
- 12-17 July: The Twelfth Quadrennial International Conference on Fracture (ICF12), Ottawa, Ontario, Canada - <http://www.icf12.com>
- 12-17 July: 18th International Symposium on Radiopharmaceutical Sciences (ISRS-18), Edmonton, Alberta, Canada - <http://www.isrs18.com>
- 2-5 August: Utility Working Conference and Vendor Technology Expo, “Back to the Future”, Amelia Island, FL, USA – <http://www.ans.org/meetings>
- 23-27 August: 14<sup>th</sup> International Conference on Environmental Degradation of Materials in Nuclear Power Systems, Virginia Beach, VA, USA – <http://www.ans.org/meetings>

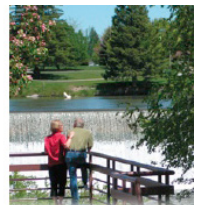
- 31 August-4 September: World Nuclear University Forum, “International Harmonization of Reactor Design Requirements – European Focus”, Manchester, UK – <http://www.world-nuclear-university.org/about.aspx?id=15060>
- 6-11 September: GLOBAL 2009, Paris, France – <http://www.sfen.fr> (and click on the Global 2009 link); contact: Sylvie Delaplace, [global2009@sfen.fr](mailto:global2009@sfen.fr).
- 9-11 September: 34<sup>th</sup> World Nuclear Association Annual Symposium (“Nuclear Revival: Building Confidence at a Time of Economic Instability”), London, U.K. – <http://www.world-nuclear.org>
- 13-17 September: “Nuclear Criticality Safety: Realism, Robustness and the Nuclear Renaissance”, Richland, WA, USA – <http://www.ncsd2009.com>
- 14-17 September: “Nuclear Energy for New Europe 2009” (NENE 2009), Bled alpine resort, Slovenia – organized by the Nuclear Society of Slovenia (<http://www.nss.si/bled2009/>)
- 27 September - 2 October: NURETH-13, Thirteenth International Topical Meeting on Nuclear Reactor Thermal Hydraulics, Kanazawa, Ishikawa, Japan – <http://www.nureth13.org/>
- 28-30 September: 8<sup>th</sup> International LOWRAD Conference, “The Effects of Low Doses and Very Low Doses of Ionizing Radiation on Human Health and Biotopes”, Rio de Janeiro, Brazil – <http://www.lowrad2009.ird.gov.br>
- 2 October: 8<sup>th</sup> National Conference of the Australian Nuclear Association, Sydney, Australia
- 7-9 October: Computational Medical Physics Working Group (CMPWG III), Atlanta, GA, USA – <http://www.ans.org/meetings>
- 19-23 October: MPCA Obninsk 2009, “The 4<sup>th</sup> Russian International Conference on Nuclear Material Protection, Control and Accounting”, Obninsk, Russia – <http://mpca2009.atominfo.ru>
- 27-30 October: International Conference on Opportunities and Challenges for Water Cooled Reactors in the 21<sup>st</sup> Century, Vienna, Austria – <http://www-pub.iaea.org/MTCD/Meetings/Announcements.asp?ConfID=35251>
- 15-19 November: ANS Winter Meeting and Nuclear Technology Expo, Washington, DC, USA – <http://www.ans.org/meetings>



- 7-11 December: International Conference on Fast Reactors and Related Fuel Cycles – Challenges and Opportunities, Kyoto, Japan; organized by the International Atomic Energy Agency and hosted by the Japan Atomic Energy Agency (JAEA) – <http://www-pub.iaea.org/MTCD/Meetings/Announcements.asp?ConfID=35426>

## 2010

- 19-23 April: 2010 RPSD, IRD and BMD Joint Topical, Las Vegas, NV, USA – <http://local.ans.org/nv/jtm2010.html>
- 26-30 April: ND2010, “The 2010 International Conference on Nuclear Data for Science and Technology”, Jeju Island, Korea – <http://www.nd2010.org>
- 9-14 May: PHYSOR 2010, “Advances in Reactor Physics to Power the Nuclear Renaissance”, Pittsburgh, PA, USA – <http://www.physor2010.org>
- 24-27 May: 31<sup>st</sup> Annual Conference of the Canadian Nuclear Society and 34<sup>th</sup> CNS/CNA Student Conference, Montréal, Québec, Canada
- May: International Conference on Nuclear Data for Science and Technology (ND-2010), Jeju, Korea – <http://www.nd2010.org>
- 30 May - 3 June: ENC 2010, European Nuclear Conference 2010, Barcelona, Spain – <http://www.euronuclear.org>
- 13-17 June: ANS Annual Meeting, San Diego, CA, USA – <http://www.ans.org/meetings>
- 8-11 August: Utility Working Conference, Amelia Island, FL, USA – <http://www.ans.org/meetings>
- 8-13 August: ASME International Heat Transfer Conference (IHTC-14), Washington, DC, USA – <http://www.ans.org/meetings>
- 15-18 August: Uranium 2010, 3<sup>rd</sup> International Conference on Uranium and 40<sup>th</sup> Annual Hydrometallurgy Meeting, Saskatoon, Saskatchewan, Canada – <http://www.metsoc.org/u2010/>
- 29 August – 2 September: Decommissioning, Decontamination and Reutilization, DDR 2010, Idaho Falls, ID, USA – <http://ddrtopical2010.org>





- 19-23 September: Plutonium Futures 2010 – The Science, Bloomfield, CO, USA – <http://www.ans.org/meetings>
- 26-29 September: LWR Fuel Performance Meeting/ Top Fuel, Orlando, FL, USA – <http://www.ans.org/meetings>
- 3-7 October: Tenth International Topical Meeting on Nuclear Applications of Accelerators (AccApp '10), Knoxville, TN, USA – <http://www.ans.org/meetings>
- 3-7 October: ICEM'10, “13<sup>th</sup> International Conference on Environmental Remediation and Radioactive Waste Management”, Tsukuba, Japan; contact: [icem10@numo.or.jp](mailto:icem10@numo.or.jp)
- 3-10 October: International Conference on Water Chemistry of Nuclear Reactor Systems (NPC 2010), Québec City, QC; organized by Canadian Nuclear Society (<http://www.cns-snc.ca>)
- 3-10 October: Tenth International Topical Meeting on Nuclear Applications of Accelerators (AccApp '10), Knoxville, TN – <http://www.nd2010.org>
- 24-28 October: 9<sup>th</sup> International Conference on Tritium Science and Technology (TRITIUM-2010), Nara, Japan – E-mail [uda.tatsuhiko@nifs.ac.jp](mailto:uda.tatsuhiko@nifs.ac.jp)
- 24-30 October: 17PBNC, 17<sup>th</sup> Pacific Basin Nuclear Conference, “Nuclear Energy: An Environmentally Sound Option”, Cancún, México; organized by Sociedad Nuclear Mexicana - <http://www.pbnc2010.org.mx>
- 14-18 November: ANS Winter Meeting and Nuclear Technology Expo, New Orleans, LA, USA – <http://www.ans.org/meetings>



## 2011

- 13-17 March: International Topical Meeting on Probabilistic Safety Assessment and Analysis (PSA 2011), Wilmington, NC, USA – <http://www.ans.org/meetings>
- 20-23 March: 5<sup>th</sup> International Symposium on Supercritical-Water-Cooled Reactors, Vancouver, Canada – <http://www.cns-snc.ca>
- 12-15 June: 32<sup>nd</sup> Annual Conference of the Canadian Nuclear Society and 35<sup>th</sup> CNS/CNA Student Conference, Toronto, Ontario, Canada – <http://www.cns-snc.ca>
- 26-30 June: ANS Annual Meeting, Hollywood, FL, USA – <http://www.ans.org/meetings>

- 7-10 August: Third International Joint Topical Meeting on Emergency Preparedness and Response and Robotics and Remote Systems, Knoxville, TN, USA – <http://www.ans.org/meetings>
- 18-23 September: International Nuclear Chemistry Congress (3d-INCC), Città del Mare, Palermo, Sicily, Italy – Contact: Flavia.Groppi@mi.infn.it
- 25-29 September: 14<sup>th</sup> International Topical Meeting on Nuclear Reactor Thermalhydraulics (NURETH-14), 14Toronto, Ontario, Canada – <http://www.cns-snc.ca>
- 30 October-3 November: ANS/ENS International Winter Meeting and Nuclear Technology Expo, Washington, DC, USA – <http://www.ans.org/meetings>

## 2012

- 24-28 June: ANS Annual Meeting, Chicago, IL, USA – <http://www.ans.org/meetings>
- September: 8-th International Conference of Nuclear and Radiochemistry (NRC-8), Lake Area, North-East Italy, Chairman Mauro.Bonardi@mi.infn.it, <http://wwwGIR.mi.infn.it>
- 11-15 November: ANS Winter Meeting and Nuclear Technology Expo, San Diego, CA, USA – <http://www.ans.org/meetings>

## 2013

- 16-20 June: ANS Annual Meeting, Atlanta, GA, USA – <http://www.ans.org/meetings>
- 10-14 November: ANS Winter Meeting, Washington, DC, USA – <http://www.ans.org/meetings>

➔ **Contact ANS International Committee Members by E-mail:**

<b>Officers</b>	<b>Office</b>	<b>e-mail</b>
France C. Brès-Tutino	Chair	<a href="mailto:france.brestutino@wanadoo.fr">france.brestutino@wanadoo.fr</a>
Atambir S. Rao	Vice-Chair	<a href="mailto:a.rao@iaea.org">a.rao@iaea.org</a>
<b>Staff Liaison</b>	<b>Organization</b>	<b>e-mail</b>
Michael Diekman	American Nuclear Society	<a href="mailto:mdiekman@ans.org">mdiekman@ans.org</a>
<b>Ex-Officio</b>	<b>Organization</b>	<b>e-mail</b>
David R. Anderson	Electric Boat Company	<a href="mailto:david.r.anderson@mac.com">david.r.anderson@mac.com</a>
<b>Committee Members</b>	<b>Organization</b>	<b>e-mail</b>
Sue Aggarwal	NMNT International	<a href="mailto:saggarwal@nmnuclear.com">saggarwal@nmnuclear.com</a>
Qi Ao	GE Energy, Nuclear	<a href="mailto:qi.ao@ge.com">qi.ao@ge.com</a>
Hari O. Arora	Consultant	<a href="mailto:hparora@yahoo.com">hoparora@yahoo.com</a>
Régis P. Babinet	Consultant	<a href="mailto:babinet12@hotmail.com">babinet12@hotmail.com</a>
Alexander P. Barzilov	Western Kentucky University	<a href="mailto:alexander.barzilov@wku.edu">alexander.barzilov@wku.edu</a>
Sama Bilbao y León	IAEA	<a href="mailto:ans@thebilbaos.com">ans@thebilbaos.com</a>
Mauro L. Bonardi*	University and INFN of Milano	<a href="mailto:mauro.bonardi@mi.infn.it">mauro.bonardi@mi.infn.it</a>
France C. Brès-Tutino	ANS French Local Section	<a href="mailto:france.brestutino@wanadoo.fr">france.brestutino@wanadoo.fr</a>
Ken E. Brockman	IAEA	<a href="mailto:k.brockman@iaea.org">k.brockman@iaea.org</a>
Frank G. Deconinck	Vrije Universiteit Brussel (VUB)	<a href="mailto:frank.deconinck@vue.ac.be">frank.deconinck@vue.ac.be</a>
Paul J. Fehrenbach	Researcher Emeritus, AECL	<a href="mailto:fehrenbachp@aecl.ca">fehrenbachp@aecl.ca</a>
Marvin S. Fertel	Nuclear Energy Institute	<a href="mailto:msf@nei.org">msf@nei.org</a>
Harold K. Forsen	Retired	<a href="mailto:hforsen@aol.com">hforsen@aol.com</a>
Juan Luis François	Universidad Nacional Autónoma de México	<a href="mailto:juan.luis.francois@gmail.com">juan.luis.francois@gmail.com</a>
Lauren K. Gibson	George Washington University	<a href="mailto:lkgibson@gwu.edu">lkgibson@gwu.edu</a>
Ingeborg Hagenlocher	German Industry Forum ITER	<a href="mailto:Hagenlocher@KA-Heidelberg.de">Hagenlocher@KA-Heidelberg.de</a>
Masao Hori	NSA, Japan	<a href="mailto:mhori@mx.mesh.ne.jp">mhori@mx.mesh.ne.jp</a>
Peter Hosemann	LANL	<a href="mailto:peterh@lanl.gov">peterh@lanl.gov</a>
Rolland A. Langley	Project Time & Cost, Inc.	<a href="mailto:ralangley@earthlink.net">ralangley@earthlink.net</a>
Gail H. Marcus	Consultant	<a href="mailto:GHMarcus@aol.com">GHMarcus@aol.com</a>
Jerry L. McClellan	Sandia National Laboratories	<a href="mailto:jlmccle@sandia.gov">jlmccle@sandia.gov</a>
L. Manning Muntzing	ESCL Director	<a href="mailto:a121313@aol.com">a121313@aol.com</a>
Anneli Nikula	Teollisuuden Voima Oy	<a href="mailto:anneli.nikula@tvo.fi">anneli.nikula@tvo.fi</a>
Hisashi Ninokata	Tokyo Institute of Technology	<a href="mailto:hninokat@nr.titech.ac.jp">hninokat@nr.titech.ac.jp</a>
Patricia D. Paviet-Hartmann	University of Nevada/Las Vegas	<a href="mailto:patricia.paviet-hartmann@unlv.edu">patricia.paviet-hartmann@unlv.edu</a>
Atambir S. Rao	IAEA	<a href="mailto:a.rao@iaea.org">a.rao@iaea.org</a>
Benjamin Rouben*	12 & 1 Consulting	<a href="mailto:roubenb@alum.mit.edu">roubenb@alum.mit.edu</a>
Lisa A. Stiles	Dominion Generation	<a href="mailto:lisa.stiles@dom.com">lisa.stiles@dom.com</a>
Nick Tsoulfanidis	Professor Emeritus, University of Nevada/Reno	<a href="mailto:nucpower@sbcglobal.net">nucpower@sbcglobal.net</a>
Lumin Wang	University of Michigan	<a href="mailto:lmwang@umich.edu">lmwang@umich.edu</a>
Jeremy Whitlock	Atomic Energy of Canada Limited	<a href="mailto:whitlockj@aecl.ca">whitlockj@aecl.ca</a>
Zuoyi Zhang	Tsinghua University	<a href="mailto:zyzhang@tsinghua.edu.cn">zyzhang@tsinghua.edu.cn</a>

\*Co-editors of Globe