

The ANS Globe

...e-news from the ANS International Committee

From the editor

The ANS Globe is the Bulletin of the American Nuclear Society's International Committee (IC). *The ANS Globe* has as its mandate the dissemination of news of international interest to International Committee members and to others.

We would like to keep *The ANS Globe* current and relevant. Please send your letters, articles, news and/or comments for consideration towards the next issue.



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From the Chair and Vice Chair

Mimi Holland Limbach, ANS International Committee Chair

Luc van den Durpel, ANS International Committee Vice Chair

Crossroads for nuclear technology



There is scope and hope for an international change in the perspectives for the value-adding use of nuclear science and technology, particularly for nuclear energy and nuclear medicine.

Various indicators favor the deployment of our nuclear expertise, i.e.:

- Nuclear energy is again increasingly recognized for its contribution as a predictable energy source without unsustainable pressure on the environment from the emission of green-house gases. New and growing economies value the strategic role of nuclear energy, and this strategic value is increasingly recognized by western countries where nuclear is being viewed part of a sustainable energy mix:
 - The recent United Nations Intergovernmental Panel on Climate Change report, “Global Warming of 1.5 degree”, pictures scenarios where nuclear energy has an undeniable role in the sustainable energy mix. Increasingly, nuclear isn’t seen as an option in an ‘either-or’-choice but as an imperative addition to sustainable energy portfolios.
 - The continued move by many Asian and several Middle Eastern and African countries to initiate the work towards new builds or to strengthen the analysis towards integrating nuclear energy in their energy mix shows the strategic value these countries give to nuclear in strengthening their macro-economic prospects.
 - In the USA and Western Europe, the situation is somewhat wobblier where there’s economic pressure and particularly political pressure respectively. Yet, signs of reconsidering nuclear energy are emerging. There’s increasing concern that politically-driven, overly optimistic renewable energy policies aren’t sustainable as such. And there is recognition that a stabilizing decarbonized energy vector as nuclear energy is required in any sustainable energy future.
- In nuclear medicine, beyond the ever-growing diagnostics application of radioisotopes and radiotheranostics are growing rapidly with important developments and market prospects. Nuclear R&D laboratories are on this development path with several large pharmaceutical companies but also with a growing set of smaller innovation-driven companies.

While markets may provide us again the necessary “air to breathe” (or, at least, to hope

...), we ourselves need to continuously adapt our offer to these new market prospects.

In that context, the pendulum of innovation has again been swinging too much:

- While industry has continuously been improving the safe, operational and waste management performance of LWR/PHWR NPPs, (inter)government-driven initiatives as Generation-IV (among others) were launched some two decades ago in light of the then expected ‘renaissance’ of nuclear energy that anticipated introducing new more sustainable nuclear energy options by around 2030.
- More recently, innovation in nuclear energy was largely represented by a multitude of smaller companies and initiatives largely based on advanced and sometimes even very advanced nuclear technology options. Only some of these initiatives have the necessary market traction with increasing funding and may expect market introduction by the mid to late 2020s. Other initiatives will remain in the conceptual phase for way longer.

We, as the nuclear community in learning societies worldwide, have a very important role to help manage this pendulum and to ensure that the pendulum is pushing all actors towards the most sustainable development and deployment path for nuclear science and technology. We recently saw already that some were riding the pendulum way too far leading to, unfortunately, failure.

As such, the American Nuclear Society and its partner learning societies worldwide need to provide this framework where expertise can be shared not only on the science and technology as such but also on ‘how to manage the pendulum’ in different and time-changing market conditions.

The International Committee (IC) is and will be bridging even more between these learning societies by providing the setting where we can share our best but also our more difficult experiences in moving forward with nuclear science & technology.

The IC has therefore recently been helping the ANS in various ways, e.g.:

- Active involvement in organizing regional conferences with the Pacific Basin Nuclear Conference (PBNC2018) as a prime example.
- Revisiting and reactivating collaboration memoranda between learning societies, as recently the renewed ANS - ENS (European Nuclear Society) agreement with others in the pipeline.
- Supporting the continued recognition of bridging -initiatives as the ‘Tour de France’ by the French Section of the ANS (SFANS, which has held already its 10th edition of this renowned tour of French nuclear installations for US professor). The Tour de France is being recognized for this by an ANS Presidential Citation Award during the 2018 Winter meeting.

We seek to continuously advance these efforts with more active interactions between the IC-members during the year. We expect to co-organize IC-meetings and IC-support to international initiatives ... ‘managing the pendulum’ towards nuclear’s future.

All the best –

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.

Non-US ANS Board Members

Non-US Board Candidates in 2019 ANS National Election

The IC has nominated two members to run for the Non-US Board position in the 2019 ANS election. The nominees are from Mexico and the Latin America region:

- Dr. Gustavo Alonso, México
- Dr. Olga Simbalista, Brazil.

Good luck to both nominees!

News from Sister Societies and International News

- **Canada, Canadian Nuclear Society (CNS) (<http://www.cns-snc.ca>)**

The 38th Annual Conference of the CNS, together with the 42nd CNS/CNA Student Conference, was held in Saskatoon, Saskatchewan, 2018 June 3-6. This conference was quite successful. It featured an embedded component in Small Modular Reactors, a topic which elicits much enthusiasm these days.

The CNS now looks forward to the many events it will be holding in the next 12 months or so

- 8th International Conference on Simulation Methods in Nuclear Science and Engineering (8ICSMNSE). Ottawa, Ontario, Canada, 2018 October 9-11 (<https://www.cns-snc.ca/events/8icsmnse/>)
- Nuclear-101 Course, Ottawa, Ontario, Canada, 2018 October 10-11 (<https://www.cns-snc.ca/events/nuclear-101-2018/>)
- 1st International Conference on Generation IV and Small Reactors (G4SR-1), Ottawa, Ontario, Canada, 2018 November 7-8 (<http://www.g4sr.org/>)
- 9th International Symposium on Supercritical-Water-Cooled Reactors (ISSCWR-9), Vancouver, British Columbia, Canada (<https://www.cns-snc.ca/events/isscwr9/>)

- Chemistry, Materials, and Fitnessfor Service Conference, Toronto area, Ontario, Canada, 2019 May (www.cns-snc.ca)
- 39th Annual Conference of the CNS and 43rd CNS/CNA Conference, Ottawa, Ontario, Canada, 2019 June 23-26 (www.cns-snc.ca)
- 14th International Conference on CANDU Fuel, Mississauga, Ontario, Canada, 2019 July 21-24 (www.cns-snc.ca)
- 4th Canadian Nuclear Waste Management, Decommissioning and Environmental Restoration Conference (NWMDER-2019), Ottawa, Ontario, Canada, 2019 Sept. 8-11 (www.cns-snc.ca)
- Fire Safety & Emergency Preparedness for the Nuclear Industry 2019 (FSEP-2019), Ottawa, Ontario, Canada, 2019 October 27-30 (www.cns-snc.ca)



- **France**

Dominique Grenêche, of FSANS (French Section of the ANS), sent this very informative article on “Tour de France 2018”.

Tour of Nuclear Facilities in France for US Faculty: Tenth Edition, 2018
An example of the enhancement of cooperation between
the U.S. academic world and the French nuclear R&D and industry sectors

Since 1996, every two or three years, the French Local Section of the American Nuclear Society (SFANS), which is also a section of the SFEN (the French Nuclear Society for nuclear energy), has hosted a tour of various unique facilities within the extensive French nuclear industry. This trip is now well-known as “**The Tour de France**” (TdF), with reference to the famous international cycling competition which takes place every year throughout the country. In total, already more than a hundred participants from universities in 26 different States have been able to participate in these trips whose fame is now widely established in academia in the United States and which constitute the “flagship” of the SFANS activities. This event is partially funded by the two French industrial nuclear actors in the nuclear field, ORANO and EDF. The CEA (French Atomic Energy Commission) and ANDRA (National Agency for Nuclear Waste Management) also make a contribution to this tour through invitation to different meals.

This year was a special one because it was a sort of anniversary for this event: this TdF celebrated its **tenth edition!**

The objectives are in line with the main goals of the SFANS, being to promote and develop exchanges about the status and knowledge of nuclear science and technology development and achievements in France and in USA in the different technical fields (operation and construction of reactors, fuel cycle, waste management, R&D...). The technical program and exchanges and discussions focused this year on the back end of the fuel cycle, including the review of issues related to waste management and the option of **vitrification** of high level long-lived waste adopted in France. Within the framework thus defined, the main objectives of this event are to:

- Provide to US Professors of nuclear engineering the relevant information on French nuclear programs that they could deliver and dispatch for the benefit of their students in US universities.
- Enhance the mutual links between SFANS and ANS through the participation of US professors of nuclear engineering, most of them being active members of the ANS.
- Organize and exchange views between respective academic programs and engineers training courses in nuclear energy in France and USA.

Fourteen faculty members from eleven universities were hosted from July 1 to 7, along with their guests (for eight of them, for whom a special tourist program was prepared).

The week-long tour started with a Sunday noon welcome reception and dinner in a hotel in Paris. The meeting was mainly devoted to presenting the detailed program of the tour and to providing a short insight on nuclear energy in France, starting with its historical aspects.

The Monday morning started a rigorous series of daily travels and tours of major French nuclear infrastructure industries, including, in order by day (web sites of all facilities visited, with some videos or general documents, are provided at the end of this article):

1. A visit to “**EDF-LAB**”, a new R&D center of EDF, located in the Paris-Saclay area, which is the research-intensive and business cluster currently under construction south of Paris (this area brings together private and public sector actors with large research facilities and research institutes, universities, French higher education institutions (“*grandes écoles*”) and also research centers of private companies). This meeting began with a general presentation of EDF’s R&D activities, followed by a visit of the “showroom”, in particular with a demonstration of capabilities of a 3D computer detailed visualization of the inside of a PWR (which can be used for preparing maintenance operations). Then, a 2-hour meeting allowed the US professors to present their activities and to exchange and discuss with EDF R&D representatives on various R&D topics.
2. A trip to Marcoule near Avignon, where the **MELOX** facility (MOX fuel fabrication facility for plutonium recycling in light water reactors), and the **ATALANTE** main hot laboratory for research on advanced fuel cycles, were visited.
3. A trip to the center of France (north of Lyon) to visit the **Framatome St. Marcel** factory in Chalon sur Saone, which manufactures large LWR components, in particular main vessels, steam generators and pressurizers.
4. Travel to the Northwest of France to visit Bure, the deep geological high-level waste repository laboratory, in particular the surface technological space and the network of underground galleries where various experiments are conducted.
5. On the last day a detailed tour of the **La Hague** reprocessing plant, followed by a finishing tour of the Flamanville III **EPR** construction site.

6. The tour was capped the next day, Saturday 9, by a personally guided tour of the Normandy coast with visits to major WWII battle sites (in particular the “D-day” beaches) and memorials.

Each daily technical tour included detailed lectures of the industrial processes, followed by detailed tours of the facilities. Every day, participants seemed increasingly amazed by the facilities, the technology, the organizations, and the quality of the people and processes.

As valuable and informative as the tours themselves were, the participants looked forward each day to the opportunities to discuss technical issues over the finest lunches and dinners to be found in the various regions of France that were visited. In the end all came away with a very deep appreciation for the French nuclear industry, the extensive heavy industry infrastructure, the broad educational programs in place to fuel the industry, and also with a bevy of material to enhance every one of the courses each faculty member teaches.

At the end of the tour, participants were asked to make a report summarizing their reactions and comments on the organization of the trip, but especially related to their perceptions of the French nuclear industry and how this information could be valued in their respective nuclear engineering courses. All participants (100 %) wrote their reports, which constitute a collection of contributions in a document of more than 50 pages. Below is a very short overview of some of the feedback and comments about this tour:

- *I had an emotional response that was like a child visiting a toy store. It is difficult to describe it in a technical way, but I think that most engineers and scientists simply enjoy experiencing engineering and science in such a real setting. Being able to witness things first hand gives me an appreciation of how things work that I hope I will be able to pass on to my students.*
- *I thoroughly enjoyed the “Tour of French Nuclear Facilities”, it was very useful for the US professors to understand that there are other alternatives to support a country’s nuclear program (e.g., reprocessing/recycling vs. storage/disposal). The organizers (of this tour) had done a marvellous job in planning, preparing, organizing, and leading the tours for us.*
- *This is an excellent program that is well conceived and executed. I learned a lot about the French nuclear enterprise and came to appreciate it even more. I will recommend it to my colleagues.*
- *This tour is really tuned to perfection. Each facility treated us with kindness, respect and devoted attention.*
- *It was absolutely the best professional trip I have experienced in my professional career.*
- *I can’t impress in words how well coordinated the entire trip was in all elements. Logistically, transportation, food, and hotel stay are the obvious elements that comprise organizational components of a trip. The trip and all elements were flawless.*

➤ *The organization and logistics were fantastic! Everything was perfect.*

In conclusion, the objectives of this tour were clearly met and even exceeded in some areas. This long-prepared event fits perfectly with the mission of the SFANS, which aims to promote and develop Franco-American exchanges in the field of nuclear and achievements in general (operations and construction of reactors, fuel cycle, R & D).



**A group photograph in front of the reception building
of the PWR large component factory in Chalon St. Marcel – July 4, 2018**
Web Sites of the Facilities:

EDF LAB (Monday June 30) : https://www.edf.fr/sites/default/files/contrib/groupe-edf/espaces-dedies/espace-medias/dp/dp_edf-lab_paris_saclay.pdf

Melox (Tuesday morning July 3) : <http://www.areva.com/EN/operations-1095/melox-operations-production-of-mox-fuel-assemblies.html> and http://insaf-net.org/mox_wg/AREVA.pdf

Atalante (Tuesday afternoon July 3) : <http://library.sinap.ac.cn/db/yuanjian201004/%E5%85%A8%E6%96%87/40034716.pdf>

Chalon Saint Marcel (Wednesday July 4) : <https://www.dailymotion.com/video/x32csc4>

ANDRA – Bure (Thursday July 5) : <http://www.andra.fr/download/andra-international->

[en/document/editions/182.pdf](http://www.iaea.org/INPRO/2nd_Dialogue_Forum/AIEA_INPRO_meeting-Multilateral_aspects_of_reprocessing_and_recycling-D_GRENECHE.pdf)

La Hague (Friday July 6) :

[https://www.iaea.org/INPRO/2nd_Dialogue_Forum/AIEA_INPRO_meeting-Multilateral_aspects_of_reprocessing_and_recycling-D GRENECHE.pdf](https://www.iaea.org/INPRO/2nd_Dialogue_Forum/AIEA_INPRO_meeting-Multilateral_aspects_of_reprocessing_and_recycling-D_GRENECHE.pdf)

Flamanville EPR nuclear reactor (Friday July 6) :

http://www.irsn.fr/EN/newsroom/News/Pages/20070411_Flamanville_3_EPR_reactor.aspx

- **India**

R.K. Singh, Secretary of the Indian Nuclear Society, contributed the following news item:

Renowned scientist **Kamlesh Nilkanth Vyas** was appointed Secretary of the Department of Atomic Energy and Chairman of the Atomic Energy Commission.

Vyas was the Director of the Bhabha Atomic Research Centre (BARC).

- **International Youth Nuclear Congress (IYNC)**

The IYNC: A Global Network of Young Nuclear Leaders

By ***Luca Capriotti, IYNC President, and Lubomir Mitev, IYNC Communications Officer***

Nuclear science and technology is a global industry which employs millions of people with the shared belief that humankind should harness and develop the peaceful uses of atomic energy and applications of radioactivity for the improvement of our lives and the environment. As a result of a number of events and the successes of the anti-nuclear movement in the 1980s and 90s, many young people lost interest in nuclear technology, leading to a shortage of qualified atomic scientists and engineers.

A new generation of nuclear leaders did emerge. Around the world, the economic and social benefits of the atom are now widely recognized as a necessary part of the solution to tackling existing and emerging problems, from battling cancer to producing electricity without polluting the atmosphere. However, a gap clearly exists between the senior experts who are nearing retirement and the new and emerging generation of young professionals looking to develop a career in the nuclear industry.

The International Youth Nuclear Congress (IYNC) was formed with the purpose of creating a bridge between the senior and young generation, and across international borders. Looking to foster, encourage and promote the peaceful uses of nuclear technology and further develop the nuclear sector, the IYNC attracts young leaders from around the world and brings them in direct contact with their peers, as well as senior executives in the industry.

The idea was first developed in 1997 when a group of young scientists from the United

States met with their counterparts from Russia. Seeing that both groups had an interest in knowledge transfer, the first International Youth Nuclear Congress was held in Bratislava, Slovakia, in 2000. A major success, it was followed by Congresses in South Korea in 2002, Canada in 2004 and continued to be held in locations around the world every two years.

Over time, the IYNC grew from a bi-annual event to a non-profit organization with a much larger purpose. The IYNC network now comprises members from over 50 countries across six continents. Governed by a Board of Directors consisting of National Representatives from each member state, as well as 20 Members-at-Large and eight Officers, the network conducts numerous activities to provide a platform and enabling environment to open up future opportunities for young people around the world. As per our by-laws, the Board is re-constituted at every Congress, and it elects the Officers, including the President for a two-year term.

Our most recent success came in March 2018 when the Congress was held in Bariloche, Argentina – a scenic mountain town with a rich history in nuclear technology and home to young and senior experts in the industry. This edition of the Congress was special as the IYNC teamed up with Women in Nuclear, a global organization looking to promote the role of women in the nuclear industry. The event attracted over 400 participants who, over the course of five days, discussed future opportunities in the industry and debated on the best way to address existing challenges.

The IYNCWIN18 Congress in Bariloche also saw the launch of a new initiative – a mentor program. It focused on one of the core missions of the IYNC: ensuring transfer of knowledge between generations of nuclear professionals. We were able to engage 20 senior professionals and industry leaders who were generous in offering their time to conduct one-on-one, targeted career conversations with over 70 young professionals. A number of the young participants were delighted to speak to some amazing experts including CEOs, General Managers, Members of Parliament and the President of Women in Nuclear Global.

On the last day of the Congress in Bariloche, we also witnessed the closing of the first edition of the Innovation for Nuclear (I4N) Competition. As the first IYNC-sponsored international contest on innovation in nuclear technology, its purpose is to promote the development of new and innovative nuclear technologies, applications, or systems that will contribute to the United Nations Sustainable Development Goals. It also acts as a platform giving visibility to the ideas of young innovators. For the final round, three teams were evaluated by an international committee of experts in the nuclear field.

The winning team came from France with their prototype “SyMoN” (*Système Modulaire de Nettoyage* meaning Modular Cleaning System), an autonomous robot that executes a contamination scan and vacuums dust while moving around a room in an industrial nuclear site. For operators, using a fleet of SyMoN enables limiting of personnel working in high-risk radiation areas following the ALARA principle and the optimization of logistics of cleaning activities.

We are now looking forward to carrying these successes into the future by holding another mentor program and launching the second edition of the I4N contest. Working together with our global team of Officers, as well as the national representatives who sit on the Board of Directors, our current priorities are to open and strengthen collaboration with new and old partners, promote all possible activities to communicate the benefits of nuclear energy, and confirm our role as a platform to facilitate the realization of global initiatives. We have a lot of work to do as we prepare for the IYNC2020 Congress which will take place in March 2020 in Sydney, Australia. Under the theme of *Diversity in Nuclear*, and hosted together with the Australian Young Generation in Nuclear, IYNC2020 will promote and encourage the diversity of people in the nuclear sector, and will showcase the diversity in the peaceful uses and applications of nuclear science and technology. It will be the next chapter of our successful journey in promoting the peaceful uses of nuclear science and technology among young professionals from around the world.

With numerous opportunities to become involved the IYNC's activities and to expand our global network of young professionals, we look forward to seeing as many representatives from the American Nuclear Society Young Members Group at the IYNC2020 Congress in Sydney. Our collective success is the sum of many individual contributions, working together as one team.

- [Japan](#)

[Kiyoshi Yamauchi](#), ANS Japan Local Section and IC member, sent the following report from Japan, which I have edited:

ANS and Atomic Energy Society of Japan (AESJ) established a bilateral agreement in 1999 to provide mutual co-operation, and since then AESJ is one of the so-called “sister-societies” of ANS.

We are delighted to announce that the AESJ will mark its 60th anniversary on February 14th next year.

1. Energy Policy and Activities of Ministry of Economy, Trade and Industry (METI)

The previous “Energy Basic Plan”, approved by the Cabinet on April 11, 2014, emphasized that nuclear energy would be one of the important base load power and the desirable “power best mix” in 2,030 as electric power base. METI decided, in July 2015, that nuclear should be reduced down to 20-22% from 30% before “the Great earthquake disaster” in 2011.

The revised “Energy Basic Plan”, reflecting the suggestion of the “Round Table for Studying Energy Situations” established by the Ministry of Economy, Trade and Industry (METI) , was approved by the Cabinet on July 3, 2018.

This revised “Energy Basic Plan” shows the similar direction to the previous one and emphasizes the followings;

- Renewable energy is to be the major electric power source for decarbonization

- Although dependency on the nuclear is to be reduced, development of safer reactors is to be pursued as an option for decarbonization
- Energy saving is to be thoroughly pursued

2. Status of LWRs Restart & Plant Life Extension

- (1) Applications of restart for NRA review on conformity with new safety regulation, enforced in July 2013, were started. Applications as of September 2018 are still 26 reactors at 16 sites (16 PWR, 4ABWR, 6 BWR).
- (2) Application for restart of Tokai 2 (BWR) was just approved on September 26, 2018. The total number of approved plants is 15 (12 PWRs, 2 ABWRs and 1 BWR).
- (3) PWRs, namely Ohi 4 and Genkai 4 were just restarted in April 2018 and in August 2018 respectively. Consequently, 9 plants among 14 have already been restarted.

Applicant	NPP	Type	Commercial Operation start	Application
Hokkaido	Tomari 1 Tomari 2 Tomari 3	PWR PWR PWR	1989 1991 2009	July, 2013
Kansai	Ohi 3	PWR	1991	Restarted (March 2018)
	Ohi 4	PWR	1993	Restarted (April, 2018)
	Mihama 3	PWR	1976	Approved obtained (October, 2016) Life Extension Approved, (November 2016)
	Takahama 1 Takahama 2	PWR PWR	1974 1975	Approval Obtained (June, 2016) (Life Extension Approved, June 2016)
	Takahama 3	PWR	1985	Restarted (July, 2017)
	Takahama 4	PWR	1985	Restarted (June, 2017)
Shikoku	Ikata 3	PWR	1994	Restarted* (September, 2016)
Kyushu	Sendai 1	PWR	1984	Restarted (September, 2015)
	Sendai 2	PWR	1985	Restarted (November, 2015)

	Genkai 3	PWR	1994	Restarted (March, 2018)
	Genkai 4	PWR	1997	Restarted (August, 2018)
Tokyo	Kashiwazaki-Kariwa 6 Kashiwazaki-Kariwa 7	ABWR ABWR	1996 1997	Approval Obtained (December, 2017)
Chugoku	Shimane 2	BWR	1989	Dec. 2013
Tohoku	Onagawa 2 Higashidori 1	BWR BWR	1995 2005	Dec. 2013 June 2014
Chubu	Hamaoka 3 Hamaoka 4	BWR BWR	1987 1993	June 2015 Feb. 2014
Hokuriku	Shika 2	ABWR	2006	Aug. 2014
JAPC	Tokai 2 Tsuruga 2	BWR PWR	1978 1987	Approval obtained Sept. 2018 Nov 2015
EPDC	Ohma (Full Mox)	ABWR	Not yet	Dec.2014

3. Activities of Atomic Energy Society of Japan (AESJ) (<http://www.aesj.or.jp/en/>)

Every July, we change the organization. This year, we have changed our president and some directors.

(1) Message from New President、Yasuo Komano

Giving the top priority to public safety, the purpose of AESJ's activities is to provide environmental conservation and social development by advancing science and technology on the peaceful uses of nuclear energy and radiation.

For the main activities of the current term, we will place special emphasis on the following topics:

1. Support Fukushima reconstruction and the accident-damaged reactors decommissioning, and provide the accumulated knowledge to the world
 - We provide technical/professional support for a safe and smooth progress of the accident-damaged reactors in Fukushima prefecture through the activities of "Fukushima Special Project" and "Study Committee on Decommissioning of the Fukushima Daiichi Nuclear Power Plant".
 - We are working with other academic societies to understand more about prevention/reduction so that we can provide better countermeasures.
 - We are planning to release English-translated Japanese papers and articles on the accident, and issue a special edition on the decommissioning of accident-damaged reactors.
2. Facilitate the activities for finding the uses of nuclear energy and radiation are worthwhile and promising, and nurture the young generations. By providing these activities, we promote enhancement of nuclear power safety and advancements in science and technology for the future.
 - Contributions to the restart of nuclear power plants and continuous enhancement of safety, and safe and secure decommissioning.

- Studies and recommendations on building new light-water reactors
- Contributions to the progress in FBR developments and fusion power technologies, and establishment of overall fuel cycles including final disposal of radioactive wastes
- Coexistence with recyclable energies, and recommendations from the viewpoint of global environmental issues

In addition, the following studies and recommendations will be made from the viewpoint of the uses of radiation and the development of technical experts.

- Promotion of the studies in radiation use by early restart of research reactors such as JRR-3, following the research reactors in universities and NSRR.
 - Consideration and Suggestion for current situation survey, finding problems, and solutions of nuclear fuel/RI facilities in colleges /universities throughout Japan.
 - Studies on “the way it should be” of the rational regulation criteria, including graded approach.
 - Furthermore, we work on the acquisition of overseas state-of-the-art knowledge and the fostering of human resources who can succeed in the global field.
 - Support for cooperation and exchange with overseas academic societies and international activities.
3. Promote the public understanding, improve the services for the members, and expand the membership. People who agree with nuclear power plants account for 20 to 30% since the accident occurred, which shows that the public understanding of nuclear power plants remains extremely low. To improve the situation, we will strengthen the activities for young generations and enhance the services for the members, as well as strengthening the activities to obtain the understanding of the peaceful uses of nuclear energy and radiation. For the 60th anniversary projects, we are planning to hold the Symposium in next spring, issue a special edition of the journal, carry out a special publishing activities, etc.

(2) Annual Conference

2018 Autumn Meeting was held at Okayama University, on September 5-7, 2018, where many special plenaries and sessions, such as decommissioning, nuclear power plant safety, and so on were organized and implemented successfully under cooperation with the Local Section of AESJ and a local organizing committee. More than 1,400 people attended, including many students.

The photo below left shows award winners and board member of AESJ. The photo below right, taken at the social gathering, shows the Giant Snake God (OROCHI in Japanese) for traditional dance in Okayama.



5. Activities of ANS Japan Section FY2018 (<http://aesj.or.jp/kaigai/en/index.html>)

The ANS Japan Section is managed by the International Nuclear Information Network (ININ) of the Atomic Energy Society of Japan (AESJ). The members number about 180, and among them the number of ANS national members is about 20. There are ten officers on the Executive Committee.

Major activities in FY2018 are as follows:

- Semi-annual Members General Meetings are held twice a year, in autumn and spring. The autumn meeting was held in September in Okayama, the spring meeting will be held in March in Ibaraki.
- Executive Committee Meetings are held five times a year. Three meetings were held in April, June and September.
- Workshops by the invited speakers are held four times a year. Two workshops were successfully held in this FY as follows:
 - 1) “Major IAEA activity in the field of Nuclear Power” by Mr. Kastumi Yamada, ex-Officer of Division of Nuclear Power, Department of Nuclear Energy, IAEA, on June 18, 2018
 - 2) “Nuclear Policy in Poland” by Dr. Kazuhiko Kunitomi, Deputy Director General, Sector of Fast Reactor and Advanced Reactor Research and Development, JAEA, on September 6, 2018,

Planning of remaining two workshops is ongoing. Also, we have other means of communicating with section members: e- mail, Web and annual Newsletter.

- **OECD Nuclear Energy Agency (<http://www.nea.fr>)**

The following articles are gleaned from OECD NEA monthly reports.

Nuclear Innovation: Clean Energy Future (NICE Future)



Canada, Japan and the United States launched the Nuclear Innovation: Clean Energy Future (NICE Future) initiative at a side event at the ninth Clean Energy Ministerial (CEM) on 24 May 2018 in Copenhagen, Denmark. The NICE Future initiative aims to highlight the role of nuclear energy as a low-carbon electricity source within the innovative, integrated and advanced energy systems of the future. It has already been joined by Argentina, Poland, Romania, Russia, the United Arab Emirates and the United Kingdom. At the launch event opening remarks were provided by the United States Department of Energy Deputy Secretary Dan Brouillette, Canadian Parliamentary Secretary to the Minister of Natural Resources Kim Rudd, Japanese Parliamentary Vice-Minister of Economy, Trade and Industry Masaki Ogushi, and Poland's Secretary of State in the Ministry of Energy Michał Kurtyka. Mr Magwood, who also spoke at the event, noted that nuclear energy is one of the options in the global toolbox to stabilise the future global energy framework, and to address climate change.

High-Level IEA Meeting on the Future of Nuclear Energy

NEA Director-General Magwood and senior staff participated in a high-level meeting entitled “Nuclear Energy: Today and Tomorrow”, organised by the International Energy Agency (IEA) on 28 June 2018 in Paris, France. The event brought together high-level participants from IEA member countries, industry leaders and academia who examined the



role of nuclear energy in mature power markets, as well as its implications for energy security, the economy and the environment. “A consideration of the future of nuclear energy is complex not only because of technology and economic factors, which the NEA analyses closely on an ongoing basis, but also because of how it is reflected in global and national policy and politics,” said NEA Director-General Magwood at the meeting. During his speech, he also underlined the social and environmental factors of electricity provision, which affect individuals, economies and countries in ways that are not captured in market prices. He noted that the full costs of electricity generation must remain firmly on the radar of energy policy makers.

Bridging the Gender Gap: NEA Initiative to Encourage Girls to Pursue STEM

Following its successful debut in July 2017, the NEA International Mentoring Workshop in Science and Engineering returned to Japan for the second year. Joshikai II for Future Scientists was held on 8-9 August 2018 in Tokyo, in co-operation with the Japan Atomic Energy Agency (JAEA), in order to motivate young female students to explore science and engineering careers, and to suggest ways to overcome any barriers they may face along the way.

The workshop brought together more than 50 female students from Japanese high schools and junior high schools with highly accomplished women scientists and engineers from Japan and three other NEA member countries. During the two-day workshop, the mentors discussed with the students the lives, careers and experiences of women in STEM through panel discussions, ice-breaking dialogue sessions, hands-on activities and group discussions. This year's workshop also included a special session for parents and teachers, as family and teacher support is considered key to encouraging girls to study and work in STEM.

Encouraging Female Scientists of the Future

Building on the two previous successful events organised in Japan to encourage young female students to pursue science, technology, engineering and mathematics (STEM), the third NEA International Mentoring Workshop in Science and Engineering was held on 24 September 2018 in Avila, Spain. The event was jointly organised with Women in Nuclear (WiN) Spain and co-sponsored by the Spanish Nuclear Safety Council (CSN), the City Council of Ávila, and the Electric Power Research Institute (EPRI). The workshop featured opening remarks by Director-General Magwood, as well as a presentation on the NEA-led initiative by Yeonhee Hah, NEA Head of the Division of Radiological Protection and Human Aspects of Nuclear Safety. In his opening remarks, Director-General Magwood told participants, “We encourage you to consider careers as engineers and scientists. We need you.” The workshop brought together 50 female high-school students from Spain with twelve highly accomplished women mentors, including the NEA's Yeonhee Hah, Head of the Division of Radiological Protection and Human Aspects of Nuclear Safety; Sama Bilbao y León, Head of the Division of Nuclear Technology Development and Economics; and Olvido Guzmán, Radiological Protection Specialist. During the workshop, the mentors exchanged their experiences and shared advice and insights with the students. Discussions also addressed the difficulties faced by women professionals in many parts of the world and the steps that can be taken to support young women who aspire to work in these fields.



Editor's note: See reference to this event also in the article by the Spanish Nuclear Society below.

- **Pacific Nuclear Council**

Installation of New Officers, San Francisco, 2018 October 4

The Pacific Nuclear Council (PNC), an organization composed of nuclear energy societies and associations around the Pacific Rim, invested its officers for 2018 to 2020. **Kamal Verma**, vice president of the CANDU 6 fleet program of SNC Lavalin Nuclear, was installed as president at the 21st Pacific Basin Nuclear Conference (PBNC) in San Francisco. **Zhi Wang**, deputy secretary-general of the Chinese Nuclear Society, was invested as vice president/president-elect.

“As nuclear energy continues to expand in the Pacific Rim, the Pacific Nuclear Council can play an important role in advancing this key clean energy technology,” said Mr. Verma. “Our biennial conference along with our working groups are forums for industry professionals to establish and discuss best practices and then share them in their home countries, so together we can offer the world a safe, secure, efficient form of energy that enables countries to meet global carbon emission targets.”

As vice president of the CANDU 6 fleet program for SNC Lavalin Nuclear, Mr. Verma brings more than 35 years of nuclear industry experience in project management, design, construction, commissioning and operations technical support for CANDU nuclear power plants in Canada, China and Romania to PNC. In his current capacity, he works closely with Pacific nuclear power utilities in Canada, South Korea, China, Argentina and Taiwan, providing technical solutions to improve safety, reliability and productivity of their nuclear power plants. For the past two years, Mr. Verma has served as vice president/president-elect of PNC.

Mr. Wang is currently deputy secretary-general of the Chinese Nuclear Society (CNS), where he leads academic exchange and nuclear science popularization activities. He has ample experience in diverse fields in nuclear energy. At the Beijing Institute of Nuclear Engineering, he was involved in the development and construction process for the Qinshan Phase II nuclear power project and as a nuclear engineer at the Ling’ao nuclear power project. At the China National Nuclear Corporation (CNNC), he helped develop new nuclear power products, including CNP1000, CNP1500, ACP1000, ACP600 and ACP100, and was involved in nuclear power project management for the Tianwan, Sanmen, Fuqing and Fangjiashan plants. Recently, at CNNC, he was in charge of bilateral cooperation with American, European and African countries and overall multilateral cooperation.

- [Spain](#)



IC Member [Santiago San Antonio](#) contributed the following article on the activities of the Spanish Nuclear Society.

SPANISH NUCLEAR SOCIETY ACTIVITIES **“44TH SNE ANNUAL MEETING”**



The 44th Annual Meeting of the Spanish Nuclear Society, held last 26-28 September 2018 in Ávila, Spain, gathered nearly 650 congresspersons. The 290 papers presented at the Congress, divided into oral, poster and promotional sessions, dealing with areas such as radiological protection, waste management, nuclear safety, nuclear fuel, materials, engineering or communications, radiological protection and others, showed the state of the art of nuclear industry and research.

The exhibition congregated 33 of the principal nuclear industry companies in Spain.



The intense technical program included two plenary sessions, two monographic sessions and three workshops, of the utmost relevance and importance, focused on topics from the nuclear sector, energy sector, or of general interest in which experts of the highest level participated.

Plenary sessions addressed these issues of general scope:

- The digitalisation of the industry
- The vision of the technologists

The monographic sessions covered the following topics:

- The energy transition
- 1968-2018: 50 years... Nothing special? Evolution of the social and technological dimension of the nuclear industry

The workshop session expanded knowledge on:

- Design thinking
- Neurofeedback
- Leadership, excellence & innovation in management
-



The Meeting included activities for outreach and training of society in general, such as the Basic Course on Nuclear Fusion, taught by the SNE Commission of Nuclear Youth, which had the participation of students from the city who wished to learn more about nuclear fusion, with emphasis on the two most advanced technologies today, inertial confinement and magnetic confinement. WiN Spain organized a conference under the title “Women, Science, and Technology”. Also, for the first time in a European country, Ávila hosted the NEA mentoring workshop, organized jointly with WiN Spain. There were 50 female students participating from the institutes of Ávila, and also a Journalist Basic Course.

In order to promote STEM (Science, Technology, Engineering, and Mathematics) education among the youngest students, the Nuclear Young People and WiN commissions promoted the holding of the STEM. The STEM Program was an open and free event, targeted at students from Secondary Education Institutes (IES) during their last two years (3rd and 4th of Compulsory Secondary Education). There were 700 students participating in the program.



You can find all the relevant information about the meeting on this [web page](#).

“SPANISH NUCLEAR GENERATION UNTIL SEPTEMBER 2018”

The electricity generation share of Spanish nuclear power plants until September 2018 was 21.7%. Once again nuclear was the major source of power generation in Spain, followed by wind (19.4%), hydro (15.2%), coal (13.2%), cogeneration (11.6%), combined cycle gas (9.7%) and solar (5.5%). Since seven years, nuclear is the first in production. The 55% of the electricity production in 2017 is free of emissions.

The electricity cost has been rising in Spain during the last months, because of production with gas and coal. The government is currently studying the possibility of reducing taxes in electricity production and regulating costs.

- **[United Kingdom](#)**

We include here an article from the UK’s National Nuclear Laboratory on the OBE Honor presented to IC member Fiona Rayment in 2017.

[Congratulations to Fiona Rayment, OBE](#)

Date Published: 16/06/2017

We are delighted to announce that National Nuclear Laboratory (NNL) Director Dr. Fiona Rayment was awarded an OBE in the Queen’s Birthday Honours list, published today. The award - which, in full, makes Fiona an Officer of the Most Excellent Order of the British Empire – recognises her work in the areas of R&D, innovation and skills development across the nuclear sector.



Most excellent congratulations Fiona!

Fiona said:

“I am absolutely speechless to be awarded an OBE. This is such an honour and I am so very proud. I am fortunate to work in an industry that has given me such pleasure and with so many great people who are leading innovations in energy R&D. I see this honour as a reflection of the tremendous support which has always been given to me, both by my family and by the wonderful people I have had the pleasure to work with throughout my career.”

NNL’s Chief Executive Officer, Paul Howarth, added:

“It’s hard to think of anyone who deserves to be recognised in this way more than Fiona. I’ve worked closely with her for many years and I’ve enjoyed seeing her career develop over that time, as she’s taken on a range of important responsibilities at the national and international level. All of which has - rightly - raised her profile across the sector. And whatever the role - if Fiona is involved, you know she’ll do a great job and the end result will be very impressive. She’s also one of those people whose door is genuinely always open to anyone wanting to raise something with her. I’m absolutely delighted to see her awarded an OBE and I congratulate her on behalf of all of her colleagues at NNL.”

Fiona has over twenty five years nuclear industry experience, working primarily within technology, operations and strategic planning roles across a number of different nuclear sites both in the UK and internationally. In addition to her NNL role, Fiona also chairs the Nuclear Skills Strategy Group and is a member of the Fusion Advisory Board, the Office

of Nuclear Regulation's Advisory Board and the Nuclear Institute's Board of Trustees. She also chairs the Nuclear Institute's Events Committee.

Fiona is both a chartered Chemist and a chartered Engineer, with a BSc and a PhD in Chemistry from the University of Strathclyde. She is a Fellow of both the Royal Society of Chemistry and the Nuclear Institute, and she has an MBA from Manchester Business School.

- **United States**

Mimi Limbach, IC Chair, Immediate Past President of the Pacific Nuclear Council and Co-Chair of PBNC2018, sent the following article and accompanying photos on this major international conference, organized by the ANS on behalf of the PNC:

21st Pacific Basin Nuclear Conference Hosts 300+ Nuclear Science Professionals

Officials from the USA, Canada, China, the Republic of Korea, Japan and Australia welcomed more than 300 nuclear energy and nuclear science professionals attending the 21st Pacific Basin Nuclear Conference. The conference, which was hosted by the American Nuclear Society (ANS) and sponsored by the Pacific Nuclear Council (PNC), took place in San Francisco, California, USA, from September 30 to October 1 at the Hyatt Regency Hotel.

Focused on sustaining and advancing nuclear energy, plenary sessions featured stimulating discussions on with top executives on government policies, regulatory initiatives, advanced technologies and what it takes to sustain the existing fleets throughout the Pacific Basin. In a session on communications, the PNC revealed the results of its biennial survey of nuclear energy communicators in the Pacific Rim. Other highlights included the Millennial Caucus moderated by U.S. Department of Energy executive Suzanne Jaworowski, an interesting tour of the University of California – Berkeley's Nuclear Engineering Labs, and a gala dinner featuring the USA's musical heritage – great rock 'n roll music performed by the Dick Bright Orchestra.

ANS President John Kelly welcomed conference participants with the remarks that are excerpted below:

“Prior to taking office as ANS President, I retired from the U.S. Department of Energy. There, I was the Chief Technology Officer in the Office of Nuclear Energy, where I focused on the research and development of SMR's, Light Water reactors and Generation IV reactors. These technologies are the future of nuclear energy in our world, and I am proud to be here this week to discuss how we, as an international community, can advance these technologies in the Pacific region and worldwide.

In addition to working on the strategic direction of nuclear energy in the U.S., I chaired the Generation IV International Forum where I worked with many international leaders and professionals in the nuclear community who realize the importance of nuclear in our worldwide energy mix.

Although there are challenges that exist in sustaining the world's nuclear reactor fleet and developing advanced technologies, the growth and work being done in China, UK, India, Viet Nam, Turkey, Japan, Korea and the UAE with the help of Korea, is very inspiring. As nuclear energy's significance in the Pacific Basin grows, so does its importance. This growth enables nuclear professionals in many Pacific Rim nations to share information and best practices as they get to know each other better on a personal basis.

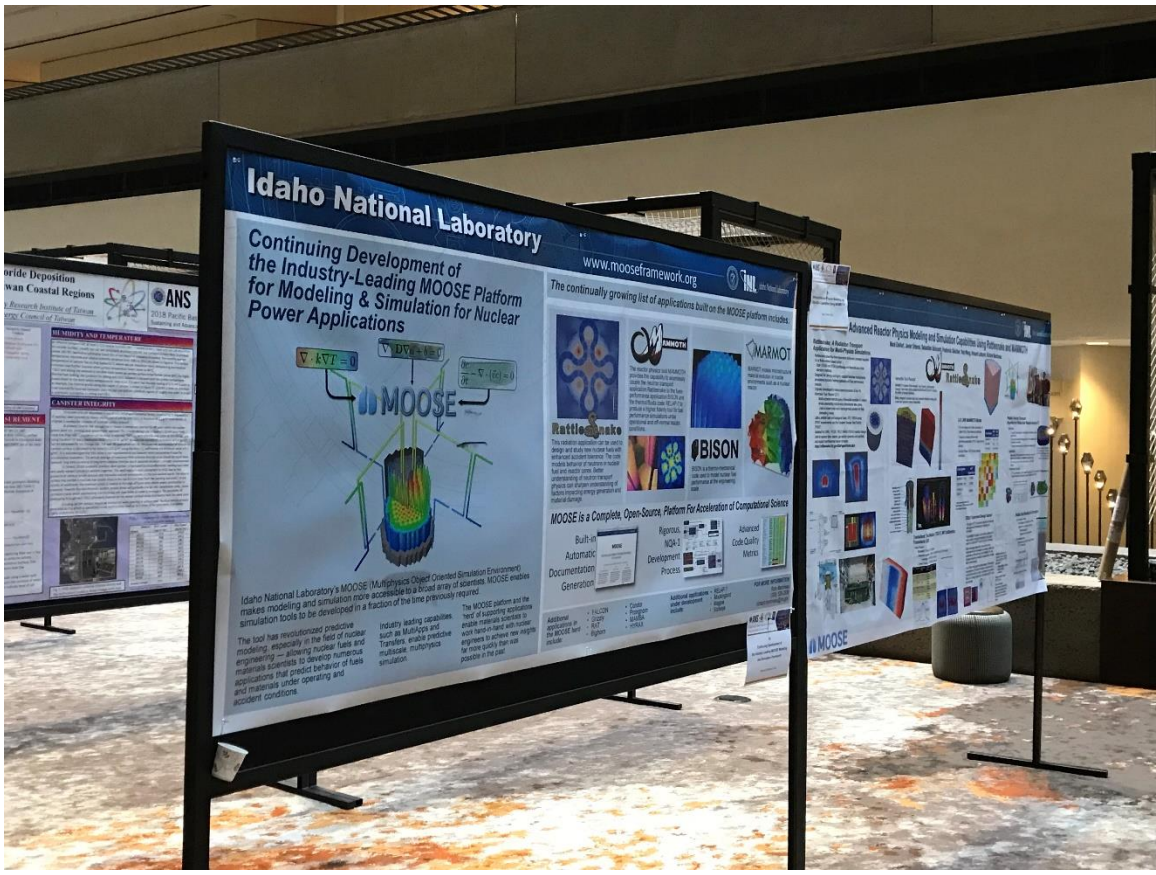
With that, I welcome you all to the meeting where the theme, "Sustaining and Advancing Nuclear Energy" guides us all to have a global discussion on how we, as a community, can advance nuclear power technologies and how these need to be developed and tested."

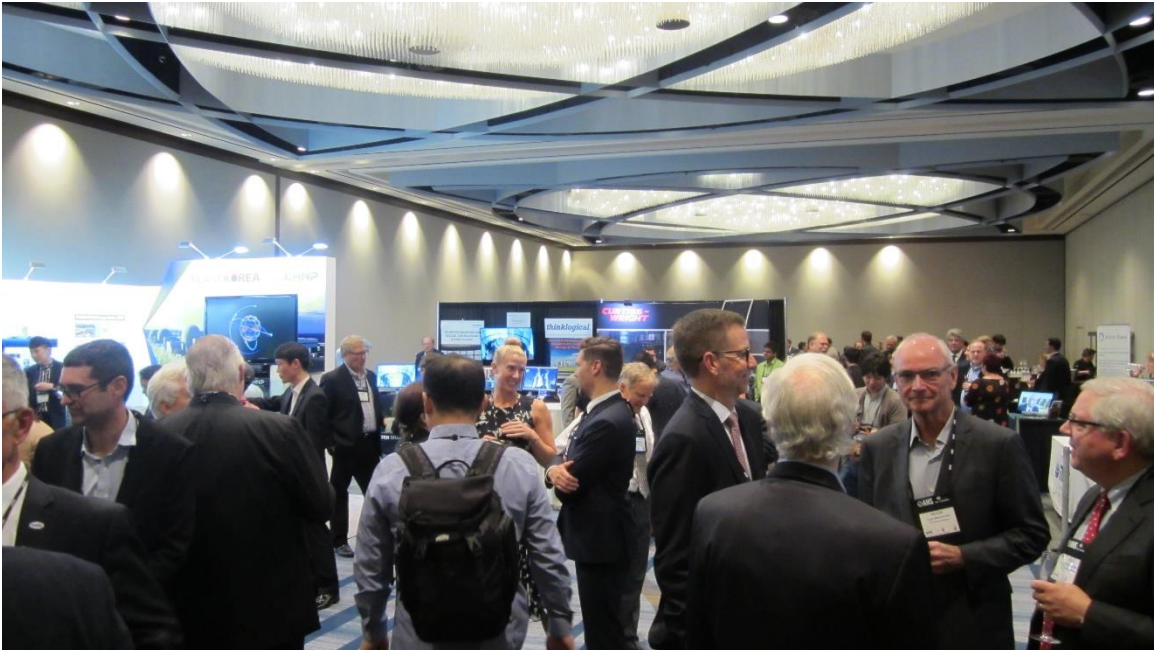
Some photos from PBNC2018. You'll be able to see many more on the PNC website.











Presentation at Previous IC Meeting: **Fiona Rayment on Diversity**

At the IC 2018 June meeting of the IC, Member [Dr. Fiona Rayment](#) made a presentation titled “Diversity Builds Better Business”. The presentation is attached here in [Appendix A](#).

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.

Society	Website or E-Mail Address
Asociación Argentina de Tecnología Nuclear	<u>www.aatn.org.ar</u>
Associação Brasileira de Energia Nuclear	<u>www.aben.com.br</u>
Association des Ingénieurs en génie atomique du Maroc	-
Atomic Energy Society of Japan	<u>wwwsoc.nii.ac.jp/aesj/index-e.html</u>
Australian Nuclear Association	<u>www.nuclearaustralia.org.au</u>
Bangladesh Nuclear Society	-
Bulgarian Nuclear Society	<u>www.bgns.bg</u>
Canadian Nuclear Society	<u>www.cns-snc.ca</u>
Chinese Nuclear Society	<u>www.ns.org.cn</u>
Croatian Nuclear Society	<u>www.nuklearno-drustvo.hr/en/home.html</u>
Czech Nuclear Society	<u>www.csvts.cz/cns</u>
European Nuclear Society	<u>www.euronuclear.org</u>
Hungarian Nuclear Society	<u>www.kfki.hu/~hnucsoc/hns.htm</u>
Indian Nuclear Society	<u>www.indian-nuclear-society.org.in</u>
Israel Nuclear Society	<u>meins@tx.technion.ac.il</u>
Korean Nuclear Society	<u>www.nuclear.or.kr/e_introduce.php</u>
Lithuanian Energy Institute	<u>www.lei.lt</u>
Malaysian Nuclear Society	<u>www.nuklearmalaysia.org/index.php?id=18mnu=1</u>
Nuclear Energy Society of Kazakhstan	<u>www.nuclear.kz</u>
Nuclear Energy Society of Russia	<u>ns@kia.ru</u>
Nuclear Energy Society of Slovenia	<u>www.djs.si</u>
Nuclear Energy Society of Thailand	<u>www.nst.or.th</u>
OECD/Nuclear Energy Agency	<u>www.nea.fr</u>
Polish Nuclear Society	<u>www.ptn.nuclear.pl</u>
Romanian Nuclear Energy Association	<u>www.aren.ro</u>
Romanian Society for Radiological Protection	<u>www.srrp.ro</u>

Slovak Nuclear Society	www.snus.sk
Sociedad Nuclear Española (SNE)	www.sne.es
Sociedad Nuclear Mexicana	www.sociedadnuclear.org.mx
Ukrainian Nuclear Society	www.ukrns.odessa.net
United Kingdom Nuclear Institute	www.nuclearinst.com/ibis/Nuclear%20Institute/Home
Women in Nuclear – Global	www.win-global.org
Affiliated National Societies	Website or E-Mail Address
Belgian Nuclear Society	www.bns-org.be
Associated Nuclear Organizations	Website or E-Mail Address
International Nuclear Societies Council	http://insc.ans.org
Pacific Nuclear Council	http://www.pacificnuclearcouncil.org
Non-U.S. Local Sections	Website or E-Mail Address
Austrian Section	
French Section	http://local.ans.org/france/
India Section	http://local.ans.org/india/
Italian Section	
Japanese Section	
Latin American Section	www.las-ans.org.br
Korean Section	
Swiss Section	
Taiwan Section	u805301@taipower.com.tw

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.)

Legend:

☀ ANS Event

□ Non-ANS event co-sponsored by ANS

o For all other conferences, ANS is NOT a sponsor, nor are these conferences endorsed by ANS.





2019

- 5-7 February: Conference on Nuclear Training and Education (CONTE-19), St. Augustine, FL, USA (<http://conte.ans.org>) ☀
- 9-14 February: 11th Conference on Nuclear Plant Instrumentation, Control and Human Machine Interface Technologies (NPIC-HMIT 2019), Orlando, FL, USA (<http://npic->




hmit.ans.org)





- 25-27 February: Nuclear and Emerging Technologies for Space (NETS) 2019, Richland, WA, USA (<http://anstd.ans.org/nets-2019/>) 
- 10-14 March: 9th International Symposium on Supercritical-Water-Cooled Reactors (ISSCWR-9), Vancouver, British Columbia, Canada, 2019 March 10-14 (<https://www.cns-snc.ca/events/isscwr9/>)
- 14-18 April: International High-Level Radioactive Waste Management 2019 (IHLRWM 2019), Knoxville, TN, USA (<http://ihlrwm.ans.org>) 
- 22-26 April: 12th International Conference on Tritium Science & Technology (TRITIUM 2019), Busan, South Korea
- 28 April- 3 May: International Topical Meeting on Probabilistic Safety Assessment and Analysis (PSA 2019), Charleston, SC (<http://psa.ans.org/2019/>)
- 12-15 May: 2019 International Congress on Advances in Nuclear Power Plants (ICAPP '19), Juan les Pins (French Riviera)
- 15-18 May: Canadian Nuclear Society Conference on Materials, Chemistry, and Fitness for Service, Markham, Ontario, Canada (www.cns-snc.ca)
- 27-31 May: ICDA-3 - 3rd International Conference on Dosimetry and Applications, Lisbon, Portugal
- 9-13 June: ANS Annual Meeting, Minneapolis, MN, USA – <http://www.ans.org/meetings> 
- 23-26 June: 39th Annual Conference of the Canadian Nuclear Society and 43rd CNS/CNA Conference, Ottawa, Ontario, Canada (www.cns-snc.ca)
- 21-24 July: 14th International Conference on CANDU Fuel, Mississauga, Ontario, Canada, 2019 July 21-24 (www.cns-snc.ca) 
- 18-22 August: 18th International Topical Meeting on Reactor Thermal Hydraulics, Portland, OR, USA (www.ans.org) 
- 18-22 August: 19th International Conference on Environmental Degradation of Materials in Nuclear Power Systems - Water Reactors, Boston, MA, USA (<http://envdeg.ans.org/>) 

- 25-29 August: Topical Meeting on Mathematics and Computation, Portland, OR, USA (www.ans.org) 
- 8-11 September: 4th Canadian Nuclear Waste Management, Decommissioning and Environmental Restoration Conference (NWMDER-2019), Ottawa, Ontario, Canada (www.cns-snc.ca)
- 22-27 September: Global/TopFuel 2019, Seattle, WA, USA (<http://globaltopfuel.ans.org/>) 
- 6-9 October: 19th International Conference on Emerging Nuclear Energy Systems (ICENES2019), Bali, Indonesia
- 6-11 October: Materials in Nuclear Energy Systems (MiNES), Baltimore, MD, USA (<http://mines.ans.org/>) 
- 27-30 October: Fire Safety & Emergency Preparedness for the Nuclear Industry 2019 (FSEP-2019), Ottawa, Ontario, Canada (www.cns-snc.ca)
- 17-21 November: ANS Winter Meeting, Washington, DC, USA (www.ans.org) 

2020

- 3-7 February, 10th International Conference on Isotopes, Kuala Lumpur, Malaysia (www.10ici.org)
- 19-24 April: Technology of Fusion Energy, Charleston, SC 
- 7-11 June: ANS Annual Meeting, Phoenix, AZ, USA (www.ans.org) 
- 15-19 November: ANS Annual Meeting, Chicago, IL, USA (www.ans.org) 

2021

- 12-16 June: ANS Annual Meeting, Anaheim, CA, USA (www.ans.org) 
- 31 October- 4 November: ANS Winter Meeting, Washington, DC, USA (www.ans.org) 

2022

- 13-17 June: ANS Annual Meeting, Providence, RI, USA (www.ans.org) ☀
- 13-17 November: ANS Winter Meeting, Albuquerque, NM, USA (www.ans.org) ☀

2023

- 11-15 June: ANS Annual Meeting, Indianapolis, IN, USA (www.ans.org) ☀
- 5-9 November: ANS Winter Meeting, Washington, DC, USA (www.ans.org) ☀

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*Editor of the *ANS Globe*

Appendix A

Diversity Builds Better Business **by** **Fiona Rayment, OBE**



continued

Nuclear Skills Strategy Group

Diversity Builds Better Business

Fiona Rayment
ANS IC: June 2018

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for science industries

Nuclear Skills Strategy Group

Who and what is the NSSG?

- The Nuclear Industry Skills lead and provides 'one voice' to government
- It comprises:
 - major employers who have the plans and the expenditure to drive the major developments in the nuclear sector
 - government departments responsible for nuclear development and skills leadership
 - a representative of the trade unions in the nuclear industries
- It is accountable for developing a nuclear skills strategic plan to address the key risks to skills and resources facing the industry, as it approaches a time of unparalleled growth

Organisation
National Nuclear Laboratory
Ministry of Defence
Nuclear Decommissioning Authority
EDF Energy
NuGen
Horizon Nuclear Power
CGN
Royal Navy
BEIS
DfE
Welsh Government
NSAN Employer Advisory Board
Office for Nuclear Regulation
ECITB
TUC (Prospect)
Supported by: Cogent Skills

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Nuclear Skills Strategy Group

Diversity Builds Better Business?

Should the International Committee take a look at International Trends on Diversity and how it can shape our future in Nuclear Energy?

Does Diversity Matter for the advancement of Nuclear Energy?

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for science industries

Nuclear Skills Strategy Group

Diversity Builds Better Business

NSSG / WiN Video on Diversity

View on youtube ☺

https://www.youtube.com/watch?v=BesJjKGnl34&feature=youtu.be&_cldee=a2F0ZS5odXRjaGluc0Bjb2d1bnRza2lsbHMuY29t&recipientid=contact-864c6f83500de61180df000c29502450-16191cd688e8439aa528932b7a8bb80a&esid=3d8b786a-b131-e811-8129-000c29502450&urlid=1

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for science industries

Nuclear Skills Strategy Group

Changing the Sector's Workforce DNA

- Diversity is not just about gender but it's a key component based on being a significant proportion of the population
- Women today are working as nuclear engineers, project managers, inspectors, chemists, senior managers and so on
- Currently in the UK,
 - Fewer than 25% of these skilled nuclear workers are female
 - We target to see this increase to 40% of the workforce¹
- Diversity is correlated with both profitability and value creation².
- **We are closing the skills gap....**



1. Sustaining our Nuclear Skills 2015
2. McKinsey – Delivering Through Diversity 2018

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for science industries
<http://www.cogentskills.com/nssg/nssg-news/nssg-has-joined-forces-with-women-in-nuclear/>

Nuclear Skills Strategy Group

Diversity Builds Better Business?

Should the International Committee take a look at International Trends on Diversity and how it can shape our future in Nuclear Energy?

Does Diversity Matter for the advancement of Nuclear Energy?

Supported by **Cogent skills**
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