



ANS

2019 November

No. 32

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.



Ben Rouben

roubenb@alum.mit.edu

Acknowledgements: The editor would like to thank [Ms. Valerie Vasilievas](#) of the ANS for her invaluable help in ensuring the correctness of contact information for International Committee members and Agreement Societies, her assistance in communicating with the Agreement Societies, and general assistance in producing **The ANS Globe**.

Contents

From the Chair and Vice-Chairs	p. 2
The ANS International Committee's Web Page	p. 3
Election of Non-US ANS Board Member	p. 4
News from Sister Societies and International News:	p. 4
Canada:	p. 4
European Nuclear Society:	p. 5
France:	p. 8
IYNC:	p.15
Japan:	p. 18
OECD:	p. 22
Spain:	p. 24
USA:	p. 26
Societies with Collaboration Agreements with ANS	p. 32
Calendar of Events	p. 34
Contact ANS International Committee Members by E-mail	p. 36

From the Chair and Vice-Chairs



We have a lot of news to share. First, congratulations to ANS's new Executive Director and CEO Craig Piercy. Craig is a savvy internationalist, and we are delighted at his appointment.

We have a potential new ANS chapter in the United Arab Emirates (UAE). IC Vice Chair Gale Hauck has been working with her many contacts in Abu Dhabi, particularly the Emirates Nuclear Energy Corporation, and a petition to start a local chapter of ANS there was recently submitted to the Local Sections Committee for review. We'll have an update at the upcoming International Committee meeting.

The UAE adopted nuclear energy as its base energy source many years ago, but now an increasing list of countries, international organizations and studies of various kinds put nuclear energy back into the spotlight as, at least, a base choice for those nations that are serious about decarbonisation and energy security.

Next to a rapidly growing expansion of nuclear energy in Asia, the ever more detailed assessments of new builds in newcomer countries and the re-opening of discussions on advanced nuclear plants in traditional nuclear developed countries indicate that is increasingly considered a serious path to worldwide prosperity and sustainability overall for this planet.

Though, we also need to acknowledge that we have work to do or it may all pass by quicker than we traditionally can build new power plants on this new nuclear acceptance wave. With the internationally-developing momentum by younger population segments, e.g., School Strike for Climate, we also unfortunately spot a risk of misinformation. Even in France, a country undeniably having embraced nuclear energy in the past, and wider-spread in Europe, some 60% of the climate activists think that nuclear energy is also a source of carbon and thus not part of their 'reference' thinking ...

We do not lack initiatives. They include outreach by various nuclear organizations as

OECD-NEA and IAEA, with the latest conference on ‘Climate Change and the Role of Nuclear Power’ (October ’19), the Nuclear for Climate initiative increasingly empowered by the Nuclear for Climate Young Generation Networks, as well as industry’s World Nuclear Association with its Harmony programme, just to name a few. But we are facing a constant need to inform our fellow citizens of all ages and origins on what nuclear energy, and by extension all other nuclear science and technology applications, is bringing and can increasingly bring to society at large.

And here’s where we as International Community of the largest Nuclear Society, ANS, with worldwide spread can and should contribute by stimulating the information exchange of trustworthy and expertise-based facts and figures and best practices on different subject matters as well as on the communication of these to our fellow citizens. ANS and many other nuclear societies worldwide have taken this as objective. In an ever more interconnected world, let’s make sure that we connect better among ourselves, members of ANS, seeking to provide best information to our international members and to ANS, who in turn can pass information on through their best channels.

It is more than appropriate to thank hereby one of our outstanding members, Ben Rouben, who has for the last 15 years honchoed this international information exchange as Editor of ANS Globe. In fact, it would be better to say “his” ANS Globe as Ben has, for sure, spent more effort alone than all contributors together during these 15 years and has, kindly as ever, been pushing us not to forget this basic delivery by an International Committee, i.e., sharing information among the international ANS members. Ben informed us that he would like to pass his activity on to a new editor for the ANS Globe, and we’re looking for someone to take this on. Although we will miss his astute editorial judgements, we’re looking forward to many more years of Ben’s contributions to the International Committee and all of his ANS interests.

And we’re looking forward to connecting with you in Washington D.C.!

Mimi Holland Limbach
Chair

Luc van der Durpel
Vice-Chair

Gale Hauck
Vice-Chair

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:

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

Election of Non-US ANS Board Member

Non-US Board Candidates in 2020 ANS National Election

The IC has nominated two members to run for the Non-US Board position in the 2020 ANS election. The nominees are from the Europe/Africa region:

- **Dr. Luc Van Den Durpel, Managing Director of Nuclear-21, Belgium**
- **Mr. Fernando Naredo, Secretary General of the European Nuclear Society, Belgium**

Good luck to both nominees!

News from Sister Societies and International News

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



This past summer, the CNS held its 14th International Conference on CANDU Fuel, a well-attended international event with 10 countries represented. The CNS also recently held its very successful NWMDER-2019, the 4th CNS Conference on Nuclear Waste Management, Decommissioning and Environmental Restoration. NWMDER-2019 attracted 340 registrants, who attended a Plenary Program of six Sessions, and a very active Technical Program with more than 80 submitted papers.

The CNS now looks forward to its exciting events in 2020:

- THICKET-2020, Seminar on the Transfer of Competence, Knowledge and Experience Gained through CSNI Activities in the Field of Thermalhydraulics, Mississauga, Ontario, Canada, 2020 May 25-29 (<https://www.cns-snc.ca/events/thicket2020/>)
- The 40th Annual Conference of the CNS and 44th CNS/CNA Conference will be held in Saint John, New Brunswick, Canada, 2020 May 31-June 3 (<http://www.cns-annual-conference.org>)
- NUTHOS-13 will be held in Vancouver, British Columbia, 2020 August 23-26 (<https://www.cns-snc.ca/events/nuthos-13/>)
- G4SR-2, the 2nd International Conference on Generation IV and Small Reactors, will be held 2020 Nov. 9-12 in Toronto, Ontario, and will follow on the high success of G4SR-1, held in Ottawa (http://g4sr.org/index_v2.html)

- [European Nuclear Society \(ENS\)](#)

IC Member and Secretary General of the ENS, [**Fernando Naredo**](#), sent a link to the ENS Newsletter, from which the following items were gleaned.

[**August 23, 2019, Murmansk, Russia**](#)



The world's only floating power unit (FPU) Akademik Lomonosov set sail for its final destination of Pevek, Chukotka, in Russia's Far East, where it will provide a stable supply of clean energy.

Rosatom Director General Alexey Likhachev gave the signal for the Akademik Lomonosov to set sail and said “This is a momentous occasion for our company and for the Chukotka region. Today the Akademik Lomonosov begins its journey to Pevek, where it will guarantee clean and reliable energy supplies to people and businesses across the region. This amounts to a significant contribution to creating an Arctic future that is both sustainable and prosperous”. During the ceremony, the operating company Rosenergoatom was awarded a Russian Book of Records certificate confirming Akademik Lomonosov’s status as the world's northernmost nuclear installation. Upon completing the 4,700 km journey to Pevek, the floating nuclear power unit will become a central part of the region's power supply. There, it will operate as part of a floating nuclear power plant, replacing the outgoing capacities of the Bilibino NPP and the Chaunskaya CHPP.

The FNPP project is one of the most promising branches of small nuclear power reactors on the market today. It is especially suited to very remote areas and island states that require stable, green sources of energy. So far, significant interest in Rosatom’s FNPP technology has come from the Middle East, North Africa, and South-East Asia. Rosatom is currently working on second-generation FPUs, i.e. Optimized Floating Power Units (OFPUs), which

will be built in a series and be available for export.

The FNPP was designed to make it possible to supply electricity to hard-to-reach areas of the Russian Federation, regardless of transport infrastructure, landscape, and cost of fuel delivery. Up to 40% of the cost of fossil fuel-based electricity generation is attributed to the price of coal, oil or gas, as well as to the cost of their delivery. This figure is even higher for especially remote locations. The small-size, lightweight, and fixed-cost of the FNPP eliminate many such challenges. These small nuclear reactors can operate non-stop without the need for refuelling for three to five years, thereby considerably reducing the cost of electricity generation.

The reactors have the potential to work particularly well in regions with extended coastlines, power supply shortages, and limited access to electrical grids. The plant can be delivered to any point along a coast and connected to existing electrical grids.

Historic Milestone Reached in Research into Molten Salt Inside High Flux Reactor

At the end of this summer, ENS Corporate Member NRG reached a historic milestone by successfully concluding an irradiation test on molten nuclear fuel salts inside the High Flux Reactor in Petten. This is the first irradiation of its kind since the research carried out in the USA in the 1960s. Irradiation tests of this kind form a crucial step in the development of molten salt reactor technology. This technology is promising in terms of both safety and economy, while having the potential to avoid release of long-living radioactive waste in severe accident scenarios.



Researcher Ralph Hania of NRG comments: “Completing our work inside the reactor means we can now examine the irradiated salt more closely in the NRG labs. This means we’ll really be able to see how the salt responds to irradiation in the reactor.”

SALIENT-01 is the first irradiation experiment conducted by NRG in the molten salt reactor research programme that started in 2015. Since pioneering the field at that time, it has maintained its headstart on the international scene. And now, four years later, the concept of the thorium reactor is widely known in the energy sector as a [promising solution to energy issues in the future](#).

The molten salt program at NRG has expanded considerably since 2015, and comprises (among others) research into appropriate construction materials, processing and

purification of molten salt, and processing residual products. There are more irradiation projects in the pipeline including an irradiation, scheduled for this autumn, of which the objective is to investigate radiolysis of salts. This process may occur when nuclear fuel salts cool down to near room temperature while in a radiation field, and results in the production of gases. In addition, early in 2020 NRG will start an irradiation experiment in the High Flux Reactor to examine corrosion resistance of candidate materials (alloys) for construction of a molten salt reactor. This is a unique piece of research which will help bringing molten salt reactors closer to reality.

About NRG

NRG carries out nuclear-technological research in various fields, including the molten salt program. This research comprises (among others) trial irradiations on nuclear materials and nuclear fuels in the HFR in Petten together with accompanying post-irradiation experiments, inspection methods and high-quality simulations of behaviour displayed by nuclear components and reactors. The research is partly funded by the Ministry of Economic Affairs. In addition, the High Flux Reactor is known worldwide for its major role in the manufacture of medical isotopes, which ensure that 30,000 patients can be treated every day. NRG develops new ways of using medical isotopes for diagnosing and treating life-threatening diseases.

About the Molten Salt Reactor

The molten salt reactor was invented by American nuclear physicist Alvin Weinberg. An experimental reactor operated in the American government laboratory in Oak Ridge back in the 1960s for five years. In its recent experiment, NRG is working with the European Commission's Joint Research Centre in Karlsruhe, which has produced the salt samples and will investigate this together with NRG in Petten after irradiation. Part of this post-irradiation experiment will be carried out in connection with the new European research project SAMOSAFER, which will be coordinated by Delft University of Technology.

Netherlands Nuclear Society Co-Organised a Symposium on the Role and Prospects for Nuclear Energy in the Transition Towards a Sustainable Future

On 9 May the Netherlands Nuclear Society and the Royal Dutch Engineering Society organized a symposium on the role and prospects for nuclear energy in the transition towards a sustainable future. Like many other countries the Netherlands are on the brink of important changes with regard to its energy supply.

The debate has gained momentum after the government decision to phase out the exploitation and use of gas from reservoirs in the province of Groningen. Current plans foresee a 75% share of wind and solar in the production of electricity by 2030. Opposition against especially land-based windmills has increased, contributing to a polarization of the debate.

Ad Louter, Managing Director of Urenco and chairman of the Nuclear Nederland Association, underlined the crucial role of nuclear energy, referring to Sweden and France as countries that have already established a balanced mix of technologies, including nuclear energy, with a low CO₂ footprint. In his view popular back-up options to secure availability of low CO₂ electricity like (green) hydrogen, batteries are not realistic and expensive as well. Olof van der Gaag, director of the Dutch Association Sustainable Energy, acknowledged the need for back-up technologies, yet questioned the future role of nuclear.



He referred to reports of lacking public support for nuclear energy and the absence of a solid business case for nuclear in the Netherlands. In this respect it is worthwhile to note that the costs of replacement power, for the periods that no sufficient wind and solar power are available (could be 4 - 6 months)' are not accounted for.

Ronald Schram, director Strategic Alliances of NRG, took the opportunity to consider the benefits and contributions of nuclear research to a sustainable society from a broader perspective. Starting in the fifties with the establishment of the nuclear R&D infrastructure for research into nuclear fission for the production of electricity, other domains of our society have benefitted from advances in nuclear technology e.g. agriculture, environment and health. The significance and impact of technical advances enabled by nuclear technology for our society is sufficient proof to argue for an increase of R&D budgets following many years of worldwide decline.

- **France**

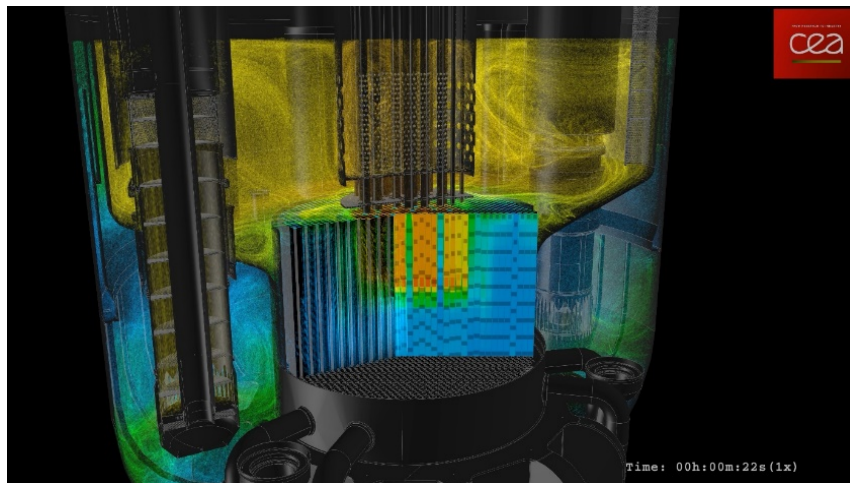
The French Section of ANS (SFANS) and Luc Van Den Durpel, ANS IC Co-Chair, submitted the following articles on the ASTRID Program, the WNA Symposium, the Tour de France 2020, the African Nuclear Business Platform, and ANS President Marilyn Kray's Visit to SFANS and also to Nuclear-21:

France – New Work Program for the Development of Fast-Neutron Reactors and Related Closed Fuel Cycle

Since 2010, the ASTRID program has been the backbone of French research on sodium-cooled fast reactors. This program has included reactor design studies, at the level of a basic design, as well as an R&D program in support of the design and licensing activities and the development of the fuel cycle capabilities. In accordance with the 2010 launch decision, this stage of the program reaches its concluding point at the end of 2019.

Earlier in 2018, France reassessed its fast-reactor industrial deployment timeline. The full closure of the fuel cycle has been reasserted as a key objective of the French long-term strategy. With regard to the updated deployment timeline, the ASTRID program is postponed: neither detailed studies nor the construction will be launched in 2020. The CEA is going to focus its FNR-related activities on a strong R&D program dedicated to further progress on the fast-reactor technology and the associated fuel cycle. The priority is still being given to the sodium-cooled fast-reactor technology, considered the most mature. The program also includes other FNR-concept assessment.

The feedback of the ASTRID program is significant in different perspectives. New design solutions for prevention and mitigation of severe accidents have been proposed. Innovations are identified in the core design, reactor components, power-conversion system, and on many other topics, including fabrication processes. The knowledge of physics has been improved in several fields (phenomenological approach) and capitalized in new models implemented in the state-of-the-art multipurpose numerical simulation tools developed by CEA and its partners. Methodologies for VVQU and safety demonstration have been formalized. A new experimental platform has been created and put into operation. It allows to perform experimental observation for the validation of models and “proof of concept” tests. A large collaboration with industrial partners and Japan has been implemented as well as methodologies for simultaneous engineering, interface data consistency and product lifecycle management.



Numerical Simulation of the SFR Primary System

The new R&D program starting in 2020 will take benefit of all this feedback. The overall objective is to increase the maturity of the SFR technology. The five-year work-plan focuses on high-stake topics:

- basic physics, modeling and simulation, especially physics of severe accident, sodium chemistry and sodium risks assessments,
- increase of fuel performances, structural material in service behavior and codification, qualification and 60 years lifetime justification,
- technological developments of some components especially monitoring and inspection techniques.

Another pillar is sketch studies, focusing on power threshold effects from a safety and economic point of view (assessment of SFR breakthrough designs with intrinsic safety). Other concepts of FRs (fast-spectrum molten-salt reactors...) will be studied in order to identify the key feasibility issues, as well as their specific features and potential performance.

In this newly oriented endeavor, partnerships and collaborations remain essential for further skill and capabilities development. CEA will play a role in the GIF and seek bilateral collaboration with leaders of the SFR development.

ANS President Marilyn Kray and IC Vice-Chair Luc Van Den Durpel at the World Nuclear Association's Symposium (London, 4-6 September '19)

The World Nuclear Association (www.world-nuclear.org), being the representative international organisation for the global nuclear industry, held its annual Symposium in London early September '19.

Marilyn and Luc were among the 500+ participants being updated on the prospects for nuclear and its role as “The Silent Giant” in a clean energy system (see [WNA Position Statement](#)), the latest Nuclear Fuel Report with global scenarios for demand and supply until 2040 (see [Nuclear Fuel Report](#)) and latest updates on programs on advanced nuclear and its regulatory path forward in some leading countries.

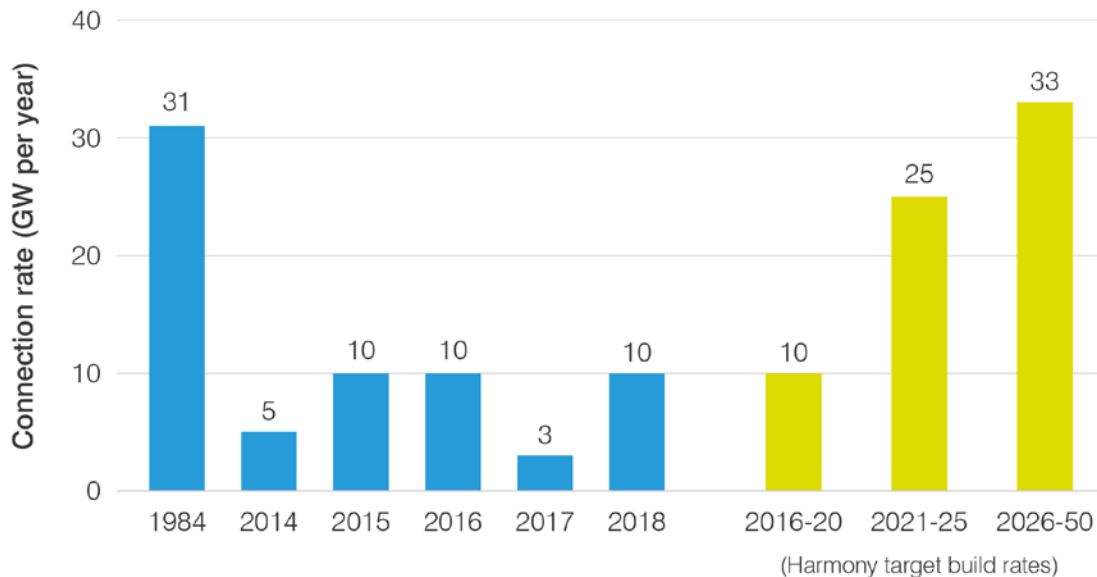


Important to note to our International Members is that the WNA's “projections for nuclear generating capacity growth have been revised upwards for the first time in eight years, following the introduction of more favourable policies in a number of countries” (dixit WNA's [press statement](#)) and “The Upper and Reference Scenarios show global nuclear power capacities growing over the period to 2040 at a faster rate than at any time since 1990, increasing mainly due to extensive reactor building programs in China, India and other countries in Asia. While projected growth in the Reference Scenario is moderate, with capacity growing to 569

GWe by 2040, in the Upper Scenario the present level of nuclear capacity is expected to almost double to 776 GWe. For the Lower Scenario, nuclear capacity essentially maintains its current level over the forecast period at 402 GWe” (see Figure below, showing the required build rate for nuclear energy’s share to become 25% before 2050).



Nuclear: lowest energy accident fatalities for OECD countries



SAVE THE DATE for the Next « Tour de France » in 2020

The French section of the ANS will organize again in 2020 (from June 28th to July 4th) the now renowned event called "Tour de France" (TdF), which is a technical trip for US university faculty corps to have them visit the main nuclear facilities around France.

This TdF was inaugurated in 1996 and the last one, which was the tenth edition, took place in July 2018. These efforts have provided more than 120 academics, from 26 different states, to see firsthand the French nuclear complex.

The objectives of this tour are to promote and develop exchanges about the status and knowledge of nuclear development and achievements in France and in the USA in the different technical fields, in particular with regard to the fuel cycle and waste management. Indeed, France holds a world-leading position in this sector, with its spent fuel reprocessing and recycling strategy. This is the reason why this tour includes the La Hague reprocessing plant and the MOX fuel fabrication plant called MELOX that allows us to reuse about 10 tons of plutonium per year and that provides almost 10 % of the French electricity. The tour also includes the underground laboratory for final disposal of high level waste which

is intended to receive in a few years the first vitrified waste containing mainly the fission products separated at the La Hague plant (*the amount of these conditioned HLW is about 120 M³ per year*). The program comprises also the visit of the PWR large components manufacturing facility in Chalon, which is one the largest plant of this type in the world. It includes also the visit the ATALANTE laboratory, which is the main French hot labs facility for research on fuel cycle. I should point out in passing that 3 of these facilities (La Hague, Chalon, and Atalante) were awarded the ANS historical landmark.

It is important to note that, in parallel to the technical tour, tourist visits are organized for accompanying persons, and the journey ends with a visit to the D-Day landing beaches for all participants.

This Tour de France is sponsored by the main French industrial actors, in particular EDF and ORANO, but also by FRAMATOME, CEA and ANDRA.

It is clear that this Tour de France is an excellent way of strengthening relationships between the USA and France in the nuclear-energy area and it provides the setting where experience and knowledge can be shared in science and technology in this field.

To conclude, it must be underlined that this TdF was awarded the ANS President's Citation during the ANS winter meeting in November 2018, which represented a strong sign of encouragement to continue to organize new TdF in the future.

African Nuclear Business Platform (October 15-16, 2019 – Nairobi, Kenya)

The [Nuclear Business Platform](#) organized the first African Nuclear Business Platform in Nairobi (Kenya) with an attendance of some 150 participants among which some 50 from non-African countries. The meeting addressed the motivations for sub-Sahel African countries to consider nuclear energy in their energy mix and the paths forward towards such nuclear energy deployment. Some of the countries, e.g. Kenya, Ghana and Zambia have already progressed quite well on the IAEA 19 Milestone approach for nuclear infrastructure development with other northern African countries as Egypt, Algeria and Morocco having embarked since long time on such a programme with increasing prospects to build nuclear power plants within the coming two decades.

Figure 1. Extract of Mr. Shaukat Abdulrazak (IAEA)'s presentation at ANBP.



An important US delegation participated in this ANBP, in particular with the presence of Dr. Rita Baranwal and colleagues of US-DOE and Department of State, US Nuclear Industry Council's President David Blee and delegates from INL and ANL as well as from industry.

ANS members were also present: Don Hoffman (former ANS President), Dr. Hussein Khalil (chairman of Honors and Awards Committee) and Luc Van Den Durpel (vice-chair International Committee).



The French ANS Section Meets the ANS President in Paris

Last October 31, SFANS (French section of ANS and SFEN with >400 members) held its annual general assembly in Paris in the presence of both Marilyn Kray, ANS President, and Valérie Faudon, SFEN President.

With the attendance of 40 members, it was the opportunity to detail the actions taken by SFANS in 2019 to accompany the French R&D plan (ASTRID postponed, PWR multi-recycling R&D program launched) and to present the 2020 action plan. It will include a conference on Gen4 reactors in January, the sponsoring of ATH 2020 which will be held in Paris late March and a tentative conference during the CFD for nuclear safety conference in November.

M. Kray handed to the SFANS bureau a gold certificate for its 50th year continuing activity. A five year memorandum of collaboration between ANS and SFEN was also signed during the meeting by both presidents. A new SFANS bureau was elected for 2020. The general assembly was followed by a presentation by Marilyn Kray on the situation of the US utilities and the US program on advanced reactors.



ANS President Marilyn Kray in Europe: Visiting ANS Organization Member Nuclear-21

During Marilyn Kray's recent visit to Europe on October 30th 2019, she also attended a meeting of Nuclear-21, the only Europe-based ANS Organization Member, headed by International Committee Vice-Chair Luc Van Den Durpel.

Nuclear-21, ANS Organization Member since 2016, is a niche expert cabinet enriching the perspectives for our clients in deciding upon nuclear science & technology and business developments. Nuclear-21 invited Marilyn, on her passage to the French Section of ANS (SFANS), to share some moments with some of the Nuclear-21 senior experts meeting in Paris.



- **IYNC**

IYNC2020: Diversity in Nuclear - Progress Update

The International Youth Nuclear Congress (IYNC) and the Australian Young Generation in Nuclear (AusYGN) will hold the IYNC2020 conference in Sydney, Australia, on 8-13 March 2020. Under the theme “Diversity in Nuclear,” the mission of the conference is to promote and enable the diversity of people engaged in the many peaceful uses of nuclear science and technology.

The IYNC2020 aims to promote and encourage diversity of people. Diversity comes in many forms, including gender, culture, educational background, professional experience and geographical location. IYNC2020 will also showcase the diversity in the peaceful uses and applications of nuclear science and technology. We will encourage interaction

between participants, particularly in the sharing of knowledge and ideas between professionals of different personal and professional backgrounds and different generations of nuclear experts.



Australia won the bid to host the IYNC2020 at the last Congress in Argentina, IYNCWIN18, “from the mountains of Bariloche to the beaches of Sydney.”

A tentative schedule has been developed and will be shared once it has been finalized. The International Convention Centre (ICC) located in Darling Harbour has now been secured as the venue, and has the capacity to accommodate over 350 participants.

Technical Program

The IYNC2020 Technical Program includes Technical Tracks, Workshops, Panel Sessions, Mentoring Sessions and Keynote/Plenary sessions. Topics cover a diverse range of topics to reflect Australia’s wide scope of nuclear uses and applications:

- Operation, Maintenance and Design Modification of Reactor Systems
- Advanced Nuclear Systems and Fusion technologies
- Neutronics and Reactor Physics
- Thermal-hydraulics
- Nuclear Materials
- Nuclear Safety, Security and Radiation Protection
- Nuclear Fuel Cycle, Waste Management and Decommissioning
- Nuclear Policy, Economics and Social Issues
- Communication, Education and Knowledge Management
- Non-Power applications: Medicine, Biology and Industry

Technical Tours

ANSTO has confirmed a number of exciting and insightful tours to offer to both domestic and international participants at a reasonable cost. This will provide attendees to get up close and personal with the best of the industry in Australia.

- A tour to the Australian National University (ANU) which will include engagement with the nuclear physics department and science communication group.
- Multiple tours of ANSTO will be offered including waste management services, the High Flux Australian Reactor (HIFAR), the Open Pool Australian Lightwater (OPAL) reactor and the Australian Synchrotron
- A tour of the Ranger Mine in the Northern Territory
- A tour of the Cyclotron Facility at Liverpool Hospital



The IYNC2020 Local ExComm team at the European Nuclear Young Generation Forum (ENYGF) last summer in Belgium.

Social events

ANSTO has secured a wide range of activities to offer participants, providing opportunities to engage with other participants and to enjoy Australian culture and sights. This includes a Welcome Dinner to be hosted at the WILD LIFE Zoo (with roaming animals), an optional Sydney Harbour Cruise, an optional surfing lesson and walking tour, networking drinks and the Farewell Dinner at Doltone House.

Sponsorship

IYNC2020 is currently pursuing a number of positive avenues of sponsorship with both domestic and international organisations. The use of a Customer Service Management platform to support numerous interactions originating from across the world to a wide range of stakeholders. Sponsorship has been successfully secured from ANSTO, INVAP, WANO, IAEA, the Minerals Council of Australia, National Energy Resources Australia, Kinetrics, CRG Energy and SMR Nuclear Technology.

Diversity

At both the local and international level, IYNC2020 has pursued a number of avenues to fund the establishment of grant programs for young professionals to attend the conference. A targeted focus on supporting young females and attendees from developing nations who may not have access to the conference otherwise.

IYNC2020 is committed to ensuring that the conference truly embodies the theme of ‘Diversity in Nuclear,’ at all levels, from the technical program to attendees to speakers. This includes application of the Gold Standard for Diversity and ensuring that both the Executive and Local Committee represent a wide range of countries and professional fields.

Speakers

Dr. Adi Patterson, CEO ANSTO
Agneta Rising, Director General World Nuclear Association
Juan Pablo Ordonez, CSO INVAP
Dr. Rabia Salihu Sa’id, Bayero University Nigeria
Najat Mokhtar, Deputy Director General IAEA
Suzanne Jaworowski, Chief of Staff & Senior Advisor U.S. Department of Energy
Kathy McCarthy, Vice-President Research & Development Canadian Nuclear Laboratories
Dr. Ramatsemela Masango, Executive Director Mzansi Energy Solutions and Innovations
Ms. Marilyn C. Kray, American Nuclear Society & Exelon
Mr. Koji Okamoto, Japan Atomic Energy Agency

- **Japan**

Tomofumi Yamamoto, of the AESJ International Activities Committee and the ANS Japan Local Section, sent this report:

Japan Report for ANS Globe, October 2019

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

1. Energy Policy and Activities of the Government

The Government of Japan formulates the Strategic Energy Plan in order to show to the public the basic direction of Japan's energy policy under the Basic Act on Energy Policy. On July 3, 2018, the Cabinet approved the new Strategic Energy Plan as the basis for the orientation of Japan's new energy policy towards 2030 and further towards 2050, considering the changes in energy environments inside and outside Japan.

This Strategic Energy Plan shows a similar direction to the previous one and emphasizes the following:

- Renewable energy is to be the major electric power source for decarbonization
- The share of nuclear energy remains at 20-22% of total electricity in 2030
- The pursuit of reactors with superior safety, economics and mobility, and the development of technology aimed at the resolution of backend problems.

According to the Strategic Energy Plan, the Ministry of Economy, Trade and Industry (METI) launched a new project for nuclear innovation in April 2019. The budget of 2019 fiscal year is 650 million yen (Approx. \$6 million) for feasibility study.

2. Status of Nuclear Power Plants

As of September 30, 2019, only 9 PWRs are back on line and 6 plants have passed the safety review of Nuclear Regulation Authority. Utilities have decided to close 24 NPPs.

Applicant	NPP	Type	Commercial Operation	Status (NRA Review)
Hokkaido	Tomari 1	PWR	1989	Application, Jul. 2013
	Tomari 2	PWR	1991	Application, Jul. 2013
	Tomari 3	PWR	2009	Application, Jul. 2013
Kansai	Ohi 3	PWR	1991	Restart, Mar. 2018
	Ohi 4	PWR	1993	Restart, Apr. 2018
	Mihama 3	PWR	1976	Approved, Oct. 2016 Life time extension Approved, Nov. 2016
	Takahama1	PWR	1974	Approval, June 2016
	Takahama2	PWR	1975	Life time Extension Approved, Jun. 2016
	Takahama 3	PWR	1985	Restart, Jul. 2017
	Takahama 4	PWR	1985	Restart, Jun. 2017
Shikoku	Ikata 3	PWR	1994	Restart, Sep. 2016
Kyushu	Sendai 1	PWR	1984	Restart, Sep. 2015
	Sendai 2	PWR	1985	Restart, Nov. 2015

	Genkai 3	PWR	1994	Restart, Mar. 2018
	Genkai 4	PWR	1997	Restart, Aug. 2018
Tokyo	Kashiwazaki-Kariwa 6	ABWR	1996	Approved, Dec. 2017
	Kashiwazaki-Kariwa 7	ABWR	1997	Approved, Dec. 2017
Chugoku	Shimane 2	BWR	1989	Application, Dec. 2013
Tohoku	Onagawa 2	BWR	1995	Application, Dec. 2013
	Higashidori 1	BWR	2005	Application, Jun. 2014
Chubu	Hamaoka 3	BWR	1987	Application, Jun. 2015
	Hamaoka 4	BWR	1993	Application, Feb. 2014
Hokuriku	Shika 2	ABWR	2006	Application, Aug. 2014
JAPC	Tokai 2	BWR	1978	Approved, Sep. 2018
	Tsuruga 2	PWR	1987	Application, Nov 2015
J-Power	Ohma	ABWR (full-MOX)	Not yet	Application, Dec.2014

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

(1) Message from Dr. Shigeaki Okajima, new President of AESJ

Dr. Shigeaki Okajima, Japan Atomic Energy Agency, took office as President of AESJ in July 2019. His message shows the following.

Message of AESJ President

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

AESJ marked its 60th anniversary on February 14th, 2019. The year 2019 is also a notable year when a new era has been reached from Heisei to Reiwa. It is an honor for me to serve AESJ as the President at such a historical milestone.

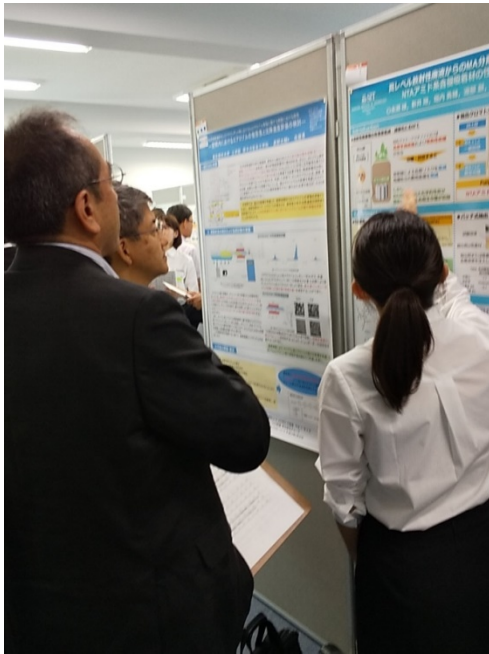
As shown below, I am working with members of AESJ on the five challenges facing "Toward the Reconstruction Period for Nuclear Energy", in addition to pursuing nuclear and radiation science and technology for a sustainable society.

1. Promoting activities for suggesting the necessity of nuclear energy and better understanding of nuclear energy
2. Promoting the decommissioning of the TEPCO Fukushima Daiichi Nuclear Power Plants (1F), and supporting Fukushima reconstruction
3. Promoting research on peaceful use of radiation and research on radiation protection
4. Continuation of education and human resource development, and technology inheritance
5. Activities to maintain the number of members

(2) Annual Conference

The 2019 Fall Annual Meeting was held at the University of Toyama September 11-13. Many special plenaries and sessions, such as decommissioning, SMRs, reactor physics, and so on were organized and implemented successfully. More than 1,500 people attended, including students.

The photographs below show the poster session and one scene of the reception party.



Poster Session



Entertainment at Reception Party
(Traditional dance in Toyama Prefecture:
ETCHU OWARA KAZE-NO-BON

Ref. <https://foreign.info-toyama.com/en/event/>)

(3) Fukushima-Daiichi- Accident-Related Activity

The Review Committee on Decommissioning of the Fukushima Daiichi Nuclear Power Station of AESJ provides scientific advices and has follow-up activities for the AESJ Fukushima Daiichi Nuclear Accident Report. The committee held a symposium on Fukushima Daiichi Decommissioning on March 9, 2019 in Tokyo. What the current subjects or problems to face with and what or how AESJ could cope with are discussed.

The following topics were presented.

- Whole process of decommissioning and its hold point
- Management goal and security of damaged reactors
- Waste management for decommissioning and restoration of sites
- Safety evaluation for damaged reactors against natural hazard
- Challenge for new technologies
- Proposal for international cooperation

The committee also co-hosted the “International Topical Workshop on Fukushima Decommissioning Research” with JSME at Fukushima on May 24-26, 2019. The workshop had five technical tracks: Fukushima accident analysis, Debris removal strategy, Robot technology, Radiation measurement and Waste management.

4. Activities of ANS Japan Section FY2019 (April - September 2019)

The ANS Japan Section is managed by the International Nuclear Information Network (ININ) of AESJ. The ININ has approximately 180 members including eleven officers.

Major activities in the first half of FY2019 are as follows;

- Semi-annual Members’ General Meetings are held twice a year, in autumn and spring. The autumn meeting was held in September 2019 in Toyama, the spring meeting will be held in March 2020 in Fukushima.
- Executive Committee Meetings are held about five times a year. Three meetings were held in April, June and August.
- Workshops are held four times a year with invited lecturers. Two workshops were successfully held in this fiscal year as follows:
 - ✓ “Key to Successful Spent Fuel and Radioactive Waste Management” presented by Dr. Christophe XERRI, Director, Division of Nuclear Fuel Cycle, Waste Technology, Research Reactor, IAEA, on July 18, 2019
 - ✓ “The French Nuclear Sector: Trends and latest Developments” and “The Jules Horowitz Research Reactor Construction, Reactor capabilities, Irradiation Facilities”, presented by Dr. Christian GONNIER, representative of Jules Horowitz Research Reactor, Cadarache Center, CEA, on September 12 , 2019

Planning of the remaining two workshops is ongoing. Also, the ANS Japan Section has other communication opportunities to the section members through e-mail, Web and annual Newsletter.

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

The following articles are gleaned from OECD NEA monthly reports.

NEA and OECD Support for Fukushima

The NEA and the OECD, together with the government of Japan, Fukushima Prefecture and the Fukushima Innovation Coast Framework Promotion Organisation (FIPO), are organising a series of Policy Dialogues on Developing Decommissioning Industry Clusters in Fukushima. The aim is to contribute to the long-term sustainable development of the area and local economy. As part of this dialogue series, the NEA and the OECD co-organized a meeting on 26-27 September 2019 to explore ways to enhance decommissioning capability, improve quality of life and boost local job creation in the Fukushima region during the decommissioning of the Fukushima Daiichi Nuclear Power Plant.

Following the two-day meeting, participants also met with representatives from SHINSEI, a local non-profit organisation based in Koriyama, Fukushima. SHINSEI provides training and job placement assistance to people with disabilities who were affected by the Great East Japan Earthquake. The participants also spent time with evacuees with disabilities to understand the impact of the 2011 accident on the current living standards of those who have special needs. They also took the opportunity to discuss how to enhance the sustainability of local communities.



Nuclear in a Changing World



The NEA participated in *Nuclear in a changing world*, a conference organised jointly by FORATOM and the Romanian Atomic Forum - ROMATOM on 26 June 2019 in Bucharest, Romania. The goal of the conference was to discuss key challenges affecting the energy sector in Europe, the role of long-term nuclear power plant operations, and skills and capacity management in the nuclear field. NEA

Director-General William D. Magwood, IV was a keynote speaker in the opening session of the conference. During his speech, Director-General Magwood discussed the costs of decarbonising electricity systems, the importance of modernising the electricity markets, and the potential for small modular reactor technologies. The NEA was also represented at the conference by Ms. Yeonhee Hah, Head of the NEA Division of Radiological Protection and Human Aspects of Nuclear Safety, who participated in the session “How to ensure we have the necessary skills” as a panellist and addressed the importance of decades-long knowledge management given the long life cycles of nuclear facilities. She also highlighted the NEA activities in the area of skills management, including the **NEA Nuclear Education, Skills and Technology (NEST) Framework** and the recent workshop on human capital and leadership challenges co-organised with the International Atomic Energy Agency (IAEA) and the World Association of Nuclear Operators (WANO).

World Nuclear Association and NEA Launch New Partnership



The World Nuclear Association signed a Memorandum of Understanding (MoU) with the NEA at a ceremony in London on 6 September 2019. Under the MoU, both organisations have agreed to share best practices and co-operate to support the wider understanding of nuclear energy and its development, to enable more effective and efficient nuclear safety, to exchange on improved

approaches to decommission deactivated facilities, to enhance the legal frameworks associated with various international nuclear activities such as transport, and to support the economic and efficient use of nuclear energy.

- [Spain](#) 

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

“45TH SNE ANNUAL MEETING”



The 45TH Annual Meeting of the Spanish Nuclear Society, held last 23-28 September 2019 in Vigo, Spain, gathered nearly 600 congresspersons. The 285 papers presented at the Congress, divided into oral, poster, multimedia and promotional sessions, dealing with areas such as radiological protection, waste management, nuclear safety, nuclear fuel, materials, engineering or communications, showed the state of the art of nuclear industry and research.

The exhibition assembled 43 of the principal nuclear industry companies in the world.



The intense technical program included two plenary sessions, two monographic sessions and two workshops, of the upmost 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:

- Nuclear power stations operating at 80 years: the United States experience
- Nuclear energy, essential to achieve the objectives of decarbonization

The monographic sessions covered the following topics:

- The future of nuclear power advanced reactors
- The medical use of radiation: proton therapy and nuclear medicine

The workshop session expanded knowledge on:

- Communication tools "That the reality doesn't spoil a good holder"
- Nuclear physics from the laboratory to improve the health of people
- 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 equality". Also, for the second time in a European country, Vigo will hosted the NEA mentoring workshop, organized jointly with WiN Spain. There were 70 female students participating from the institutes of Vigo.

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 2019”

The electricity generation share of Spanish nuclear power plants until September 2019 was 23.9%. Once again nuclear was the major source of power generation in Spain, followed by combined cycle gas (21.1%), wind (19.9%), cogeneration (12%), hydro (8.8%), solar (6.4%) and coal (4.9%).



- **United States of America**

ANS member Randy Reams of Potomac Communications Group submitted an article on the new start-up Deep Isolation:

Deep Isolation is a start-up company with an innovative solution for safely storing and disposing nuclear waste using horizontal drillholes originally developed for the oil & gas industry. The company successfully demonstrated its technology in January 2019 using a commercial oil & gas testing facility to place and retrieve a mock disposal canister sized for cesium/strontium capsules. In June the company announced that it had formed a cooperative agreement on sales, product development, and the deployment of its patented technology with Bechtel National, Inc., part of the largest engineering and construction company in the U.S. Deep Isolation believes that proactive stakeholder involvement far ahead of project execution is the only way to create an opportunity that is beneficial to all. By siting disposal wells at or near existing waste-generating facilities, the company minimizes or eliminates the need for transportation packaging and logistics. Deep Isolation looks forward to bringing its simple, affordable solution to waste streams in the United States and around the world in the near future.

IC member Patricia Paviet has submitted the following article on GIF Webinars

Generation IV International Forum (GIF) Webinar: A Platform for Education and Training on Gen IV Advanced Reactor Systems and Cross-Cutting Subjects

Patricia Paviet, Pacific Northwest National Laboratory

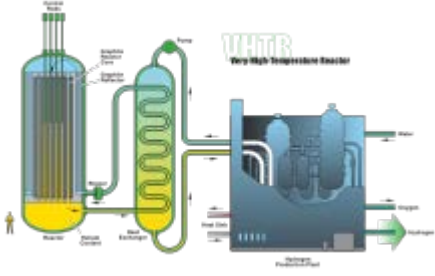
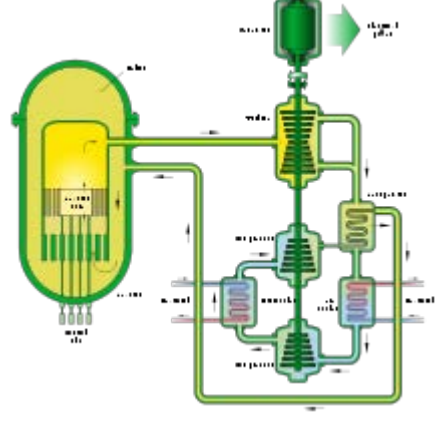
The Generation IV International Forum (GIF)-Education and Training Task Force (ETTF) was launched in 2015 to serve as a platform to enhance open education and training (E&T) as well as communication and networking of people and organizations in support of the GIF community.

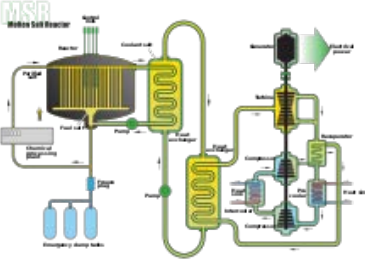
Educating and training accessible to not only the nuclear workforce, but also the general public, policy makers, and students has been one of the GIF ETTF's objectives. Considering the increase in nuclear activities around the world and the associated request from most interested countries to obtain up-to-date information on present status of the ongoing research, we launched, in 2016, a series of webinars to widely spread educational information on Generation IV systems and associated cross-cutting subjects, which will promote the main Gen IV systems. As of August 2019, thirty two webinars have been presented and archived. They can be found at www.gen-4.org. It is worthy to note, that member countries proposed more than a hundred nuclear reactor systems, of which GIF selected six, that were considered to be the most promising in light of various criteria based on the following objectives:

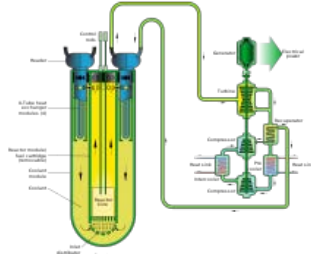
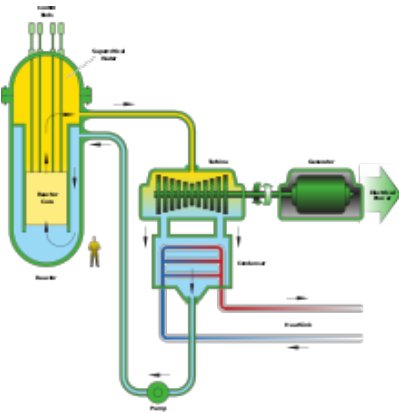
- continuation of the progress made by Generation III water reactors in terms of competitiveness and safety;
- more effective use of uranium resources;
- less radioactive waste, especially high-level, long-lived waste;
- greater protection against malicious acts and the diversion or theft of nuclear materials.

The six Gen IV reactor systems that are the subjects of the webinars series are briefly described below.

Reactor	Design	Spectrum	Fuel Cycle
The sodium-cooled fast reactor (SFR) concept uses liquid sodium as the reactor coolant, allowing high power density with low coolant volume fraction. While the oxygen-free environment prevents corrosion, sodium reacts chemically with air and water and requires a sealed coolant system. The SFR closed fuel cycle		Fast	closed

enables regeneration of fissile fuel and facilitates management of high-level waste - in particular, plutonium and minor actinides. However, this requires that recycle fuels be developed and qualified for use;			
Very High Temperature Reactor (VHTR) is the next generation in the development of High-Temperature Reactors with ceramic fuel, graphite as moderator and helium gas as coolant;		Thermal	Once-through
Gas-Cooled Fast Reactor (GFR) is an innovative nuclear system that combines fast neutrons and high temperature. The GFR, cooled by a chemically inert and a non-corrosive coolant (helium), is proposed as a longer-term alternative to sodium cooled fast reactors. One of the advantages of GFRs besides allowing adoption of the closed fuel cycle is high operating temperature, allowing increased thermal efficiency and high temperature heat for industrial applications		Fast	Closed

similar to the VHTR;			
Molten Salt Reactor (MSR) is a reactor that uses to a significant degree molten salt within the core as fuel carrier or as coolant. There are two main MSRs subclasses: 1-Fissile material is dissolved in the molten salt and serves both as fuel and coolant in the primary circuit, 2-Molten salt is the coolant in a graphite-moderated core fueled with ceramic fuel, like that employed in VHTRs. This solid fuel variant is typically referred to as a FHR, in order to distinguish it from the previous one. In liquid-fueled MSRs the fissile material is part of the liquid-coolant. While the early MSR development focused on thermal-neutron-spectrum concepts, the liquid fueled MSR concepts under development by Gen IV member states, following GIF's sustainability objectives, have been fast neutron spectrum reactors with circulating fluoride-based fuel in a closed fuel cycle.		Thermal or Fast	Closed
Lead Fast Reactor (LFR) features a fast-		Fast	Closed

neutron spectrum and a closed fuel cycle for efficient conversion of fertile uranium. It can also be used to manage actinides from spent fuel and as a burner/breeder with thorium matrices. An important feature of the LFR is the enhanced safety that results from the choice of a relatively inert coolant lead, provided that the effects of weight and the corrosive and erosive nature of lead can be overcome. It has the potential to meet the electricity needs of remote sites as well as to be deployed for large grid-connected power stations.			
Supercritical Water Reactor (SCWR) is a high-temperature, high-pressure water-cooled reactor that operates above the thermodynamic critical point of water (374°C, 22.1 MPa). Two types of SCWR core configuration are being pursued: pressure vessel and pressure tube. These core designs are based on thermal neutron, fast neutron or mixed (thermal and fast neutron) spectra.		Thermal or Fast	Once through or Closed

Uranium-based fuel has been adopted for the pressure-vessel type, while uranium/thorium-based fuel has been adopted for the pressure-tube-type thermal-spectrum SCWR concepts. Mixed-oxide-based fuel is selected for the fast-spectrum SCWR concepts.			
--	--	--	--

The GIF-ETTF has established collaborative associations with universities and nuclear organizations actively involved in Gen IV systems to foster the exchange of scientific and technical information for the development of webinars.

Short (60 to 90 minutes) webinar presentations on specific Gen IV systems and related topics are being developed in cooperation with our universities and organizations partners. The webinars are recorded and archived to become a library or collection of information for on-line access from the Gen IV website (www.gen-4.org). The Table below lists future webinars.

Table: GIF Webinar Series planned between September 2019 and March August 2020

Webinars Planned Between September 2019 and March 2020	
Gen-4 Coolants quality control Dr. Christian Latge, CEA, France September 2019	Passive decay heat removal system Dr. Mitchell Farmer, ANL, USA October 2019
Czech experimental program on MSR technology development Dr. Jan Uhlir, Research Centre Řež, Czech Republic November 2019	TRISO Fuel Dr. Madeline Feltus, DOE, USA December 2019
Thermal-hydraulics in Liquid Metal Fast Reactors Antoine Gerschenfeld, CEA France January 2020	SFR Safety Design Criteria (SDC) and Safety Design Guidelines(SDGs) Shigenobu Kubo, JAEA, Japan February 2020
Micro-Reactors Jess Gehin, INL and DV Rao, LANL, USA March 2020	

These webinars are presented and recorded live and are an efficient way to reach new audiences as well as to retain a previously engaged audience. The live webinars include slide presentations and engage the attendees by giving them the opportunity to ask questions during the live event through the webcast interface. At the end of the live presentation, questions are answered as they arrive, by the presenter. All these webinars are archived and serve as an in-depth resource in Gen IV advanced reactor systems. There are no fees associated with these webinars, which make the webinars very attractive. The success of these webinars relies on the presenters who are internationally recognized experts.

The attendees thus far have been extremely positive about the quality and content of these webinars as reflected by the following statements:

“I thought it was very interesting. The material is not often presented in other than a graduate school setting so many of us don't have access to it; other than from books. Thank you for making it possible.”

“Excellent introduction. I look forward to the ongoing program.”

“These webinars will benefit a vast audience, keep up the great work!!”

“Very good format. Great outreach. Please continue.”

“Excellent, clear and well organized presentation that covered central issues on the topic.”

“The technical content of the slides for this webinar were EXCELLENT.”

“I like the link to the GIF webinars on the Gen-4 webpage. This makes it very convenient to watch the webcasts and/or download the presentations.”

Conclusion

The GIF webinars are very successful and demonstrate a strong need for such a resource to inform not only the general public, but also the scientific community about advances in the Gen IV systems. In addition, because of the passion and grass-root efforts from professionals and educators, the GIF-ETTF goal of creating an archive of online webinars has become a reality. The webinars are accessible online in two formats: audio-video recording as well as pdf slides. This is a free public access, which makes it even more attractive to the scientific community.

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	www.aatn.org.ar
Associação Brasileira de Energia Nuclear	www.aben.com.br
Association des Ingénieurs en génie atomique du Maroc	-

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

2020

- 3-7 February: 10th International Conference on Isotopes, Kuala Lumpur, Malaysia (www.10ici.org)
- 8-13 March: International Youth Nuclear Congress 2020 (IYNC2020), Sydney, Australia (<https://www.iync.org/2020-sydney-australia-2/>)
- 15-19 March: International Congress on Advances in Nuclear Power Plants (ICAPP2020), Abu Dhabi, UAE (<https://www.icapp2020.org/>)
- 22-26 March: RRFM2020, European Research Reactor Conference, Helsinki, Finland (<https://www.euronuclear.org/conferences/rrfm/>)
- 30 March-1 April: INDEX, International Nuclear Digital Experience, Paris, France, <https://www.sfen-index2020.org/>
- 5-9 April: AccApp'20, 14th International Accelerator Applications Conference 2020, Vienna, Austria (<http://accapp20.org>) ✱
- 19-24 April: TOFE 2020, Technology of Fusion Energy, Charleston, SC

(<http://tofe.ans.org/>)



- 26-30 April: Pacific Basin Nuclear Conference (PBNC2020), Cancún, México (<http://www.pbnc-2020.mx/>)
- 25-29 May: THICKET-2020, Seminar on the Transfer of Competence, Knowledge and Experience Gained through CSNI Activities in the Field of Thermalhydraulics, Mississauga, Ontario, Canada (<https://www.cns-snc.ca/events/thicket2020/>)
- 31 May-3 June: 40th Annual Conference of the Canadian Nuclear Society and 44th CNS/CNA Conference, Saint John, New Brunswick, Canada (<http://www.cns-annual-conference.org>)
- 7-11 June: ANS Annual Meeting, Phoenix, AZ, USA (www.ans.org) 
- 23-26 August: NUTHOS-13, 13th International Topical Meeting on Nuclear Reactor Thermal-Hydraulics, Operation and Safety, Vancouver, British Columbia, Canada (<https://www.cns-snc.ca/events/nuthos-13/>)
- 23-26 August: PHYTRA5, 5th International Conference on the Physics and Technology of Reactor Applications, Xi'an, China (<http://phytra5.csp.escience.cn>)
- 9-12 November: G4SR-2, 2nd International Conference on Generation-IV and Small Modular Reactors, Toronto, Ontario, Canada (http://g4sr.org/index_v2.html)
- 15-19 November: ANS Annual Meeting, Chicago, IL, USA (www.ans.org) 

2021

- 8-11 February: CONTE 2021, Conference on Nuclear Training and Education: A Biennial International Forum, Amelia Island, FL, USA (<http://ans.org>) 
- 11-15 April: M&C 2021, Mathematics and Computation Topical Meeting 2021, Raleigh, NC, USA (<http://ans.org>) 
- 6-9 June: 41st Annual Conference of the CNS and 45th CNS/CNA Conference, Toronto, Ontario, Canada (<http://www.cns-snc.ca>)
- 13-17 June: ANS Annual Meeting, Providence, RI, USA (www.ans.org) 

- 31 October- 4 November: ANS Winter Meeting, Washington, DC, USA (www.ans.org)



2022

- 12-16 June: ANS Annual Meeting, Anaheim, CA, 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)



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

Officers	Office	e-mail
Mimi Limbach	Chair	mlimbach@pcgpr.com
Luc G.G. Van Den Durpel	Vice-Chair	vddurpel@nuclear-21.net
Gale Hauck	Vice-Chair	hauckge@westinghouse.com
Ex-Officio	Organization	e-mail
Charles R. Martin	National Security Technologies, LLC	martincr@nv.doe.gov
Eleodor M. Nichita	University of Ontario Institute of Technology	eleodor.nichita@uoit.ca
Akio Yamamoto	Nagoya University	a-yamamoto@energy.nagoay-u.ac.jp
Staff Liaison	Organization	e-mail
Valerie Vasilievas	American Nuclear Society	vvasilievas@ans.org
Committee Members	Organization	e-mail
Gustavo Alonso	Instituto Nacional de Investigaciones	Gustavoalonso3@gmail.com
James W. Behrens	US Navy	jwbehrens@comcast.net
Carol L. Berrigan	Nuclear Energy Institute	clb@nei.org
Sama Bilbao y León	Virginia Commonwealth University	sbilbao@vcu.edu
John W. Brister Jr.	AECOM	jay.brister@aecom.com
Gilbert J. Brown	University of Massachusetts Lowell	gilbert_brown@uml.edu
Stefani Buster	CNEC	srbuster@gmail.com

Luca Capriotti	Idaho National Laboratory	luca.capriotti@inl.gov
C.E. (Gene) Carpenter	US Department of Energy	gene.carpenter@hq.doe.gov
Ling-Huan Chiao	TECRO Science & Technology Division	lhchiao@aec.gov.tw
Paul T. Dickman	Argonne National Laboratory	paul.dickman@anl.gov
Juan Eibenschutz	Comisión Nacional de Segur. Nucl. y Salv.	je@cnsns.gob.mx
Ron S. Faibish	General Atomics	Ron.faibish@ga.com
Valerie Faudon	SFEN	valerie.faudon@sfen.org
Margaret E. Harding	4 Factor Consulting, LLC	margaret@4factorconsulting.com
Laura Hermann	Potomac Communication Group, Inc.	lhermann@pcpgr.com
Jay Z. James	University of California Berkeley	jzjamespe@gmail.com
Myron M. Kaczmarzsky	Holtec International	m.kaczmarzsky@holtec.com
Gail H. Marcus	Consultant	ghmarcus@aol.com
Charles R. Martin	National Security Technologies, LLC	martincr@nv.doe.gov
Fernando Perez Naredo	European Nuclear Society	Fernando.naredo@euronuclear.org
Hisoshi Ninokata	Politecnico di Milano	hisashi.ninokata@polimi.it
Patricia D. Paviet	Pacific Northwest National Laboratory	patricia.paviet@pnnl.com
Edward L. Quinn	Technology Resources	tedquinn@cox.net
Fiona E. Rayment	UK National Nuclear Laboratory	fionarayment@yahoo.co.uk
Benjamin Rouben*	12 & 1 Consulting	roubenb@alum.mit.edu
Piyush Sabharwall	Idaho National Laboratory	piyush.sabharwall@inl.gov
Santiago San Antonio	Consultant	santiago.sanantonio@gmail.com
Arkady Serikov	Karlsruhe Institute of Technology	arkady.serikov@kit.edu
Lumin Wang	University of Michigan	lmwang@umich.edu
Kevan D. Weaver	Idaho National Laboratory	weavkd@comcast.net
Gary L. Wolski	Curtiss Wright	gwolski@curtisswright.com
Kiyoshi Yamauchi	Mitsubishi Nuclear Energy Systems, Inc.	yamauchi.kiyoshi1@gmail.com

*Editor of the *ANS Globe*