



**European Nuclear Society**  
e-news issue 43: February 2014

## ENS NEWS N° 43: Intro

The dawning of a new year is usually accompanied by an instinctive need to reflect on the past and make bold resolutions about the future. In this respect 2014 is no different from any other year. However, in one fundamental way it will be very different to previous years. 2014 will be remembered, among other things, as the ‘year of institutional change.’ The nomination of a new European Commission with a new President at the helm, the election of a new European Parliament and the appointment of a new President of the European Council make 2014 a potentially game-changing year for politicians, civil servants and EU citizens alike. While the dark Machiavellian arts might not be every ENS member’s cup of tea, nobody can remain totally disinterested in or indifferent to the fact that 2014 will be a watershed year for the EU’s institutions. You might find the campaign sound-bites and the endless posturing and politicking tedious, or somehow detached from the reality of your professional life, but surely living in a political vacuum cut off from the mainstream of political life is not an option. Isn’t voter apathy among EU citizens already high enough?

Whether the prospect of a new generation of technocrats, administrators and politicians being entrusted with driving forward the political agenda of the EU inspires you or leaves you cold, the upcoming changes in Brussels will doubtless have an impact on how you work in the future; whether you like it or not. But what are the outcomes in real terms likely to be for Europe’s nuclear science and research community? Although the provisions of *Horizon 2020*, the EU’s framework for research and Innovation, are written in stone, the final choice of which fission projects will be granted funding has yet to be decided. This choice may well be influenced by a new administration keen to show what it’s made of. You might be personally involved in one of these projects, and if you are the institutional changes on the way will be of fundamental relevance to you. What’s more, a new R&D Commissioner will want to establish his credentials and make his mark on the future direction and pace of EU research policy rather than simply maintain the status quo. By the way, the outgoing R&D Commissioner, Mrs Geoghegan-Quinn, has not forged a reputation as a big supporter of nuclear energy.

Another potential outcome might involve the EC’s *Integrated Roadmap on Energy Technologies*. This initiative, which comes under the aegis of the Strategic Energy Technology Plan (SET-Plan), will outline what needs to be done to boost Europe’s ‘world-class technology and innovation’ up to and beyond 2020. Clearly, such a strategy could have a fundamental effect upon your working environment and priorities. Well, a new European Commission and a new European Parliament may

want to review and revise that strategy in order to reflect their perception of the changing political landscape. Indeed, all aspects of EU policy will be scrutinised as the new institutions become operational.

Most political commentators are predicting that the parliamentary elections will see a consolidation of power among the main parties in the middle of the political spectrum, but one attenuated by the increased polarisation of more extreme views on the fringes. Whether this will benefit the electorate remains to be seen, but for scientists and researchers any shift in the balance of power at national or EU level, or a change of agenda or emphasis within the revamped ITRE (Industry Research and Energy) Committee of the European Parliament could influence the nature and progress of EU nuclear policy.



Mark O'Donovan  
Editor-in-Chief, *ENS NEWS*

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<http://www.euronuclear.org/e-news/e-news-43/presidents-contribution.htm>

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## Word from the President



For the past 40 years I have been involved in nuclear sciences and promoting the wide variety of uses they have for society. I started at Cornell University, in the US, as a PhD student studying plasma physics (inertial confinement fusion), and completed my doctoral thesis in France, at Orsay University. I went on to work for the CEA and discovered scientific applications used first in the area of defense and later the nuclear fuel cycle. I worked both in the front end (laser isotope separation) and the back end (reprocessing and nuclear waste conditioning) of the cycle, where I directed the completion and commissioning of the Atalante research facility at CEA/Marcoule. Atalante is due to receive this year a prestigious distinction, the nuclear 'historical landmark award' presented by our sister scientific society, the American Nuclear Society (ANS).

After a number of years at the CEA I joined the French utility Electricité de France in 2007 as Special Advisor for Nuclear R&D and International Issues. Among my responsibilities was the chairing of two European technical groups: The Risks Group of the European Nuclear Energy Forum (ENEF), since September 2012, and the

European Sustainable Nuclear Industrial Initiative (ESNII) Task Force of the Sustainable Nuclear Energy Technology Platform (SNETP), since November 2010.



Whatever one's track record is, it is a great honour to hold a prestigious position in one's own country and then be elected President of the European Nuclear Society (ENS), which brings together and represents the interests of 23 scientific societies from the Member States and beyond. I would like to thank my predecessor as President of ENS, Marco Streit, and his predecessors since the foundation of ENS in 1975 for their vision, dedication and the painstaking efforts on behalf of the Society's members. They have contributed to the establishment of a European organization that has a broad range of expertise in the field of nuclear science and engineering.

The first thing that strikes me is the diversity of our members, something that accurately reflects the diverse applications of nuclear energy and science across Europe. Allow me to choose the most extreme example of this diversity: What common ground is there between the Austrian Nuclear Society - situated a country with no nuclear reactors but which is home to the International Atomic Energy Agency and quality nuclear measurement labs - and the French Nuclear Society, which represents a country where 75% of the electricity generated comes from nuclear, operates 58 reactors with a closed fuel cycle and is launching nuclear projects not only in France, but also in the United Kingdom and China? Diversity indeed!

But whatever differences there may be due to culture, history (think for instance of central Europe), size and above all social acceptance of nuclear energy, we all share the same common values. The most remarkable of these is the conviction that nuclear science is of fundamental importance to Europe for at least two reasons:

Firstly, because the R&D work carried out is of a very high quality. As Chairman of ESNII I have discovered that there are many highly qualified research teams working all around Europe that have great scientific and engineering capability. They work either in Government laboratories or in industrial R & D centers, and nowadays they have greater difficulty in obtaining the necessary financial resources than they did twenty years ago.

Secondly, nuclear science is very important because it is the key to the future development of fission as an industrial energy source in Europe and globally. Europe should be fully aware of and exploit the considerable scientific assets it has at its disposal if it is to compete internationally with Asia.

It is vital to promote these shared values in a diversified Europe where the post-Fukushima political choices will divide countries between those who wish to continue using nuclear energy and those who want to stop doing so. This is a tall order. It will require great effort. There are crucial debates that should be further promoted and many meetings that must take place to spotlight the great contribution of nuclear science. This will help accelerate the pace of development. But even in the countries that have already stopped exploiting nuclear energy, or will do so, nuclear sciences and associated engineering activities will remain crucially important. Think about decommissioning, waste packaging or radiation effect studies using bio-

molecular chemistry and genetics - to name but a few. Our task will be to bridge the gap between the 'haves' and the 'have nots', to maintain that rich diversity and to move forward together.

**Noel Camarcat, newly-elected President of the European Nuclear Society**

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<http://www.euronuclear.org/e-news/e-news-43/etkm.htm>

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## **FORATOM/ENS Education, Training and Knowledge Management Task Force publications**

### **National initiatives to attract young people to study nuclear energy related subjects**

According to the European Human Resources Observatory in Nuclear (EHRO-N) report published in 2012, which is entitled "Putting into perspective the supply of and demand for nuclear experts by 2020 within the EU-27 nuclear energy sector," the nuclear industry will be faced with a lack of qualified employees. The report states that around 40.000 nuclear experts will be needed by 2020 to take up new posts and to replace retired personnel. The lack of engineers and young qualified people is also a problem that other energy technologies are facing. In order to respond to the HR needs of the nuclear industry it is important to encourage young people to study engineering, physics, chemistry or mathematics. The statistics show that less and less students are graduating in science, technology, engineering or mathematics (STEM) subjects. A majority of European countries, together with the European Commission, have launched various initiatives to attract young people to study STEM subjects. One objective is to increase young people's interest in technical studies beginning at both primary and secondary school levels. It is important to mention other significant initiatives that have been supported by the European Commission in the past and which have had the objective of attracting the attention of young people to the value of studying STEM subjects. These included projects related to teacher training (the [Amgen Science Teacher Training initiative](#)), innovative practices ([Pathway](#)), technology-enhanced learning ([Go-Lab](#)) and science awareness in schools ([Xperimania](#), [FuturEnergia](#)).

Skills in STEM subjects are becoming an increasingly important part of basic literacy in today's knowledge economy. "To keep Europe growing, we will need one

million additional researchers by 2020” states the EC in the Final Report on the Research Profession<sup>1</sup>.

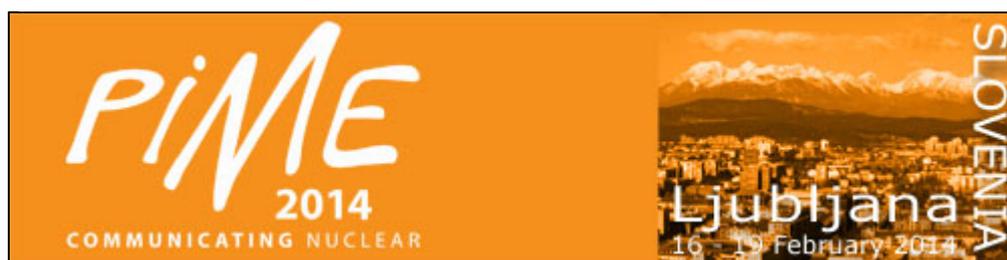
Considering the above-mentioned scenario the FORATOM/ENS Education, Training and Knowledge Management Task Force (ETKM TF) recently launched a call for contributions from its members in order to provide an overview of all industry initiatives at secondary school level that aim to attract pupils to study STEM subjects, particularly nuclear-related disciplines. Answers to the call for contributions were received from 17 European countries. The ENS-Young Generation Network is one of the most active groups in this regard, visiting schools and cooperating with school teachers to explain nuclear energy issues to pupils. In Austria, Croatia, France, Netherlands, Poland, Romania and Slovakia the Young Generation Network organises, with great support from their National Societies, a number of school visits, meetings with pupils and teachers to explain what radiation is and what generating nuclear energy is all about. It’s another example of the Young Generation speaking to young people. In Belgium and Slovenia, e.g., the educational objective of attracting youngsters to study energy-related subjects is led by the main national research institutes. In Bulgaria, France or Spain the nuclear industry is the main actor in explaining nuclear energy issues to secondary school pupils. In most of these countries the cooperation between scientific organisations, academia and industry in actively approaching young people to explain to them the complexity of nuclear is very strong. Some positive examples of this good collaboration can be seen in FORATOM/ENS ETKMTF publications that available online at [www.euronuclear.org](http://www.euronuclear.org)

<sup>1</sup>[ec.europa.eu/euraxess/pdf/research\\_policies/ExpertGrouponResearchProfession.pdf](http://ec.europa.eu/euraxess/pdf/research_policies/ExpertGrouponResearchProfession.pdf)

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<http://www.euronuclear.org/e-news/e-news-43/PIME2014.htm>

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## **PIME 2014: Delivering results for your day-to-day work**

There are not many specialised communications conferences that are still going strong after more than 25 years, especially in an area as technical and complex as nuclear energy. But PIME is one of them. Its track record proves it. But what is the secret of its longevity? What is its unique selling proposition?

It’s all about sharing experiences, cross fertilising ideas, working together to design the tools needed to solve common solutions and, as a result, improving our communications output.

This practical and results-oriented approach is clearly evident in the ***PIME 2014 programme***, where workshops focusing on social media, working with contractors and ‘talking about radiation’ put the emphasis on identifying best practices, thinking outside the box, establishing partnerships and delivering materials that really speak to target audiences.

If you return home from ***PIME 2014*** (16 – 19 February 2014 in Ljubljana, Slovenia) with new ideas and practical tools that you can apply to your everyday reality then PIME will once again have delivered and proven its durability.

If you are interested in results, make sure that you are part of the winning PIME formula and [register your attendance NOW](#).

**PIME 2014 Conference Secretariat**

[www.pime2014.org](http://www.pime2014.org)

[pime2014@euronuclear.org](mailto:pime2014@euronuclear.org)



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<http://www.euronuclear.org/e-news/e-news-43/RRFM2014.htm>

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## **RRFM 2014 - Programme out now!**

This year the European Research Reactor Conference (RRFM) will be organised from **30 March – 3 April in Ljubljana, Slovenia**.

**All areas of the Nuclear Fuel Cycle of Research Reactors** will remain a key focus of this year's programme.

Furthermore delegates at RRFM 2014 will discuss:

- **Utilisation of Research Reactors**
- **New Research Reactor Projects**
- **Research Reactor Operation and Maintenance**
- **Innovative methods in research reactor analysis and design**

Following last years' success and highlighting the important work done in the area, two technical sessions will be dedicated to **Safety and Security of Research Reactors**.

Ten **keynote speeches on international topics** will highlight projects of importance to the entire Research Reactor Community.

Further information on RRFM 2014 and the preliminary programme is available at [www.rrfm2014.org](http://www.rrfm2014.org)

**Register now!**

**RRFM 2014 Conference Secretariat**

[www.rrfm2014.org](http://www.rrfm2014.org)

[rrfm2014@euronuclear.org](mailto:rrfm2014@euronuclear.org)



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## ENC 2014

### Get expert insight into how to meet the challenges faced by NPP's

The European Nuclear Conference (ENC) is THE get-together for the international nuclear industry and science community. It provides a platform for the sharing of experiences, for identifying solutions and their practical applications.

**This year ENC 2014 will focus on challenges faced by nuclear power plant operators and how to meet them.**

One of our keynotes and several technical sessions will give an insight into the complex issues faced by the Belgian Doel 3 and Tihange 2 power plants following Hydrogen Flakes in their Reactor Pressure Vessels.

[Read more ...](#)

ENC 2014 Conference Secretariat

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## TopFuel 2015

### Mark your diary for TopFuel 2015!

TopFuel is an annual topical meeting of nuclear fuel experts from around the world. It is the annual occasion to discuss the challenges facing the developers and manufacturers of new high-performance nuclear fuels – fuels that will help meet current and future energy demand and reduce man's over dependence upon CO<sub>2</sub>-emitting fossil fuels.

TopFuel 2015 will take place from 13 – 17 September 2015 in Zurich, Switzerland.

Switzerland is known for highest burn-ups and high-quality NPP operation as well as cutting edge fuel investigations – from hotlab to synchrotron investigations. TopFuel delegates will have the opportunity to visit some of the most interesting Swiss nuclear sites.

### Don't miss TopFuel 2015 – mark your diary!



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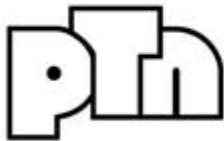
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<http://www.euronuclear.org/e-news/e-news-43/france-poland.htm>

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*'The Polish and French nuclear societies recently signed an agreement rubberstamping their intention to exploit common synergies and objectives and to cooperate closely on a wide range of activities. The two organisations put out a press release. And here it is. (Editor-in-Chief)'*



## PRESS RELEASE

**Warsaw, November 28, 2013**

The Polish Nuclear Society (PTN) and the French Society of Nuclear Energy (SFEN) signed Thursday, November 28, 2013 in Warsaw an agreement for cooperation in the nuclear field. This agreement opens a new chapter in the history of the special, long-lasting relationship that the two countries have had in nuclear. Its general objective is the advancement of science and technology in the field of nuclear energy .

It will allow each of the two companies to benefit from the skills and high-level knowledge developed by each other.

This agreement includes the exchange of information on the conferences and seminars organized by each society, as well as contacts between different groups of experts and groups of young professionals and students. It also includes the exchange of articles from journals published by the PTN (Postępy Techniki Jądrowej) and SFEN (Revue Générale Nucléaire) .

The agreement signed November 28, 2013 was concluded for a period of 5 years.

PTN President Zimek stated: "The objectives and action programs of our two companies are exceptionally convergent and the large gap between our achievements and our centers of mutual interests will allow us to benefit from the rich French experiences and contribute to the optimization of the process of developing nuclear energy in Poland. "

SFEN President, Mr. Minière, stated: "Our two societies comprise many researchers. This agreement will enhance the dynamism and the high level of their work in Poland and France, and promote exchanges and advances in areas that shape the nuclear future "

PTN is co-editor of the journal "Postępy Techniki Jądrowej (PTJ)" The signing of the agreement between PTN and SFEN took place at the party given on the occasion of the 20th anniversary of this review .

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SFEN : scientific non-profit association established in 1973 , the French Nuclear Energy Society includes 3,500 members, researchers, engineers, professionals, physicians working mostly in the nuclear field. Its purpose is to promote the progress of nuclear science and technology and to contribute to the public knowledge about this form of energy.

PTN : Polskie Towarzystwo Nukleoniczne is an association working, in public interest, for the safe use of the nuclear phenomena, processes and techniques, in particular for the production of energy, the development of industry and agriculture, and the preservation of health and the natural environment. PTN initiates and supports research and technology in all areas of nuclear and objectively inform the company of the safe use of phenomena, processes and nuclear techniques .

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<http://www.euronuclear.org/e-news/e-news-43/sne-news.htm>

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## **SNE SIGNS AGREEMENT WITH THE CHINESE NUCLEAR SOCIETY**

The Board of Directors of the Spanish Nuclear Society (SNE) has signed a collaboration agreement with the Chinese Nuclear Society (SNC). The agreement, signed by SNC's President Guangxing Li and SNE's President Francisco Lopez, acknowledges the interest that both organizations have in establishing a framework for mutual scientific and technical collaboration.

More specifically, the agreement refers to an exchange of experiences in areas of interest to both parties, including creating publications, distributing information on congresses and meetings, providing assistance to members of each organisation to enable them to attend events organized by their counterpart and, basically, support any initiatives that raise the awareness of the nuclear sector and nuclear companies in either country.

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<http://www.euronuclear.org/e-news/e-news-43/nene2014.htm>

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## NENE 2014

In 2014, the Nuclear Society of Slovenia will organize the 23rd International Conference Nuclear Energy for New Europe. The conference will be held in the attractive maritime resort of Portorož, Slovenia, during September 8-11.



The conference is a traditional annual meeting of professionals from nuclear research and educational institutions, nuclear vendors, utilities and regulatory bodies. It attracts around 200 participants from more than 20 countries. The topics discussed are general and include reactor physics, thermal hydraulics, probabilistic safety assessment, severe accidents, nuclear fusion, nuclear power plant operation, nuclear materials, waste management and new reactor designs.

The conference website URL is [www.nss.si/nene2014/](http://www.nss.si/nene2014/).

For more information contact Mrs. Saša Bobič (email: [sasa.bobic@ijs.si](mailto:sasa.bobic@ijs.si), phone: +386 1 588 53 02).

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<http://www.euronuclear.org/e-news/e-news-43/hungary.htm>

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## Hungarian Nuclear Society highlights publication of three new books

Three new books were published in 2013 with the support of the Hungarian Nuclear Society. Several of the authors are active members of the society. The books are available in Hungarian. Here is a summary of all three:

The “*Safety of nuclear reactors*” was written by a large group of Hungarian experts. The book discusses different aspects of nuclear safety. It starts with the description of basic physical phenomena (e.g. nuclear fission and chain reactions). The operation of different reactor designs is also presented. Thermal hydraulic phenomena, fuel behavior and activity release are discussed in separate dedicated chapters. The authors focus on water-cooled reactors, quoting several examples of VVER reactors operational in Hungary. A significant part of the book is devoted to safety criteria and deterministic and probabilistic safety analyses.



“*Challenges and solutions in the development of Hungarian nuclear technology*” is the subtitle of the book: “*Hungarian grandchildren of Prometheus*”. The writing of the book was coordinated by a senior group of members of the Hungarian Nuclear Society. They provided a historical overview of the peaceful applications of nuclear energy in Hungary, including the building of the Paks nuclear power plant. Most of the authors participated in the construction works and their personal experience is illustrated in the book. The last chapter includes a vision of the future of nuclear energy in Hungary.

Finally, “*Nuclear law in the first decades of the 21st century*” is the first Hungarian book to provide an extensive overview of the legal aspects related to the application of nuclear technologies. The authors emphasize the importance of nuclear safety and the need for liability insurance in the event of nuclear accidents. High priority is also given to the different issues linked to the handling of radioactive waste. The book summarizes the various international legal practice related the peaceful application of nuclear energy and to the decommissioning of nuclear installations. It also proposes useful solutions to everyday problems.

<http://www.euronuclear.org/e-news/e-news-43/sweden.htm>

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## The Swedish Nuclear Society Honorary Award

In January 2014, during the annual Elforsk Dinner for the nuclear power industry in Stockholm, the Swedish Nuclear Society (SKS) presented the *SKS Honorary Award 2014* to the former Director General of the Swedish Radiation Safety Authority, Lars Högberg. Lars contributed considerably to the establishment of the authority and played an important role in Sweden during the aftermath of the Three Mile Island

(TMI) accident when he persuaded key politicians to trust in the Swedish nuclear programme. He was a driving force behind the development and installation of the filtered venting systems at Swedish nuclear power plants. On an international level he served as Governor of the Board of the IAEA and as Chairman of the Steering Committee of the OECD's Nuclear Energy Agency. In recent years, Lars was involved in the creation of a regulatory framework in the United Arab Emirates. In 1991, he was elected a Fellow of the Royal Swedish Academy of Engineering Sciences.



### **Recent activities in the Swedish Nuclear Society**

In recent months, SKS has organised a number of nuclear related technical tours. In October 2013, the facilities of the Swedish Nuclear Fuel and Waste Management Company, in Oskarshamn, were visited. Participants had a close look at the interim storage facility (CLAB), the Äspö Hard Rock Laboratory - located 500 m underground - and the bentonite clay laboratory.

In November 2013, a group of more than 20 SKS members gathered in Malmö, in the south of Sweden, for an 'anecdotic dinner' with Emil Bachofner, a former nuclear safety specialist at Studsvik and OKG. During the dinner Emil shared with the group his memories of the time when the Marviken nuclear power plant was being built. The following day the group visited the Barsebäck nuclear power plant, which is under decommissioning, and the office of the European Spallation Source (ECC) in Lund.

In January 2014, a group of about 20 SKS members met for dinner in Gothenburg. The dinner was preceded by a visit of the nuclear fuel chemistry laboratory of Chalmers Technical University. The next day the group travelled to Halden, in Norway, where they saw the Halden experimental reactor and the Hammlab MTO laboratory.

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<http://www.euronuclear.org/e-news/e-news-43/SIEN.htm>

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## The International Symposium on Nuclear Energy – SIEN 2013

From 10-14 November 2013, Bucharest hosted the 11th edition of the *International Symposium on Nuclear Energy (SIEN)*. SIEN is a landmark conference dedicated to the Romanian nuclear sector – the first one was organized 20 years ago, in 1993. The symposium is organized biannually by the [Romanian Nuclear Energy Association](#) and the [Romanian Atomic Forum](#), under the patronage of the European Nuclear Society.

This year's symposium welcomed the support of major companies in the nuclear industry and was the first one to be organized in partnership with the Romanian National Committee of the World Energy Council. Among the most illustrious personalities present at *SIEN 2013* were Their Excellencies, the Ambassadors of Great Britain, Poland and Italy, as well as the Commercial Attaché of the Canadian Embassy, in Bucharest; Jean-Pol Poncelet, ENS General Secretary and Peter Bucher, from *NucNet* news agency. Also present were members of the Romanian Academy; Marius Peculea, President of the Romanian National Committee – World Energy Council (CNR-CME); Iulian Iancu; Elena Popescu, General Manager of the Energy and Environment Division of the Ministry of Economy; Daniela Lulache, CEO of Nuclearelectrica and Florin Tatar, President of the Nuclear and Radioactive Waste Agency.

During the symposium the debates were open to all those interested in nuclear science, technology, financial and economic aspects related to progresses and improvement in the nuclear field, under the motto “Nuclear power - a milestone on the path of progress”. Representatives of the Romanian Government and the private sector sent out a clear message of support for the continuous development of new nuclear projects.

*SIEN 2013* brought together around 200 participants from 11 countries (Canada, Great Britain, Czech Republic, Italy, South Korea, Belgium, Austria, Russia, Republic of Moldova and Romania), each with a significant contribution to make to the success of the conference. In addition, participants from Romanian and international institutions such as SN Nuclearelectrica SA, the Nuclear Research Institute in Pitesti, Center of Technology and Engineering for Nuclear Projects (CITON), ICSI-Rm Valcea, the Romanian Regulatory Body, Candu Energy, Ansaldo

Nucleare and AMEC also made a valuable contribution. In total, 70 papers were presented in the 5 technical sessions and during the Posters session:

- Nuclear & Regulatory Policies and Public Acceptance
- New Technologies/Techniques/Life Management/Life extension
- Operation, Inspection & Maintenance
- Fuel Cycle, Radioactive Waste Management & Decommissioning
- Safety and Environment

SIEN 2013 also hosted specialized workshops:

- WIN: *Environment and Health-How to build and disseminate the messages?*
- Young Generation Network: *Communicating nuclear science*
- Procurement of goods and services for the nuclear sector
- Workshop/SRRp National Conference: *Individual monitoring and environmental dosimetry – as important components of the radiation protection culture*

An addition, ten papers were presented during the two plenary sessions, which took place at the beginning of each day. The final day of *SIEN 2014* was dedicated to a technical visit at Pitesti Nuclear Fuel Plant.

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<http://www.euronuclear.org/e-news/e-news-43/SNUS.htm>

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## Nuclear veterans - old, but still active

**Slovak Nuclear Society's (SNUS) "Seniors in Nuclear" section shows its creative potential.**

Though they may be older, retired veterans of the nuclear power industry are still very active and represent a precious source of know-how. Their knowledge and experience has been (and should remain) a vital resource for our nuclear society; one that ensures continuity in relation to the safe and reliable exploitation of nuclear energy.

So, in May 2010, veterans of the nuclear industry in Central and Eastern Europe (CEE) formed the International Union of Veterans of Nuclear Energy and Industry (IUVNEI - in Russian MSVAEP). The Union unites national and corporate organizations of nuclear veterans from CEE countries with a nuclear programme. Membership of IUVNEI is voluntary. IUVNEI's headquarters are in Moscow. The largest number of IUVNEI members is from Russia - 8 veteran organizations in total,

with 12 000,000 members. According to IUVNEI's statutes, in Russia every person who has worked for a number of years in the nuclear power industry automatically qualifies as a veteran.



*Participants of 9<sup>th</sup> IUVNEI Central Committee meeting at residency of the Head of Trnava County and president of the Slovak Nuclear Forum Tibor Mikuš, in Trnava*

So far, the following countries have joined Russia in IUVNEI: Armenia, Bulgaria, Hungary, Finland, the Czech Republic, Slovakia and Ukraine. All these countries have VVER units in operation, although they have far less members than the Russian Federation.

IUVNEI Chairman is Oleg Sarayev, former Director of the Beloyarskaya NPP and a former Director of Rosenergoatom. The representative of the Slovak Nuclear Society, (which is one of IUVNEI's founder members), who is also IUVNEI's Vice-chairman, is Jozef Valovič, previously Secretary General of SNUS.

From 21 – 23 October 2013, IUVNEI's Central Committee met in Slovakia, in Trnava and Bratislava. It was the ninth such meeting since IUVNEI's foundation in 2010 and the second to take place in Slovakia. During the meeting the Slovak Nuclear Forum, representing the Slovak nuclear industry, and its President, Tibor Mikuš, became members too. Participants discussed the activities of national and corporate members since the previous meeting and made plans for future activities.

Among the things that veteran organizations from different countries have in common are the desire to preserve acquired experience and past know-how relating to nuclear power, to make it available to a new generation of nuclear professionals and to avoid repeating the mistakes made during the "pioneer era" of nuclear development. Important too is IUVNEI's cooperation with the WANO Moscow Centre. Within this context veteran experts from Slovakia participated in peer review missions at Smolenskaya NPP, Rostovskaya NPP and Kurskaya NPP JE. Through these activities IUVNEI confirms its place and the role that it plays in nuclear veterans' lives.



*President of the Slovak Nuclear Forum Tibor Mikuš greeting the Central Committee meeting participants (from left Yuri Saraev, Tibor Mikuš, Jozef Valovič, Evgeniy Akimov)*

Czechoslovakia, as it was called then, was a nuclear power pioneer and Juraj Kmošena and Jozef Keher were awarded commemorative medals marking this fact by Rosatom.

Among the events organized during the veterans' meeting were an exhibition of paintings of contemporary artists from the 'nuclear area' of Trnava, and a concert of the 60-strong Nikolay Nekrasov Academic orchestra, which plays regularly on Russian radio and Slovak TV in Bratislava. The event, which got an enthusiastic response, was sponsored by Russia's state-owned nuclear corporation Rosatom.

IUVNEI is open to all nuclear veterans. You can find more information about how to join us at: Поройков Сергеевич <[poroykov-vs@rosenergoatom.ru](mailto:poroykov-vs@rosenergoatom.ru)> or Jozef Valovic <[jozef7@yahoo.com](mailto:jozef7@yahoo.com)>

**By Juraj Kmošena, "Seniors in Nuclear" of the Slovak Nuclear Society**

<http://www.euronuclear.org/e-news/e-news-43/ygn-reporter.htm>

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## NESTet 2013 – Putting the spotlight on nuclear education and training

*NESTet 2013* is a well-known international conference organised every two years by the European Nuclear Society (ENS). Its main aim is to promote discussion of the challenges that the industry is facing worldwide with regards to nuclear education and training and to analyse what progress has been achieved to date. This year's event took place in Madrid and was organized by ENS in cooperation with the Spanish Nuclear Society (SNE). From 17-21 November 2013 *NESTet* brought together almost 124 specialists and trainees in the nuclear sector from all around the world, who delivered more than 80 presentations.

During the three days of the conference many interesting and revolutionary projects were presented in plenary and during the parallel sessions, which focused on the topics such as: *What are the needs with regard to nuclear education and training? What are the answers which help closing that gap? What is the situation with respect to infrastructure and tools for nuclear education and training? How to ensure that enough motivated workforce is available for the nuclear sector? What are the interactions between nuclear education and civil society? The use of technologies for education and training, What are the experiences of countries with an emerging nuclear sector?*



The opening session kicked off on Monday morning with a welcoming speech from Jean-Pol Poncelet, Director General of FORATOM. This was followed by speeches from A. Santos of the Spanish Nuclear Society and G. Jimenez from the Spanish Young Generation Network regarding the importance of developing complete and diverse education and training programmes, as well as the Spanish experience when it comes to nuclear education and training.

The first day of the conference continued with the plenary session chaired by J. Tupa from the UK's National Skills Academy for Nuclear, which addressed the topics of maintaining nuclear competence within the EU, education, training and nuclear knowledge management. During the presentations it was emphasised that the nuclear industry should actively encourage the setting up of knowledge transfer mechanisms to ensure that the knowledge, know-how and experiences of the current generation of professionals within the industry is not lost to the young people entering a career in nuclear. The continuity of success depends on how we deal with that accumulated knowledge.

The second part of the day was dedicated to the parallel sessions, during which speakers and the participants worked together to find out the answers to the following issues: *What are the needs with regard to nuclear education and training?*  
*What are the answers that help close the gap?*

During her presentation A. Nakai (Japan) underlined the fact that cultivating human resources in the field of safety management is of prime concern in nuclear engineering and she gave as an example the case of Japan. In the immediate aftermath of the Fukushima accident poorly managed communications and cooperation, and a lack of experienced engineers in the field led to nothing but fear and concern for the safety of the population. This was further exacerbated by media and nuclear energy opponents. The most important lesson to be learned was that unless nuclear industry uses a highly-qualified workforce the outcome is extremely difficult to control and the damage can be permanent.

So, in order to cultivate a steady and sustainable safety culture in the field of nuclear engineering, Okayama University took the initiative to extend its programme and to identify opportunities for improving operation and safety for both the plant and personnel.

At the end of the first day participants enjoyed a traditional Spanish dinner which was hosted in an unique restaurant called Palacio del Negralejo, outside Madrid. A group of flamenco singers and dancers provided entertainment throughout the evening.

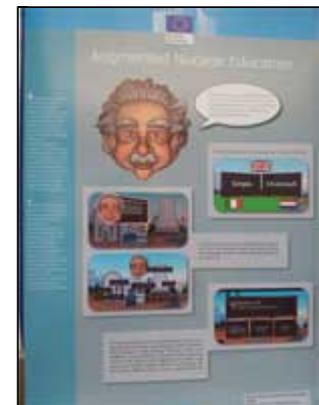


It was a new way to get in touch with the participants, to socialise and to exchange opinions on various issues.

The second day of the conference began with two parallel sessions and continued with the Young Generation Workshop on the use of new technologies for education and training, chaired by Eileen Radde, Vice President of ENS – Young Generation Network.

One of the speakers, Mathias Lantz, a professor at Uppsala University in Sweden, caught the attention of the participants during the Young Generation Workshop by presenting a new educational tool called “Clickers”. It helps professors at the university to check on the students and to better interact with them during the classes. In my opinion, it was one of the most appreciated presentations that was delivered during the conference, both for its quality and its usefulness to university professors’ everyday work.

On the last day one of the organisers, Emilia Janisz, announced the winner of the poster contest. During the previous two days participants were asked to review the 18 posters exhibited in the university hall and to vote for the best one. The winners were E. Corniani, U. Von Estorff and H. P. Ogden from the European Commission’s Joint Research Centre, Netherlands, who created the poster entitled “*Augmented nuclear education*”. The project they presented in the poster was about explaining how a nuclear power plant works and answering some of the most frequently asked questions. This innovative approach consists of enhancing the



end-user experience and attracting his or her interest through the implementation of an ‘augmented reality environment’ that blends digital objects with reality so that they appear in the user’s real-world environment.

Among the issues discussed during the two parallel sessions on the third day was the fact that in order to succeed in education, to maintain and extend a competent workforce in nuclear industry, medical, research and even in governmental organisations, and to transfer the knowledge and know-how to the next generations, a collective effort and common vision are required from companies, governments, universities, institutes for research, etc. All the efforts aimed at developing programmes and activities focused on courses and training for both students and professionals, policy support regarding education and training in the nuclear field and guidance for young researchers.

At the end of the conference Eileen Radde presented some of the highlights of *NESTet 2013* in the concluding remarks that she made together with J. Tipa. Their conclusions focused on the current challenges the industry is facing worldwide, on the importance of nuclear education and on the ability of the industry to maintain a qualified and capable workforce, especially after Fukushima.

The last day of *NESTet 2013* was reserved for technical visits for the participants. They were asked to choose between three main objectives: TECNATOM, JUZBADO (The Nuclear Fuel Fabrication Plant) and ZORITA NPP (which is under decommissioning right now). I went to visit TECNATOM, together with other colleagues. The representatives of Tecnatom gave a presentation about the services they provide to enhance the quality and the standards of training provision. The Fukushima accident, which has left a permanent mark on the nuclear industry, prompted significant changes in the simulation training tools, which led to a thorough analysis of plants' behaviour under severe accident conditions. In my opinion, it was a very interesting visit and we had the opportunity to see simulation tools used in the training programmes for different types of reactors and nuclear power plants.

I would like to emphasise that the members of the Spanish Nuclear Society and the Spanish Young Generation Network played an important role in the conference. Some of them were members of the organising team, while others delivered interesting speeches on the projects and activities they have developed to cover not only education but also training requirements for professionals.

One thing is clear after analysis, the nuclear industry is a challenging and motivational, constantly self-improving, future-oriented, dynamic and friendly environment in which to work.

Having had an opportunity to be the Young Generation reporter at *NESTet 2013* was a wonderful and useful experience. It helped me to exchange of information, knowledge and experience with other nuclear specialists who come from a variety of backgrounds and from different countries across the world. As a Romanian Young Generation Reporter I am grateful to ENS for assigning me the task of being the reporter of the conference and for making the event a real success.

**Livia Ioana Chitu**  
**Young Generation Reporter**  
**YGN Romania**

<http://www.euronuclear.org/e-news/e-news-43/IYNC-2014.htm>

MEMBER SOCIETIES

## IYNC 2014 –Rising to the challenge



IYNC 2014 is an international conference for both young and senior nuclear specialists. The “Last Call for Summaries” has been launched and the deadline for receiving contributions is 14 March 2014. Papers are expected in the following technical fields, all of which feature on the conference programme:

1. Operation and Maintenance, Design Modifications, Radiation Protection
2. Generation 3 Reactors and SMRs
3. Reactor Physics and Materials (including Advanced Reactors, e.g. Gen IV)
  - 3.1 Thermal-hydraulics
  - 3.2 Neutronics
  - 3.3 Materials
4. Safety, PRA, Severe Accidents and Fukushima
5. Fuel Cycle Front-end and Non-Proliferation
6. Decommissioning, Fuel Cycle Back-end and Waste Management
7. Fusion
8. Training, Human Resources and Human Factors
9. Politics and Economics, Social Acceptance
10. Medicine and Other Applications
11. YGN Best Practices

In addition, 15 interactive workshops will be organized covering both technical and non-technical areas.

Participants in *IYNC 2014* will have the opportunity to exchange knowledge and experience with keynote speakers from the industry such as: Danny Roderick, Westinghouse CEO & President; Alejo Vidal-Quadras, Vice President of the European Parliament; Ibrahim Babelli, K.A. CARE Chief Strategist; Mike Weightman, former ONR HM Chief Inspector in the UK; Ralf Gldner, CEO E.ON Kernkraft GmbH; Ken Ellis, WANO Managing Director; etc.

Spain has a long tradition of operating nuclear power plants, with the first reactor having been constructed in 1964. Currently, Spain has seven nuclear reactors generating a fifth of its electricity. The organizers of *IYNC2014* propose visits to one of 7 important nuclear sites on the last day of the conference:

- Tour 1 ENSA Manufacturing Facility for large nuclear components
- Tour 2 Juzbado Fuel Manufacturing Facility
- Tour 3 Garoña Nuclear Power Plant
- Tour 4 Tecnatom simulators and facilities
- Tour 5 José de Cabrera NPP
- Tour 6 Trillo NPP
- Tour 7 Ciemat investigation center with stellarator (TJ-II)

In addition to the organisation of the conference an initial meeting between the representatives of the Chinese Nuclear Society and IYNC took place in November 2013, in China. The programme included visits to the Sanmen NPP and the State Nuclear Power Engineering Corporation (SNPEC). It is expected that participants, managers and plenary session speakers from China will attend *IYNC2014*. The venue for the conference has been confirmed as the ABBA Hotel in Burgos.



We would like to invite our members and all interested parties to keep up-to-date with news concerning the IYNC network and IYNC2014, by visiting our website at: [www.iync.org](http://www.iync.org).

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<http://www.euronuclear.org/e-news/e-news-43/SFEN.htm>

MEMBER SOCIETIES

## Atoms for the Future conference: developing knowledge, investing in youth



*Atoms for the Future 2013 – Visit to Dampierre NPP*

take place from 13 to 16 October 2014. The sessions will be held in Paris and will give an overview of nuclear power plant construction in terms of design, regulatory and financial frameworks, commercial and social aspects, construction challenges, etc.

The detailed agenda of the conference is still under preparation but Dominique MINIERE, EDF Senior Vice

*Atoms for the Future* is a major international conference organised each year in Paris by the French Nuclear Energy Society's Young Generation Network (SFEN JG). The objectives of the conference are to develop knowledge about the nuclear industry, to visit nuclear facilities and to encourage networking among nuclear young generation members. The event consists of two days of high-level sessions and two days of technical tours. The 2013 edition welcomed more than 250 students and young professionals from the nuclear industry from 13 different countries, including the United States, Germany, Poland, the United Kingdom, Finland, Hungary, India, etc.

*Atoms for the Future 2014* will be dedicated to the *Design, Licensing and Construction of Nuclear Power Plants*. The conference will



*Atoms for the Future 2013 – Lectures in Paris*

President, Deputy Chief Operating Officer and SFEN President and Christophe BEHAR, CEA Director of the Nuclear Energy Division, have already confirmed their participation.

Make a note of the date and keep in touch!  
[www.sfenjg.org/Atoms-for-the-Future-2014](http://www.sfenjg.org/Atoms-for-the-Future-2014)

<http://www.euronuclear.org/e-news/e-news-43/AiNT.htm>

ENS CORPORATE MEMBERS

## AiNT at forefront of training in the field of nuclear engineering

The Aachen Institute for Nuclear Training (AiNT) is a spin-off of the RWTH at Aachen University. AiNT offers a comprehensive range of training programmes designed to meet the specific education and advanced training needs of junior staff and experienced technicians in the field of nuclear engineering. The courses are delivered in cooperation with experts, who are qualified to present their practical experiences in the field of nuclear engineering. As the leading training institute in nuclear engineering in Germany, AiNT offers, in addition, a tailored in-house training course to meet the demands of each client. So, AiNT creates a specific programme, in which different lecturers are involved.

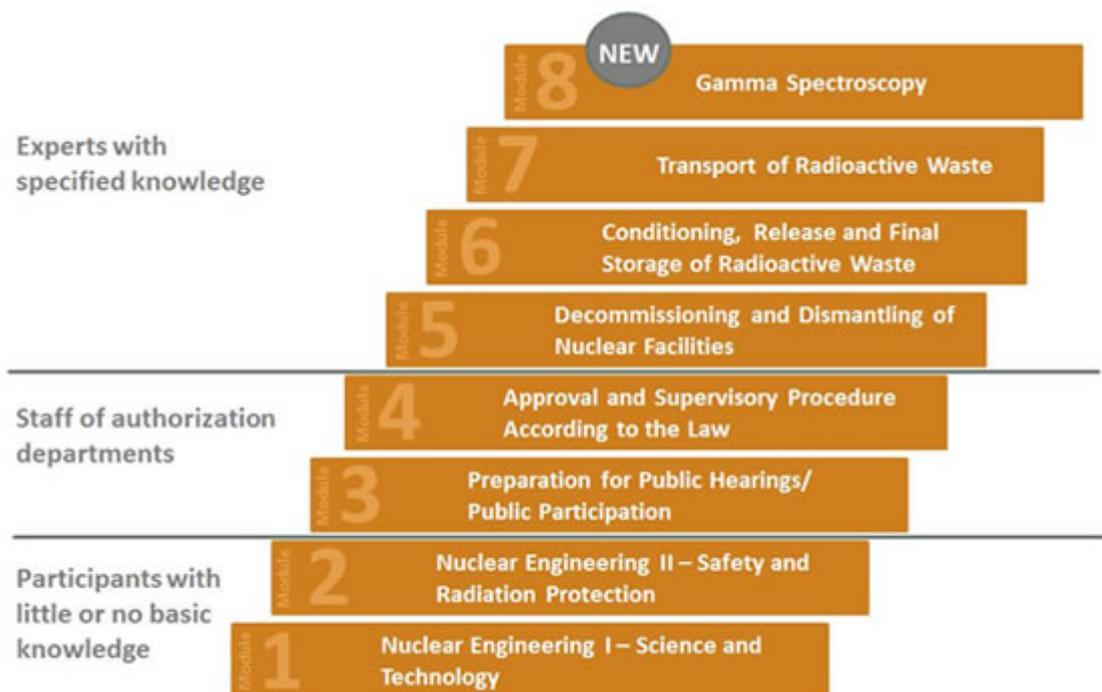


Figure 1: Modular-based training programme of AiNT

Furthermore, AiNT organizes conferences and workshops to bring together experts from science, industry and public authorities. Right now AiNT is preparing the 3rd

*International Conference on Nuclear Decommissioning*, which will take place from the 28 to 30 October 2014, in Essen, Germany. On the 27 October 2014, a *Pre-Conference Workshop* for international guests will be organised, which will provide an “Introduction to German Decommissioning Tasks”. The conference programme is complemented by an exhibition. The conference will be simultaneously translated into English.

For further information, please visit the webpage: [www.icond.de](http://www.icond.de)



*Figure 2: ICOND 2012 in Cologne, Germany.*



*Figure 3: ICOND 2013 at Eurogress in Aachen, Germany.*

AiNT also works close together with the German Nuclear Society (KTG, DAfF). It recognises that working with other associations, thereby benefiting from the input of their different backgrounds, perspectives and expertise, is of mutual benefit to all concerned. To reach this aim it is necessary to carry out networking on an international level, to provide consulting and to carry out project work.

For more information, please visit our web page: [www.nuclear-training.de/en/](http://www.nuclear-training.de/en/)

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<http://www.euronuclear.org/e-news/e-news-43/MELODI.htm>

ENS CORPORATE MEMBERS

## **MELODI, European Radioecology Alliance, NERIS and EURADOS sign a Memorandum of Understanding**

On 5 December 2013, MELODI (Multidisciplinary European Low Dose Initiative), the European Radioecology Alliance (ALLIANCE), NERIS and EURADOS signed a Memorandum of Understanding (MoU) confirming their joint commitment towards the consolidation and implementation of a strategic vision of radiation protection research in Europe. This ceremony took place at the European Commission's headquarters in Brussels, in the presence of Bruno Schmitz, Head of Unit K4 "Fission" at the Directorate General for Research and Innovation.



In recent years, forming networks and stable associations between European research partners in order to promote joint research needs, establish strategic priorities, and develop cooperation in the implementation of research - in particular through a better integration of national R&D programmes within such a holistic European approach - slowly developed.

The overall aim is to address important scientific questions that will shape the further enhancement of radiation protection practices in Europe and beyond, such as, for

example, better understanding individual radio-sensitivity, or the nature of dose/effects relationships for low-dose exposures, which above all requires the enhancement of radiobiology and radio-toxicology knowledge. This knowledge then needs to be transferred and developed into guidelines and operational tools designed to manage issues such as those related to the presence of radioactive contaminants in the environment, the management of radiological emergencies and the remediation of contaminated sites.

For this reason, MELODI, ALLIANCE, NERIS and EURADOS were established. Each focuses on a specific research area: MELODI concentrates on low-dose ionising radiation, ALLIANCE on radioecology, NERIS on emergency preparedness and response, as well as governance of post-accidental situations and EURADOS specialises in dosimetry. The intention to establish a joint research agenda was then taken to the next level, in the first instance by initiatives launched by the European Commission, but also by leading European research institutes. This resulting in the signature of this MoU.

The cooperation between MELODI, ALLIANCE, NERIS and EURADOS was initiated under the EU's *Seventh Framework Programme for Research (FP7)* and particularly within the context of a project called "OPERRA" (Open Project for the European Radiation Research Area). OPERRA aims to establish the necessary structures for managing long-term European research programmes in radiation protection.

The organisations that signed the MoU decided to establish a Joint Radiation Protection Research Roadmap Committee, whose the aim is to coordinate - when necessary - their respective strategic research agendas and priority roadmaps. Further joint working groups will be set to work in areas of common concern for the overall benefit of European radiation protection research. MELODI will be responsible for managing and coordinating things.

The MOU is open to European organisations with an interest in radiation protection research that might like to sign up to it.

MELODI contact: [melodi.secretariat@sckcen.be](mailto:melodi.secretariat@sckcen.be)



*The Memorandum of Understanding between Radioecology ALLIANCE, NERIS, MELODI and EURADOS was signed by (from left to right) Frank Hardeman (ALLIANCE President), Thierry Schneider (NERIS president), Jacques Repussard*

*(MELODI President) and Filip Vanhavere on behalf of Helmut Schuhmacher (EURADOS President) and in the presence of Bruno Schmitz (Head of Unit K4 "Fission" at the Directorate General for Research and Innovation).*

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<http://www.euronuclear.org/e-news/e-news-43/l-3.htm>

ENS CORPORATE MEMBERS

## L-3 MAPPS Wins Tihange 1 Full Scope Simulator Project

MONTREAL, December 10, 2013 – L-3 MAPPS announced today that it has won an order from Electrabel S.A. for the supply of a full-scope operator training simulator for the Tihange 1 nuclear power plant located in the Walloon province of Liège, Belgium. The project will start immediately, and the simulator is expected to enter service in the first quarter of 2016. Tractebel Engineering, the engineering arm of Electrabel, will lead the project.

“L-3 MAPPS is delighted to add Electrabel as a new customer, allowing us to further cement our position in Europe,” said Michael Chatlani, Vice President of Marketing & Sales for L-3 MAPPS Power Systems and Simulation. “For the next two years, we will work diligently to produce another advanced full scope operator training simulator to ensure that Electrabel experiences the same high degree of customer satisfaction that our other customers are accustomed to.”

“Through our extensive diligence, it became clear that L-3 MAPPS had the best track record for the supply of full-scope nuclear plant simulators,” said Michel Deboeck, Tihange 1 Long-term Operation Project Manager for Tractebel Engineering. “We have every confidence that L-3 MAPPS will deliver an excellent product with its Orchid® platform.”

The Tihange 1 full scope simulator, equipped with full replica control room panels, will use L-3’s state-of-the-art graphical simulation PC/Windows-based tools for the plant models and instructor station. All of the plant systems will be simulated in the Orchid simulation environment, including the reactor, nuclear steam supply systems, balance of plant systems, the electrical AC and DC distribution systems, and I&C systems. The electrical grid, including the main generators and transformers, will be modeled with FAST, a product of Tractebel Engineering.



Electrabel is headquartered in Brussels, Belgium, and is owned by GDF SUEZ, a world leader in energy and the environment. The company is active in the production of electricity and in the selling of electricity, natural gas and energy services to retail and business customers. At the end of 2012, Electrabel's generating capacity was 9,879 MW, slightly less than half the total capacity in Belgium (47.9 percent). Electrabel operates seven nuclear reactors, four at Doel and three at Tihange, with a total nuclear capacity of almost 6,000 MW. Tihange 1, located 95 kilometers southeast of Brussels along the Meuse River, is a three-loop pressurized water reactor with an electrical output of 962 MW. The plant was commissioned in 1975 and, on July 4, 2012, the Federal Agency of Nuclear Control decided to extend the operational life of Tihange 1 by ten years until 2025. Tihange 1 is operated by Electrabel and is equally owned by Electrabel and Électricité de France.

L-3 MAPPs, a division of L-3 Marine & Power Systems, has over 30 years of experience in pioneering technological advances in the marine automation field and over 40 years of experience in delivering high-fidelity power plant simulation to leading utilities worldwide. In addition, the company has more than four decades of expertise in supplying plant computer systems for Canadian heavy water reactors. L-3 MAPPs also provides targeted controls and simulation solutions to the space sector. To learn more about L-3 MAPPs, please visit the company's website at [www.L-3com.com/MAPPs](http://www.L-3com.com/MAPPs).

Comprising 25 operating companies, L-3 Marine & Power Systems (L-3 M&PS) is a worldwide leader in maritime automation and control, navigation, communications, dynamic positioning, and power distribution and conditioning for the U.S. Navy, allied foreign navies and commercial customers worldwide. L-3 M&PS also produces full-fidelity simulators for increased operator proficiency, resulting in safe operations for leading international utilities and ship operators. With over 85 locations in 19 countries, L-3 M&PS is a cohesive, global partner with extensive capabilities and a proven track record in delivering the highest level of technology,

service and integration. To learn more about L-3 Marine & Power Systems, please visit the company's website at [www.L-3com.com/MPS](http://www.L-3com.com/MPS).

Headquartered in New York City, L-3 employs approximately 51,000 people worldwide and is a prime contractor in C3ISR (Command, Control, Communications, Intelligence, Surveillance and Reconnaissance) systems, platform and logistics solutions, and national security solutions. L-3 is also a leading provider of a broad range of electronic systems used on military and commercial platforms. The company reported 2012 sales of \$13.1 billion. To learn more about L-3, please visit the company's website at [www.L-3com.com](http://www.L-3com.com).

### **Safe Harbor Statement Under the Private Securities Litigation Reform Act of 1995**

Except for historical information contained herein, the matters set forth in this news release are forward-looking statements. Statements that are predictive in nature, that depend upon or refer to events or conditions or that include words such as "expects," "anticipates," "intends," "plans," "believes," "estimates," "will," "could" and similar expressions are forward-looking statements. The forward-looking statements set forth above involve a number of risks and uncertainties that could cause actual results to differ materially from any such statement, including the risks and uncertainties discussed in the company's Safe Harbor Compliance Statement for Forward-Looking Statements included in the company's recent filings, including Forms 10-K and 10-Q, with the Securities and Exchange Commission. The forward-looking statements speak only as of the date made, and the company undertakes no obligation to update these forward-looking statements.

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<http://www.euronuclear.org/e-news/e-news-43/sck-cen.htm>

ENS CORPORATE MEMBERS

## **CERN and SCK•CEN join forces to develop particle accelerators**

The Belgian Nuclear Research Centre (SCK•CEN) and the European Organization for Nuclear Research (CERN) are going to work together intensively to develop high-intensity particle accelerators. The two research institutions signed a cooperation agreement on this subject in Geneva on 28 October 2013.

SCK•CEN has been involved in CERN research projects for a long time, as have various Belgian universities. The two research institutions have now decided to collaborate specifically in the field of particle accelerator technology. In practical terms this involves a particle accelerator which SCK•CEN is developing for its MYRRHA project and the HIE-ISOLDE infrastructure at CERN. MYRRHA is a

multifunctional research infrastructure made up of a sub-critical reactor driven by a particle accelerator.

CERN in Geneva is a world authority in the field of accelerators. The Study Centre for Nuclear Energy has been able to build up a great deal of expertise together with numerous Belgian and European partners in the area of accelerator technology, in particular when it comes to improving the reliability of the proton bundle.

The two research institutions are going to share their knowledge and experience in the area of research into high-intensity linear accelerators and the development of high-capacity targets for the production of high-energy neutrons and radio isotopes for HIE-ISOLDE and ISOL@MYRRHA.

ISOL@MYRRHA is a research infrastructure that is to be developed within the context of the MYRRHA project, which will be deployed for an entirely new class of experiments in fundamental interactions, nuclear physics, atomic physics, the physics of solid matter, and biological and medical applications.

The two institutions will exchange researchers under the terms of this cooperation agreement and SCK•CEN will be able to make use of CERN's infrastructure.



*CERN accelerator* © CERN

<http://www.euronuclear.org/e-news/e-news-43/linn.htm>

ENS CORPORATE MEMBERS

## Protective gas chamber furnaces for heat treatment



*KS-3-160-S Sonder*

### **Linn High Therm, leading manufacturer of industrial and lab furnaces since 1969, presents:**

Protective gas chamber furnaces with gastight muffle for heat treatment processes under protective gas atmosphere up to 1050°C. Useful chamber 60 - 480 l and according to customer specification. For soldering and annealing processes of workpieces, scaling free treatment of sensitive steel qualities, debinding and sintering processes, oxidation or reduction of surfaces, pyrolysis and many more applications, under controlled atmosphere.

A huge selection of **options** enables universal application:

- Inconel muffle for a maximum operating temperature up to 1150 °C
- 3-zone-control
- gas feeding, burning-off device and flame supervision
- safety package (H<sub>2</sub>-operation)
- gas ventilation

- fast cooling
- gas quenching with heat exchanger
- vacuum up to 800 °C



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<http://www.euronuclear.org/e-news/e-news-43/ansaldo.htm>

ENS CORPORATE MEMBERS

## **FALCON, a Consortium to build a Gen IV Lead Fast Reactor Demo in Romania**

The FALCON (Fostering ALfred CONstruction) Consortium Agreement was signed on December 18<sup>th</sup> 2013 in Bucharest, at a ceremony in the presence of Romanian Energy Minister Constantin Nita, by the legal representatives of the Consortium members: Ansaldo Nucleare (Roberto Adinolfi), ENEA (Giovanni Lelli) and Nuclear Research Institute “ICN” (Constantin Paunoiu). This represents the first step towards the construction of a demonstrator for the Generation IV liquid lead-cooled nuclear fast reactor in Romania. The site selected by the Romanian Authorities is Mioveni, near Pitesti in Southern Romania.

ALFRED, Advanced Lead Fast Reactor European Demonstrator - the name given to this pilot plant - represents the solution that has emerged from a European research effort, to improve the safety of next generation nuclear power plants. The main goal is to maintain the nuclear energy source as an important contributor to the development of a low-carbon emission energy system. It is the result of a joint European effort led by Italian industry, universities and research centers which began in the 1990s, with the goal of establishing a new category of high safety fission reactors based on passive safety systems concepts.

Until now the design of the ALFRED demonstrator has been developed in the framework of the EURATOM 7<sup>th</sup> Framework Programme, with Ansaldo Nucleare leading the work on system integration and ENEA on technology development, while the Italian University system has organized training activities for students who have been given the opportunity to learn by playing an active role in the project. The Romanian Nuclear Research Institute ICN has been participating in design work on

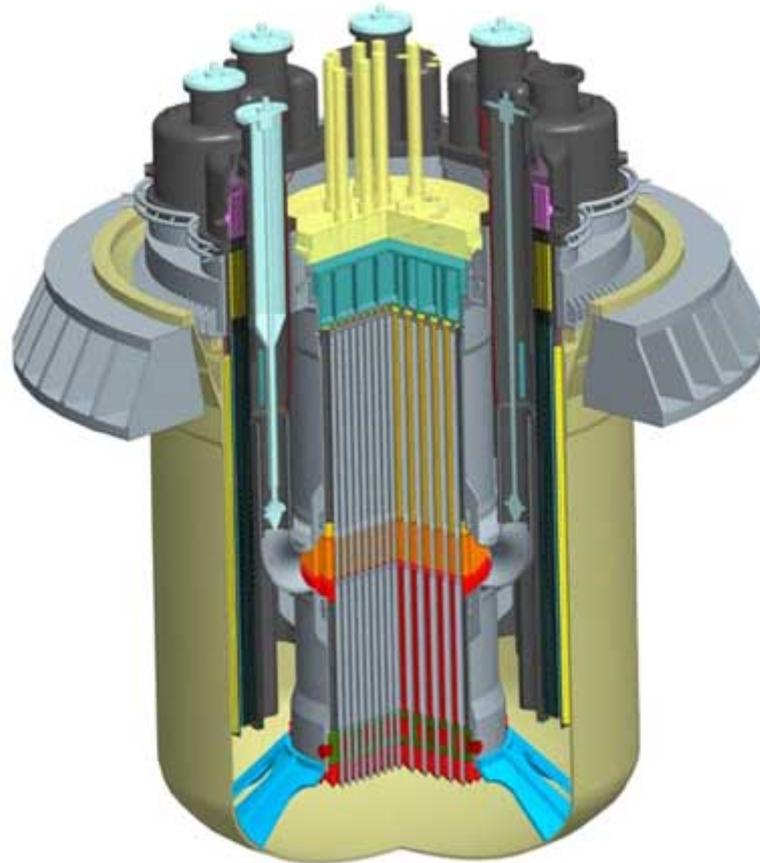
ALFRED right from the outset, thus contributing to the engineering of the reactor core and promoting preliminary activities in Romania needed to obtain approval for the project.

ALFRED is one of the projects supported by the European Sustainable Nuclear Industrial Initiative (ESNII), which brings together industry and research partners in the development of so-called Generation IV Fast Neutron Reactor technology, as part of the EU's Strategic Energy Technology Plan (SET-Plan). ESNII was set up under the umbrella of the Sustainable Nuclear Energy Technology Platform (SNETP), formed in 2007 and brings together more than 90 stakeholders involved in nuclear fission.

The Consortium, set up by the above first three signatories, will be extended to include other European organizations that have already expressed their interest. It will use an 'in kind' mechanisms in order to procure the resources needed to complete the first technology development and design phase. The consortium aims to obtain funding for the reactor construction phase through EU resources allocated to R&D infrastructure (the so-called infra-structural or cohesion funds) in new member states, as well as loans from the European Investment Bank.

The main motivation for the development of a Generation IV lead-cooled fast reactor is based on the sustainability of the nuclear energy source in the long term and in the very high level of safety of reactors design thanks to the intrinsic features of the coolant. The sustainability of the fuel cycle is achieved by the implementation of the so-called closed fuel cycle: the energy content of fissile material is used efficiently while used fuel is recycled inside the reactor, drastically reducing the amount of long-life radioactive waste produced and assuring long term fuel availability. As far as safety is concerned, the lead coolant presents several advantages amongst traditional coolants: the nuclear characteristics of lead with low absorption cross sections and high scattering allows the designers to largely space the fuel pins, reducing the pressure drop of the system and enhancing the natural circulation of the primary side. With the typical configuration of the primary system allocated in a non-pressurized large pool (lead boiling point is above 1700 °C) the introduction of a passive safety system is strongly favored and the absence of chemical interaction between lead and water permits to install steam generators directly in the primary pool with important simplification of the system, able to produce important reduction on the total cost of construction and maintenance.

Given the increased interest at international level in lead technologies, the FALCON Agreement will be open to international partners as soon as the preparatory activities (scheduled to last 18 months) will be completed. The realization of ALFRED demonstrator will bring and maintain the European organizations to the cutting edge of nuclear fission research in the coming decades.



ALFRED

<http://www.euronuclear.org/e-news/e-news-43/JRC.htm>

ENS WORLD NEWS NEWS

## **Energy – Transparency Centre of Knowledge (E-TRACK) *Facilitating Public Participation in Energy Policy Implementation***

The 'Energy – Transparency Centre of Knowledge' (E-TRACK) is a joint initiative agreed between the EC's Directorate General for Energy (DG ENER) and the Joint Research Centre (JRC) for the promotion and enhancement of public participation in the implementation of energy policies. It results from the recognition of the need to offer a reliable source of public information on matters relating to energy policy implementation. The objective of E-TRACK is to become a central point of reference for monitoring, disseminating and sharing information on good practices of public participation in energy policy implementation across the EU.

E-TRACK will be led by a Steering Group that will bring together representatives from the JRC and DG ENER (with the support of associated stakeholders). The

Institute for Energy and Transport (IET) of the JRC provides the operational support and day-to-day management and infrastructure needed for the knowledge centre. E-TRACK will conduct several projects on transparency and public participation in multiple energy sources.

Each project will relate to a network of actors from civil society, national and sub-national authorities, pertinent international organizations, regulatory or supervisory bodies and industrial and commercial interests. Each Project Network will be formally represented by an Advisory Group, which will provide general guidance for the entire project. Projects' activities will include analyses, the development and tendering of specific studies, the organization of workshops, the coordination of contacts and the development and maintenance of IT tools.

The first project of E-TRACK addresses public participation in the field of Radioactive Waste Management (RWM) and constitutes a pilot project for the whole E-TRACK initiative. RWM is well suited as a pilot case, given the significant number of research projects available and the legally-binding requirements for transparency of the *Council Directive 2011/70/EURATOM on spent fuel and radioactive waste*. In view of the Directive's obligation for Member States (MSs) to report on the implementation of public participation in their National Programmes for RWM, the EC considers it useful to provide steady and continuous support in the very near future.

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<http://www.euronuclear.org/e-news/e-news-43/uk.htm>

## **UK University to lead £8 million (€9.6 million) collaborative nuclear waste research programme**

*At the beginning of January 2014 it was announced that the University of Leeds, in England, is to lead a consortium of 10 UK universities (Leeds, Birmingham, Bristol, Imperial College London, Lancaster, Loughborough, Manchester, Sheffield, Strathclyde and University College London) in a national research programme looking at ways of dealing with the UK's nuclear waste. The project, which is called DISTINCTIVE, is funded by the Engineering and Physical Sciences Research Council (EPSRC) and will start in February 2014. The UK's National Nuclear Laboratory (NNL), the Nuclear Decommissioning Authority (NDA) and Sellafield Ltd. are partners in the project together with the ten aforementioned universities.*

*For further details about this ground-breaking collaborative research project are available via the following links:*

[gow.epsrc.ac.uk/NGBOViewGrant.aspx?GrantRef=EP/L014041/1](http://gow.epsrc.ac.uk/NGBOViewGrant.aspx?GrantRef=EP/L014041/1)

[www.nda.gov.uk/news/distinctive.cfm](http://www.nda.gov.uk/news/distinctive.cfm)

[www.nnl.co.uk/news-media-centre/collaborative-research-takes-distinctive-approach.aspx](http://www.nnl.co.uk/news-media-centre/collaborative-research-takes-distinctive-approach.aspx)

[www.sellafieldsites.com/2014/01/collaborative-research-takes-distinctive-approach/](http://www.sellafieldsites.com/2014/01/collaborative-research-takes-distinctive-approach/)

*ENS NEWS hopes to cover further news on the progress with this project in future editions. Watch this space! (Editor-in-Chief)*

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<http://www.euronuclear.org/e-news/e-news-43/other-conferences.htm>

## ENS sponsored conferences



### SFEN Convention “Nuclear Power Plants Long Term Operation”

19 - 20 March 2014

Paris, France

[more](#)

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### 15th International Symposium on REACTOR DOSIMETRY

18 - 23 May 2014

Aix-en-Provence

[more](#)

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## 10th Int. Conference on Nuclear Option in Countries with Small and Medium Electricity Grid

1- 4 June 2014  
Zadar, Croatia  
[more](#)

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## NUWCEM 2014

**2nd International Symposium on Cement-based Materials for Nuclear Wastes**  
3 - 6 June 2014  
Avignon, Popes' Palace, France  
[more](#)

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## PBNC-2014

24 - 28 August 2014  
Vancouver, Canada  
[more](#)

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## **TINCE 2014 “Conference on Technological Innovations in Nuclear Civil Engineering**

1 - 4 September 2014  
Paris, France  
[more](#)

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## **WRFPM2014**

14 - 14 September 2014  
Sendai, Japan  
[more](#)

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## **Fontevraud 8**

**Contribution of Materials Investigations and Operating Experience to LWRs' Safety, Performance and Reliability**  
14 - 18 September 2014  
Avignon, Popes' Palace, France  
[more](#)

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## PHYSOR 2014

28 September - 3 October 2014

Kyoto, Japan

[more](#)



## NPC 2014 SAPPORO

26 - 31 October 2014

Sapporo, Japan

[more](#)

<http://www.euronuclear.org/e-news/e-news-43/Member-Societies.htm>

## MEMBER SOCIETIES

### Member Societies

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**Austrian Nuclear Society**

<http://www.oektg.at>

**Bulgarian Nuclear Society**

<http://www.bgns.bg>

**Czech Nuclear Society**

<http://www.csvts.cz/cns>

**French Nuclear Energy Society (SFEN)**

<http://www.sfen.org>

**Hungarian Nuclear Society**

<http://www.nuklearis.hu>

**Italian Nuclear Association**

<http://www.assonucleare.it>

E-mail: [info@assonucleare.it](mailto:info@assonucleare.it)

**Netherlands Nuclear Society**

<http://www.kerntechniek.nl>

**Nuclear Society of Russia**

E-mail: [agagarin@kia.ru](mailto:agagarin@kia.ru)

membership on hold

**Nuclear Society of Slovenia**

<http://www.djs.si/>

**Romanian Nuclear Energy Association (AREN)**

<http://www.aren.ro>

**Spanish Nuclear Society**

<http://www.sne.es>

**Belgian Nuclear Society**

<http://www.bnsorg.be>

**Croatian Nuclear Society**

<http://www.nuklearno-drustvo.hr>

**Finnish Nuclear Society**

<http://www.ats-fns.fi>

**German Nuclear Society (KTG)**

<http://www.ktg.org>

**The Israel Nuclear Society**

E-mail: [meins@tx.technion.ac.il](mailto:meins@tx.technion.ac.il)

**Lithuanian Nuclear Energy Association**

<http://www.lbea.lt>

**The Nuclear Institute**

<http://www.nuclearinst.com>

**Nuclear Society of Serbia**

<http://nss.vin.bg.ac.yu/>

**Polish Nuclear Society**

<http://www.nuclear.pl>

**Slovak Nuclear Society**

<http://www.snus.sk>

**Swedish Nuclear Society**

<http://www.karnteknik.se>

Swiss Nuclear Society  
<http://www.sns-online.ch>

<http://www.euronuclear.org/e-news/e-news-43/Corporate-Members.htm>

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<http://www.euronuclear.org/e-news/e-news-43/editorial.htm>

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