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# *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 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.

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## **Contents**

<u><a href="#">From the Chair</a></u>	<b>p. 2</b>
<u><a href="#">News from Sister Societies and International News</a></u>	<b>p. 3</b>
<u><a href="#">Highlights from the 2006 November Albuquerque Meeting</a></u>	<b>p. 12</b>
<u><a href="#">Young-Generation Corner</a></u>	<b>p. 14</b>
<u><a href="#">IYNC2008</a></u>	<b>p. 15</b>
<u><a href="#">Societies with Collaboration Agreements with ANS</a></u>	<b>p. 15</b>
<u><a href="#">Calendar of Events</a></u>	<b>p. 16</b>
<u><a href="#">Contact ANS International Committee Members by E-mail</a></u>	<b>p. 19</b>

## From the Chair



Dear friends,

Consistent with the ANS Strategic Plan Guidelines, in particular, that of “*Strengthening and expanding strategic alliances with international nuclear societies*”, our President strongly emphasized in a recent statement that “ANS has a unique niche role to play in the international undertakings that will lead to the nuclear renaissance...”

The ongoing favourable momentum for nuclear revival within the US and worldwide represents an outstanding opportunity for our Society to “voice strongly and globally its support of the advancement of nuclear science and technology” and to enhance, as a priority, its involvement on the international scene.

As we know, multilateral initiatives and co-operations are being set up in which the US is actively contributing. For example,

- The Department of Energy has announced a new strategic plan for Global Nuclear Energy Partnership (GNEP) initiatives. Three facilities will be assessed: a Fuel Recycling Centre, including reprocessing and fuel fabrication plants, an Advanced Recycling Reactor, and an Advanced Fuel Cycle Research Facility. An international consortium is preparing to bid on building a fast reactor and a reprocessing plant in the US.
- GIF: The Generation IV International Forum, which is leading the way toward innovative nuclear-energy systems, represents an R&D consortium of thirteen members across the world - China and Russia has joined the Policy Group last November - with OECD/NEA and IAEA as permanent observers.

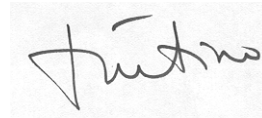
### **Global Interactions Are Essential**

ANS is a key contributor, with the other agreement nuclear societies, to help developing nuclear science and technology, as well as attracting young nuclear engineers within the perspective of bilateral or multilateral co-operations in the frame of research globalization. Let’s not minimize the interest of sharing not only nuclear science and technology, but also nuclear safety regulation and know-how with potential major partners such as China and India, for which nuclear energy will become a major component of energy-supply strategies.

At the International Committee level, nearly twenty different nuclear societies and international organizations are represented. Members volunteered to act as specific contacts to the over thirty nuclear societies that have cooperative agreements with ANS. To strengthen ANS communications within this network, the International Section of the ANS website has been enhanced recently, contact members are activating exchange of information and technical news with their counterparts in order to share it at the IC meetings. In between, the ANS Globe newsletter maintains relationships with sister

societies, amongst the international ANS network and in particular with the Young Generation representatives.

Global interactions in such areas will require more efforts on the part of the International Committee to develop efficient strategies capable of deploying education, training and experience on nuclear science and technology across its member societies. I am confident that this challenge can be met if all of us are determined to contribute.



France Brès-Tutino

## News from Sister Societies and International News

- [American Nuclear Society](#): The ANS website now has an enhanced International Section online! It is at <http://www.ans.org/const/international>. This web site revision was recently completed under the direction of International Committee Chair [France Brès-Tutino](#). 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.
- [British Nuclear Energy Society](#):

[John E Earp](#), BA C.Eng, FIMech E, FINucE, President of the British Nuclear Energy Society (BNES), sends this report on the BNES and key activities within the nuclear field in the United Kingdom:

“I took over the presidency from Dr Sue Ion in May last year and since then have taken part in a number of functions representing the society.

The British Nuclear Energy Society (BNES) is the leading ‘Learned Society’ for Nuclear Energy within the UK. The Society functions almost completely by the contributions of volunteers who provide their experience and dedication to provide information on Nuclear Energy issues to members both UK and worldwide; to provide opportunities for members to publish and present papers; to meet and debate issues locally,



John Earp

nationally and internationally; to promote nuclear energy specific training in the UK and to promote increased public understanding of the issues surrounding the use of nuclear energy.

BNES has traditionally (and even more so recently) linked with the Institution of Nuclear Engineers (INuCE) which is a professional body representing a broad cross-section of nuclear engineers engaged in various aspects of nuclear technology, predominantly in the UK, but also in the USA, South Africa and Asia.

The BNES and INuCE collectively represent the largest body of nuclear professionals associated with the UK's nuclear industries. The two societies have members who are involved through both industry links and academia, in all aspects of the fuel cycle from fabrication, through operation of nuclear power plants, to decommissioning and waste management, as well as regulation.

One of the main "products" which enables our joint societies to deliver our mission is "Nuclear Future", the combined journal of British Nuclear Energy Society (BNES) and the Institution of Nuclear Engineers (INUCE). It is printed every two months and around 3,000 copies are sent to members of the two societies and to various academic institutions. Nuclear Future is managed by a joint editorial board of nuclear professionals from both the BNES and INUCE, who suggests topics of interest, advise on the content of specific articles and support the peer review process for technical papers

Each edition of Nuclear Future provides:

- Around 4 to 5 technical papers on nuclear and related subjects. Each paper is reviewed by at least one independent specialist to ensure its high quality and technical accuracy
- News and Comment articles on relevant matter in the nuclear industry both from the UK and worldwide
- The President's page which alternates between BNES and INUCE
- News of the regional branch activities and the Young Generation Network which includes their events and lecture programmes.
- A diverse set of papers. Several notable papers were printed last year.

The nuclear market in the UK, similar to many places around the world, has over the past several years been dominated by decommissioning and clean-up. The UK Government set up the Nuclear Decommissioning Authority (NDA) and established the Committee on Radioactive waste management (CoRWM). The former is now fully functioning and overseeing the spending of approximately £2bn a year and the latter has reported recommending deep geological disposal.

Recently and again as in many places around the world, within the UK there is significant interest in the potential for new nuclear build. The Government has introduced a new Energy review and although at this time the outcome is not yet final it is very clear that it will support the development of new Nuclear plants.

All of these activities by the UK Government are the subject of consultation and

responding to those requests for consultation is a key role for the joint societies because, as the leading learned society and not being involved with any of the major companies which would benefit from activity in the nuclear area, our responses are valued for their independence.

In forming these views to submit for Government I am of course keen to take on board opinions from our members, but in this time when nuclear issues transcend national boundaries and are truly global in nature I am equally keen to maintain our strong links with ANS in order to better inform our activities in the UK.

- [Canadian Nuclear Society](#) (CNS): Current 1<sup>st</sup> VP & President Elect, [Mr. Eric Williams](#), will become Canadian Nuclear Society President for the term 2007 June to 2008 June during the CNS Annual Conference being held in Saint John, New Brunswick, 2007 June 3-6. He will be succeeding [Dr. Daniel Meneley](#), the current CNS President.
- [France](#): The [French Section](#) and the [Société Française d'Énergie Nucléaire](#) are in final readiness for the 2007 International Congress in Nuclear Power Plants ([ICAPP-2007](#)), to be held in Nice, France, May 13-18, 2007.
- [Indian Nuclear Society](#):

[Dr. Placid Rodriguez](#), FNAE, FASc, FNASc, Raja Ramanna Fellow and AICTE-INAE Distinguished Visiting Professor at the Indian Institute of Technology, Madras, is the President of the Indian Nuclear Society. Our sincerest congratulations to [Dr. Placid Rodriguez](#), who was awarded a Lifetime Achievement Award 2006 by the Indian Institute of Welding. The award was presented at the National Welding Seminar 2006, held in Chennai, India, 2006 November 24.

The Executive Committee of the Indian Nuclear Society is pictured in this photo.



**Sitting (from left) - Shri R.P. Singh, Treasurer; Shri H.S. Kushwaha, Member; Dr. R. Chidambaram, Past President and Member; Dr. Placid Rodriguez, President; Shri G.D. Mittal, Secretary; Dr. V. Venugopal, Vice President.**  
**Standing (from left) - Shri R.K. Sinha, Member; Shri M.L. Joshi, Member; Shri S.A. Bhardwaj, Member; Shri R.K. Singh, Joint Secretary; Shri A.K. Sivastava, Member; Shri S.K. Agarwal, Member; Shri Jagdish Sharma, Member.**  
**Not present in photo - Dr. Gurcharan Singh, Joint Treasurer; Dr. S.Kailas, Member; Shri S.K. Mathetra, Member.**



- [The International Nuclear Societies Council:](#)

Our heartiest congratulations to [Mr. Jorge Spitalnik](#) (World Federation of Engineering Organizations), winner of the INSC's 2006 Global Award. The Award was presented to Mr. Spitalnik 2006 November 11, during the ANS Winter Meeting in Albuquerque, New Mexico. The text of the Award reads as follows:

**The INTERNATIONAL NUCLEAR SOCIETIES COUNCIL confers herewith its  
2006 GLOBAL AWARD to**

**JORGE SPITALNIK  
WORLD FEDERATION OF ENGINEERING ORGANIZATIONS**

**for his exceptional leadership and pioneering role in implementing nuclear manpower qualification and nuclear safety programs towards high standards of excellence in developing countries, and for his exceptional contributions to the establishment of international organizations promoting the encouragement and appreciation of nuclear professionals' activities worldwide.**



At the award ceremony: from left to right, INSC 1st Vice-Chairman [Andy Kadak](#), INSC 2006 Global Award recipient [Jorge Spitalnik](#), and 2005-2006 INSC Chairman [Bertrand Barré](#).

The INSC 2006  
Global Award

The INSC election of 2007/2008 Officers resulted in the following slate:

- Chair: Dr. Andrew C. Kadak, American Nuclear Society
- 1<sup>st</sup> Vice Chair: Dr. Gustavo Alonso, Sociedad Nuclear Mexicana
- 2<sup>nd</sup> Vice Chair: Dr. Shunsuke Kondo, Atomic Energy Society of Japan
- Secretary/Treasurer: Dr. Frank G. Deconinck, European Nuclear Society.

- [Italy:](#)

Several Italian companies (Ansaldo Nucleare SpA Genova, ENEL <http://www.enel.it>, SOGIN Roma email [info@sogin.it](mailto:info@sogin.it)) are involved in international projects and construction of new NPPs (e.g. Cernavoda HWR) and nuclear facilities as well. Ansaldo Nucleare has its headquarters in Genova, N-W Italy, with important participation in two companies located abroad: NNS in France and ANSERV in Romania. It can additionally rely on the support of Ansaldo Energia with local offices in about 20 countries worldwide (it belongs to the Industrial Groups Ansaldo Energia and Finmeccanica). ENEL is now owner of 66% of the Slovak electronuclear company Slovenske Elektrarne. SOGIN has the main mission of the decommissioning of present Italian nuclear facilities (4 former NPPs and 4 nuclear research sites), nevertheless it is involved in the managing of international NPPs.

The National Institute of Nuclear Physics (<http://www.INFN.it>) is devoted to basic nuclear research. The institution is organized in 4 National Laboratories (Frascati-Roma, Legnaro-Padova, Catania and Gran Sasso-L'Aquila). The Italian Nuclear Association - Associazione Italiana Nucleare (AIN) has its headquarters in Rome, C.so Vittorio Emanuele II, 244, [info@assonucleare.it](mailto:info@assonucleare.it), and is devoted to the renaissance of nuclear energy in Italy.

- [Korea:](#)

Preparations are going full blast for the Third Annual World Nuclear University Summer Institute ([www.world-nuclear-university.org](http://www.world-nuclear-university.org)), which will be held in Daejeon, Republic of Korea, from July 14 to August 24, 2007. It is being organized by the WNU Coordinating Centre in cooperation with WNA, IAEA, NEA and WANO, the Korea Atomic Energy Research Institute (KAERI), Korea Hydro & Nuclear Power Co. (KHNP), and the Korean Nuclear Society. The World Nuclear University Summer Institute offers a unique career-building experience for about 100 future world leaders in nuclear science and technology.

[Dr. Philippe Hauw](#) is the WNU Summer Institute Head Coordinator, based in London, UK. [Dr. Byung-Joo Min](#) of KAERI heads the local organizing committee.

The WNU Summer Institute Fellows will benefit from a curriculum including a full range of topics relevant to the future of nuclear technology, will visit various Korean nuclear facilities and will have the opportunity to enjoy cultural and social events in Daejeon and the historic city of Gyeongju.

- [Mexico:](#)

Dr. Juan Luis Francois, Past President of the Mexican Nuclear Society, informs us that the Mexican Nuclear Society will hold the 2007 Joint Meeting in Cancun, México, from July 1 to 15, 2007. This conference is sponsored by the Mexican Nuclear Society, the Mexican Radiological Safety Society, the Latin-American Section of the American Nuclear Society and the Mexican Association for Energy

Economics. The main subject of the conference is: “Contribution of Nuclear Energy to the Sustainable Development of Latin-America”. Further information can be found at <http://congreso.sociedadnuclear.org.mx/en/>.

- [Morocco: Successful PHYTRA1 Conference](#)

PHYTRA1, The First International Conference of the Moroccan Association for Nuclear Engineering and Reactor Technology (“GMTR”) on the Physics and Technology of Reactors and Applications, was held in Marrakech, Morocco, 2007 March 14-16. PHYTRA1 had a very good international range, with a large number of attendees coming from an impressive number of countries in Africa, Europe, America and Asia. ANS Officers at the Conference were ANS President H. MacFarlane, ANS Reactor Physics Division Chair Benjamin Rouben (also representing the Canadian Nuclear Society and Atomic Energy of Canada Limited) and ANS Reactor Physics Division Vice-Chair Farzad Rahnema. Congratulations to the PHYTRA1 Organizing Committee, most particularly Professors L. Erradi (GMTR President), A. Jehouani and O.K. Bouhelal for the very well balanced Conference Program and the excellent organization. The success of PHYTRA1 bodes well for more PHYTRA Conferences in coming years!



PHYTRA1 Closing Ceremony

From left to right:  
Prof. [O.K. Bouhelal](#),  
[L. Erradi](#) and [A. Jehouani](#)

ANS Globe Co-Editor [Ben Rouben](#) with Prof. [L. Erradi](#) and [O.K. Bouhelal](#) at PHYTRA1





- [OECD](#): Information gleaned from the NEA Electronic Bulletin and/or from NEA Press Room on the Nuclear Energy Agency's website (<http://www.nea.fr>)

“The NEA and the Russian Federation sign a Joint Declaration on Co-operation

A joint declaration on co-operation was signed on 21 March 2007 in Moscow during a ceremony attended by officials from the NEA and the Russian Federation agencies involved in its implementation. Konstantin Pulikovsky, Chairman of the Federal Environmental, Industrial and Nuclear Supervision Service (Rostekhnadzor), signed on behalf of the Russian Federation and Director-General Luis Echávarri signed on behalf of the NEA.

Commenting on this noteworthy event, the NEA Director-General [Luis Echávarri](#) said “This joint declaration is highly significant and an important step towards strengthening ties between the Russian Federation and the NEA. Russian participation will enhance the work of the NEA pool of over 3 000 international nuclear experts.” The joint declaration opens the way for the Russian Federation to participate as an observer in all of the Agency's standing technical committees and their working groups. More information is available at <http://www.nea.fr/html/general/press/2007/2007-01.html>.”

- [Pacific Nuclear Council](#)

The following report was prepared by 14<sup>th</sup> PBNC Technical Program Co-Chair [Dr. Alan E. Levin](#), and presented to the ANS International Committee meeting in Albuquerque by [Dr. Gail H. Marcus](#), ANS Representative to the PNC:

The 15<sup>th</sup> Pacific Basin Nuclear Conference (15PBNC) was held in Sydney, Australia, in 2006 October, and feedback on the Conference was very positive. [Dr. Clarence J. Hardy](#) was installed as PNC President during 15PBNC. The newly elected Vice President/President-Elect is [Dr. Chang-Sun Kang](#). [Dr. Paul J. Fehrenbach](#) is the PNC Immediate Past President.

The 16<sup>th</sup> Pacific Basin Nuclear Conference (16PBNC) is scheduled for October 13-17, 2008, in Aomori, Japan. It is being organized by the Japan Atomic Industrial Forum (JAIF) and the Atomic Energy Society of Japan (AESJ).

Preliminary expressions of interest to host the 17<sup>th</sup> Pacific Basin Nuclear Conference were received from the Canadian Nuclear Society, the Chinese Nuclear Society, the Korea Atomic Industrial Forum/Korean Nuclear Society, and the Sociedad Nuclear Mexicana.

EXCEL Services Corporation is the first commercial member organization to join the PNC, and the representative is Professional Divisions Chair [Donald R. Hoffman](#).

- [Romania](#)

Unit 2 of the Cernavoda Nuclear Power Plant is in final stages of commissioning. Both units are CANDU heavy-water reactors.

- [Nuclear Society of Russia:](#)

Congratulations to Kurchatov Institute's Nuclear Reactor F-1, winner of the ANS Nuclear Historic Landmark Award. The 60th Jubilee of F-1 was celebrated on 25 December 2006, the 60<sup>th</sup> anniversary of the commissioning of F-1. Nuclear Society of Russia's Vice President [Andrei Y. Gagarinsky](#) sends the following report, based on the F-1 press release on the occasion of the jubilee:

“December 25<sup>th</sup>, 1946, is a special date in the history of nuclear science and technology development. On this day sixty years ago, on the territory of top secret Laboratory No 2 of the USSR Academy of Sciences (now Russian Research Centre “Kurchatov Institute”), an event of utmost importance occurred: Igor V. Kurchatov and his colleagues reached criticality on their uranium-graphite reactor – F-1. For the first time in Eurasia, a controlled nuclear chain reaction had become a reality.

Development, construction and commissioning of the F-1 reactor during the severe post-war period required all possible efforts, exclusive ingenuity and dedication – first of all, from scientists. Igor Vasilievich Kurchatov, who headed the works on nuclear weapons in 1943, enlisted the services of the country's leading specialists, which had pre-war working experience in nuclear physics and in related science and engineering fields: A.P. Alexandrov, A.I. Alikhanov, V.A. Davidenko, V.P. Dzheleпов, G.N. Flerov, V.V. Goncharov, Yu.B. Khariton, I.K. Kikoin, M.S. Kozodaev, B.V. Kurchatov, V.I. Merkin, L.M. Nemenov, P.E. Spivak, Ya.B. Zeldovich and many others.

However, the knowledge and results obtained in pre-war fission studies were obviously insufficient for solving the technical problems of plutonium production and nuclear bomb construction. Therefore the work of Laboratory No 2 consisted mainly of the experimental studies of fission and of neutron/nuclei interactions, as well as of the theoretical research in this area, performed by talented scientists: A.I. Akhiezer, S.M. Feinberg, V.S. Fursov, I.I. Gurevich and I.Ya. Pomeranchuk.

As a result of the research carried out in Laboratory No 2, strict reactor graphite requirements were developed by November 1944, so that it became possible to develop the special technological process by August 1945, and to start the industrial production of the required quality graphite in October. Thus, the way of producing graphite blocks for nuclear reactors was developed in a very short period and for the first time in the USSR.

In parallel with graphite research performed in Laboratory No 2, the physical parameters of uranium were also explored. The studies showed that a chain nuclear reaction requires very pure uranium, which would contain just a negligible share of admixtures – boron, cadmium and rare-earth elements. Strict physical and technical conditions were developed for its production.

With the receipt of graphite and uranium blocks of the required purity, Laboratory No 2 expanded its physical experiments. Day and night, researchers, laboratory assistants and workers assembled and dismantled graphite prisms containing uranium, performed experiments to determine graphite and uranium thermal-neutron capture cross sections more precisely, studied the parameters of uranium blocks and selected their optimal size and pitch of positioning in a 3D graphite lattice.

Four models were assembled, studied and dismantled before the critical size was achieved. The fifth model finally became a reactor. On December 25<sup>th</sup>, 1946, at 14:00, the 62<sup>nd</sup> reactor layer was assembled, with three cadmium rods introduced into the uranium-graphite lattice.

Igor Kurchatov himself performed the four-hour pre-start operations. At 18:00 on December 25<sup>th</sup>, 1946, an exponentially growing neutron flux density was obtained. This was the moment of the first self-propagating chain fission reaction realized in the Soviet Union.

Afterwards, researchers began to look for the ways of using nuclear energy on land, on water and in space. The world's first NPP, the first Soviet nuclear submarine and the world's first nuclear icebreaker were followed by wide use of nuclear energy at nuclear power plants, on civil ships and in space nuclear-power installations.

The tasks and directions of the research performed on F-1 were gradually changing along with the country's nuclear power industry development and the creation of new research, pilot and experimental reactors. The principal advantage of the facility remained its stable neutron flux, which explains that it still kept its initial core load and unchanged geometry. F-1 became an irradiation center for collective use.”



- Above left: The Nuclear Historic Landmark Award Bronze Plaque for the F-1 Reactor
- Above right: NSR Vice-President A. Gagarinski near the reactor building; the left plaque reads: “A memorial of science and technique - Nuclear reactor F-1 - protected by the State, as national cultural property of Russia.”
- Right: F-1 in 1946



- [Swiss Nuclear Society](#):

The President of the Swiss Nuclear Society is International Committee member [Dr. Ingeborg Hagenlocher](#). The Swiss Nuclear Society will host the next ANS Reactor Physics Topical, PHYSOR-2008, which will be held 2008 September 14-19 in Interlaken, Switzerland. It will also host IYNC-2008, the International Youth Nuclear Congress 2008, which is scheduled 2008 September 20-26, to follow just after PHYSOR-2008.

## **Highlights from the 2006 November Albuquerque Meeting**

- The agreement for cooperation between the ANS and the Sociedad Nuclear Mexicana (SNM) was renewed for five years. [SNM President Gustavo Alonso](#), [ANS President Harold F. McFarlane](#) and [Vice President Donald C. Hintz](#) signed the agreement during the meeting. [Chair France Brès-Tutino](#) thanked the SNM and ANS Officers for their help, and expressed appreciation to [IC Member Juan-Luis Francois](#) for his assistance.
- **IC recommendations to the ANS Nominating Committee:** Since the term of the Americas Director Position of [Dr. Jeremy J. Whitlock](#) (Canada) is concluding in June 2007, the IC recommendations submitted to the 2007 ANS Nominating Committee were for nominations from the Americas/Latin-American Region. The nominees were [Dr. Gustavo Alonso](#) and [Professor Juan-Luis Francois](#), both from Mexico.
- Several good-news items were reported:
  - IC Member [Dr. Gail H. Marcus](#) highlighted the OECD/Nuclear Energy Agency's role as the Secretariat of the new Multinational Design Evaluation Program (MDEP), which emphasizes coordination of licensing reviews and also harmonization of licensing and regulations. Ten countries are involved.
  - IC Member [Therese Donlevy](#) reported on the upcoming publication of an important Australian task force report that will be used as the basis for future public policy debates on energy options in Australia.
  - [Chair France Brès-Tutino](#) reported on the annual World Energy Outlook report of the International Energy Agency (IEA). For the first time, the Agency is pressing for nuclear power. If current policies remained unchanged, world energy demand is forecast to increase by 53% between now and 2030, with over 70% of this increase coming from developing countries, led by China and India, and subsequently CO<sub>2</sub> emissions may increase by 55%. The Agency's message in its report is that "Nuclear power offers considerable advantages in terms of avoiding GHG emissions and of energy security. Otherwise, with current trends, the world is on a course for a dirty, expensive and unsustainable energy future." Urgent government action is required.
  - The Chinese Government is planning to build 40 nuclear power plants by 2020, and Chinese utilities have proposed building a four-unit NPP along the

Yangtze river, as well as a 6-unit NPP in Shandong province (two reactors by 2015).

- In Japan, the JNFL's Rokkashomura Reprocessing Plant produced its first mixed uranium-plutonium oxide in 2006 November.
- In Australia, the new OPAL research reactor reached its full operating power in 2006 November.

- **IC member Dr. Ingeborg Hagenlocher on Waste Management in Switzerland**

[Dr. Ingeborg Hagenlocher](#) is currently Project Manager of Laboratory Programs at NAGRA, the Swiss Agency for Radwaste Management. She is also President of the Swiss Nuclear Society, Board member of the Swiss Nuclear Forum, and Chair of WIN/Women in Nuclear – Switzerland.



[Dr. Hagenlocher](#) presented a very interesting report, a summary of which is given below, together with only a few slides from her presentation:

### **Waste Management in Switzerland – Big Efforts for Small Amounts**

Nuclear-energy legislation in Switzerland adheres to the “polluter pays” principle, stating the waste producers are responsible – under the supervision of the federal authorities – for the permanent safe management and disposal of all categories of radioactive waste. The Federal Government has responsibility for MIR (medicine, industry and research) waste. With a view to fulfilling this task of safe disposal, the operators of the nuclear power plants and the Federal Government set up Nagra in 1972. Over a period of more than 30 years, Nagra developed into an internationally acknowledged centre of competence for the management and safe disposal of radioactive waste. Nagra compiled - in close co-operation with the Paul Scherrer Institute (PSI) - the Swiss Waste Management Programme, which serves as a decision basis for the Federal Authorities.

The new nuclear-energy act and its ordinance, which entered into force in February 2005, specifies deep geological disposal as the strategy to be followed for all categories of waste. Two repositories are planned: one for low- and intermediate-level waste (L/ILW), and one for spent fuel, high-level and long-lived intermediate level waste (SF/HLW/ILW). The new legislation gives the Federal Government greater responsibility in the area of radioactive waste management. It is now required, e.g., to review and approve a waste-management programme to be submitted by the waste producers. It is also responsible for defining the objectives and requirements applying to site selection. The operators of the nuclear power plants are obliged by law to demonstrate the safe disposal of radioactive waste – in the frame of a feasibility study - a so called Entsorgungsnachweis in German. In 1988 the Federal Government found that such a demonstration had been provided successfully for L/ILW, but only partly (based on a crystalline hostrock) for SF/HLW/ILW. To complete this task based on sedimentary

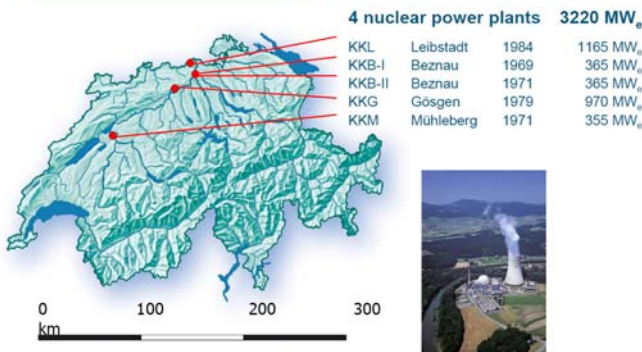


rock formations, Nagra therefore submitted a demonstration project to the Government for approval at the end of 2002. This demonstration of feasibility is neither a siting decision nor a licence application for a precise disposal project. All of the expert opinions (international review team OECD/NEA), national safety authorities (HSK and KSA) identified some open questions and the need for further investigations in some areas. In the opinion of the authorities, however, these open questions do not call the fundamental feasibility of safe disposal into question. The recommendations made by the authorities represent important guidelines for future research and development efforts. Based on these positive national and international review reports the Government approved the feasibility study by end of June 2006.

The Nuclear Energy Ordinance states that the objectives and requirements applying to deep geological disposal are to be specified by the Federal Government in a sectoral plan. This is an instrument from planning law that allows integrated coordination of all aspects of a repository that impact special planning in a potential siting region and ensures early involvement of the affected Cantons, communities and authorities from neighbouring countries, as well as the population of the region and other interested organisations. At the end of 2004, the Federal Office of Energy (FOE) was requested by the Federal Council to prepare such a plan, which consists of two parts: a conceptual part which defines the “rules of the game” for the procedures and criteria that apply to site selection, and a second part which will define the implementation procedures.

References: [www.nagra.ch](http://www.nagra.ch); [www.mont-terri.ch](http://www.mont-terri.ch); [www.grimsel.com](http://www.grimsel.com).

### Swiss Nuclear Power Programme

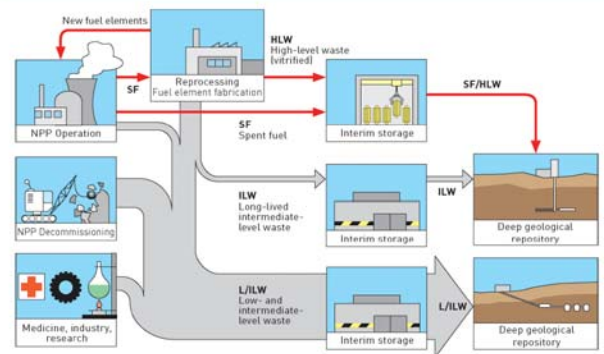


... in total 156 years of safe, reliable CO<sub>2</sub> free electricity production

ANS International Committee Meeting, Albuquerque November 12, 2006

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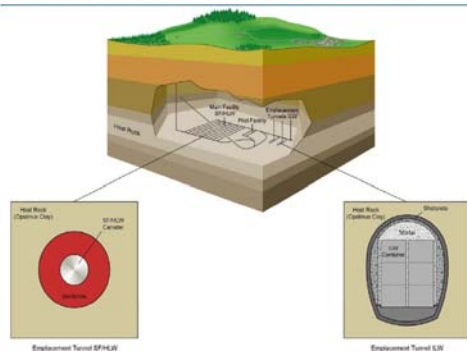
### Swiss Waste Management Concept



ANS International Committee Meeting, Albuquerque November 12, 2006

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### SF/HLW/ILW - Repository in Opalinus Clay



ANS International Committee Meeting, Albuquerque November 12, 2006

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### Review of Project Opalinus Clay (Entsorgungsnachweis)



ANS International Committee Meeting, Albuquerque November 12, 2006

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## Young-Generation Corner

### IYNC2008!

IYNC2008, the Fifth International Youth Nuclear Congress, will be held September 20-26, 2008, in Interlaken, Switzerland, immediately following PHYSOR-2008.

### 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>
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.dyndns.org">http://insc.dyndns.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 give us information about your upcoming conferences, for inclusion in this space)

### 2007

- 13-18 May: ICAPP 2007, International Congress on Advances in Nuclear Power Plants, Nice, France – <http://www.sfen.fr/icapp2007>
- 28 May - 1 June: International Conference on Nuclear Criticality Safety (ICNC 2007), St. Petersburg, Russia
- 3-6 June: 28<sup>th</sup> Annual Conference of the Canadian Nuclear Society and 31<sup>st</sup> CNS/CNA Student Conference, Saint John, New Brunswick, Canada – <http://www.cns-snc.ca>
- 3-8 June: 13<sup>th</sup> International Conference on Emerging Nuclear Energy Systems (ICENES 2007), Istanbul, Turkey – <http://www.icenes2007.org>
- 24-28 June: ANS Annual Meeting, Boston, MA – <http://www.ans.org/meetings>
- 1-5 July: International Joint Meeting Cancun 2007 of the Latin American Section of the ANS (ANS/LAS), the Sociedad Nuclear Mexicana (SNM), and the Mexican Society for Radiological Safety (SMSR), Cancun, México – <http://congreso.sociedadnuclear.org.mx/index.php>
- July 30-August 2: 8<sup>th</sup> International Technical Meeting on the Applications of Accelerator Technology (AccApp'07), Pocatello, ID – <http://www.ans.org/meetings>



- 5-8 August: Utility Working Conference, Amelia Island, FL – <http://www.ans.org/meetings>
- 12-17 August: 19<sup>th</sup> International Conference on Structural Mechanics in Reactor Technology (SMiRT-19), Toronto, ON, Canada – <http://www.engr.ncsu.edu/smirt-19>
- 15-18 August: International Conference on Engineering for Sustainable Energy in Developing Countries, Rio de Janeiro, Brazil; sponsored by the Energy Committee of the World Federation of Engineering Organizations and the Brazilian Federation of Engineering Associations; contact: [cie@clubedeengenharia.org.br](mailto:cie@clubedeengenharia.org.br)
- 19-23 August: 13<sup>th</sup> International Conference on Environmental Degradation of Materials in Nuclear Systems – Water Reactors (DEG 07), Whistler, British Columbia, Canada – <http://www.cns-snc.ca/Deg2007.html>
- 9-13 September: Global 2007: Advanced Nuclear Fuel Cycles and Systems, Boise, ID, USA – <http://nuclear.inl.gov/global07>
- 11-13 September: 6th International Conference on Control and Instrumentation in Nuclear Installations, Manchester University, United Kingdom
- 16-19 September: ANS Topical Meeting on Decommissioning, Decontamination and Reutilization (DDR) & Technology Expo, “Capturing Decommissioning Lessons Learned”, Chattanooga, TN, USA – <http://ddrd.ans.org>
- 16-20 September: ENC 2007, Brussels, Belgium; organized by ENS in co-operation with BNS, in association with ANS and with the support of Vrije Universiteit Brussel – <http://www.enc2007.org>
- 16-21 September: 8th International Conference on Tritium Science and Technology, Rochester, NY, USA – <http://meetings.lle.rochester.edu>
- 16-21 September: MTAA12: 12<sup>th</sup> International Conference on Modern Trends in Activation Analysis, Hachioji-shi, Tokyo, Japan - <http://www.mtaa12.com/>
- 24-28 September: Central and East European IRPA Regional Congress, “Regional and Global Radiation Protection Aspects”, Brasov, Romania (organized by the Romanian Society for Radiation Protection) – <http://www.ispb.ro/rsrp.htm>
- 30 September - 3 October: 2007 International LWR Fuel performance Meeting, San Francisco, CA – <http://www.ans.org/goto/fuel07>
- 30 September - 4 October: Twelfth International Meeting on Nuclear Reactor Thermal-Hydraulics (NURETH-12), Pittsburgh, PA, USA – <http://www.nureth12.org>



- 30 September – 05 October: Cyclotrons 2007, 18th International Conference on Cyclotrons and their Applications, Giardini Naxos (Russott Hotel), Catania, Italy, <http://www.lns.infn.it/Cyclotrons2007>, [cyclotrons2007@lns.infn.it](mailto:cyclotrons2007@lns.infn.it)
- 13 - 17 October: EANM'07, Annual Congress of the European Association of Nuclear Medicine, Copenhagen Congress Center, Copenhagen, Denmark, EANM Executive Secretariat, [info@eanm.org](mailto:info@eanm.org), <http://www.bellacenter.dk>
- 15-19 October: International Symposium on Nuclear Energy “SIEN’07”, “Nuclear Power – A New Challenge”, Bucharest, Romania – <http://www.aren.ro>
- 21-26 October: PATRAM International Radioactive Materials Transportation Symposium, Miami, FL, USA – <http://www.patram.org>
- 30-31 October: Advanced Safety Assessment Methods for Nuclear Reactors, Daejeon, Republic of Korea
- 11-17 November: ANS/ENS International Winter Meeting, Washington, DC, USA – <http://www.ans.org/meetings>

## 2008

- 24-28 February: Waste Management Conference, Tucson, AZ, USA
- 9-12 March: 2nd Joint Emergency Preparedness and Response & Robotics and Remote Systems Topical Meeting (12th Robotics and Remote Systems for Hazardous Environments/10th Emergency Preparedness and Response), Albuquerque, NM, USA - <http://www.ans.org/meetings>
- 30 March – 4 April: 8<sup>th</sup> International Meeting on Facilities Operations – Safeguards Interface, Portland, OR, USA – <http://www.ans.org/meetings>
- 13-18 April: ICRS-11/RPSD-2008: 11<sup>th</sup> International Conference on Radiation Shielding/15<sup>th</sup> Topical Meeting of the ANS Radiation Protection and Shielding Division, Callaway Gardens, GA, USA - <http://icrs11.me.gatech.edu/>
- Spring 2008: Nuclear Engineering, Science and Technology: Training and Education, Budapest, Hungary – [nest2008@euronuclear.org](mailto:nest2008@euronuclear.org)
- 1-4 June: 29<sup>th</sup> Annual Conference of the Canadian Nuclear Society and 32<sup>nd</sup> CNS/CNA Student Conference, Toronto, Ontario, Canada – <http://www.cns-snc.ca>
- 8-12 June: ANS Annual Meeting and ICAPP 2008, Anaheim, CA, USA – <http://www.ans.org/meetings>
- 3-6 August: Utility Working Conference, Amelia Island, FL, USA - <http://www.ans.org/meetings>
- 24-29 August: Seventh International Conference on Nuclear and Radiochemistry (NRC7), Budapest, Hungary, [nrc7@mke.org.hu](mailto:nrc7@mke.org.hu) - Chair: Lazlo Wojnarovitz, Hungarian Academy of Sciences



- 14-18 September: PHYSOR-2008, ANS Reactor Physics Topical Meeting PHYSics Of Reactors 2008, “Nuclear Power – A Sustainable Resource”, Interlaken, Switzerland; organized by the Swiss Nuclear Society and the Paul Scherrer Institute – <http://www.physor2008.ch>
- 20-26 September: IYNC-2008, International Youth Nuclear Congress 2008, Interlaken, Switzerland (hosted by the Swiss Nuclear Society) – <http://www.iync.org/>
- 13-17 October: 16PBNC, 16<sup>th</sup> Pacific Basin Nuclear Conference, Aomori, Japan; organized by the Japan Atomic Industrial Forum (JAIF) and the Atomic Energy Society of Japan (AESJ) – <http://www.pbnc2008.org>
- 19-24 October: IRPA 12, 12th International Congress of the International Radiation Protection Association, “Strengthening Radiation Protection Worldwide” – <http://www.irpa12.org.ar/>
- 9-13 November: ANS Winter Meeting, Reno, NV, USA – <http://www.ans.org/meetings>

## 2009

- 19-22 April: Advances in Nuclear Fuel Management IV, Hilton Head Island, SC, USA – <http://www.ans.org/meetings>
- 3-7 May: M&C Topical: 2009 International Conference on Advances in Mathematics, Computational Methods, and Reactor Physics, Saratoga Springs, NY, USA – <http://www.ans.org/meetings>
- 14-18 June: ANS Annual Meeting, Atlanta, GA, USA – <http://www.ans.org/meetings>
- 12-17 July: The Twelfth Quadrennial International Conference on Fracture (ICF12), Ottawa, Ontario, Canada - <http://www.icf12.com>
- 6-9 September: Global '09, Paris, France
- 8-12 November: ANS Winter Meeting and Nuclear Technology Expo, Washington, DC, USA – <http://www.ans.org/meetings>

## 2010

- 13-17 June: ANS Annual Meeting, San Diego, CA, USA – <http://www.ans.org/meetings>
- 14-18 November: ANS Winter Meeting and Nuclear Technology Expo, New Orleans, LA, USA – <http://www.ans.org/meetings>

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