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SAFETY EXPERTISE: WHEN THE DEMAND GROWS

Review of the main themes discussed at the EUROSAFE Forum held in Paris in November 2008

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The papers referred to in the seminar section are available at www.eurosafe-forum.org

Lothar Hahn and Jacques Repussard

Technical Safety Organisations (TSO's) are more and more confronted with scientific and technical demands from other players both domestically and internationally. Unquestionably, their first commitment is to support the safety authorities whilst promoting safety everywhere by disseminating knowledge and experience. Therefore, the 2008 EUROSAFE Forum held in Paris was dedicated to listening to the views and demands expressed by representatives from regulators, industrial companies, stakeholder associations, international organisations as well as the European Commission, and finding together balanced answers to all the questions.

The Forum came up with different perspectives, but also with a certain degree of consensus on the most important issues, i.e. competence, independence and transparency, networking and cooperation.

Regarding competence, TSOs need, in order to fulfil their duties towards their respective national safety authorities – sometimes in a highly responsive manner, if an event occurs –, to assess and update continuously their own skills by carrying out proper research activities and providing their own staff with significant education and training.

Concerning independence and transparency, ETSON, the European TSO network, synthesised its views as follows in its code of ethics: *"If a TSO delivers services to a domestic or foreign licensee, it does so in full transparency with respect to the licensee's nuclear safety authority, and is able to demonstrate that conflicts of interest are avoided."* This clearly implies that the independence of a TSO's technical judgement is not negotiable, not questionable, and that a TSO cannot work on the same matter and with the same personnel for the regulator and for the industry.

On the subject of networking and international cooperation, it is obvious that pooling means and sharing results are becoming increasingly important for several reasons, to begin with the very high cost of building and running experimental facilities, of developing computer codes or of setting up education and training programmes. Another reason is the necessity to exchange best practices in order to raise the safety level in each country and to harmonise safety approaches at this highest possible level.

We are pleased to invite you to making your own judgement on these issues and we wish you pleasant reading. ●

Lothar Hahn and Jacques Repussard

Happy birthday EUROSAFE!

2008 marks the 10th anniversary of the foundation of EUROSAFE by GRS and IRSN, as well as the integration of two new members – UJV, the Czech TSO, and VTT, its Finnish counterpart – in ETSON, the European TSO network. This association is proving valuable to meet the challenges TSOs will be faced with in the future.

The ETSON members just after the signature of the agreement whereby UJV and VTT join the network.

Welcoming a floor of more than 400 participants in Paris, Benoît De Boeck, General Manager of Bel V, Lothar Hahn, Technical and Scientific Director of GRS, Aleš John, Director General of UJV, Jacques Repussard, Director General of IRSN and Seppo Vuori, Chief Research Scientist at VTT stressed the importance of increasingly closer cooperation among TSOs: "*It was decided to dedicate this year's Forum to the challenge associated with the development of nuclear power capacities in 'ancient' countries as well as in 'new' nuclear countries,*" highlighted Jacques Repussard. "*In this context, we all observe that the knowledge of design, manufacture, licensing, commission, operation and overseeing the operation of nuclear power plants is, to a large extent, in the hands of nuclear engineers of retirement age,*" Lothar Hahn interjected. "*To preserve this knowledge and transfer it into the hands of the next generation is one of the most challenging topics today in the nuclear community.*"

Stimulating interaction

Tackling the reality of markets, Benoît De Boeck highlighted the progressive fade out of borders, as vendors, utilities and safety authorities interact more and more actively: "*The need for a harmonisation of safety requirements and standardisation of licensing criteria is being felt increasingly strongly. There is also a need to harmonise the way safety assessments are performed. Once a safety case has been assessed and accepted in one country, why could those conclusions not apply elsewhere? The European TSOs are currently helping to answer this question by developing technical assessment guides that could be applied throughout Europe.*" A view totally supported by the new members of ETSON: UJV and VTT. ■

PRESENTATIONS

Teachings from the mirror

Having a regulator, an EC representative, an international organisation, a vendor and an operator reflect their respective perception of a TSO's role is definitely a rare and precious opportunity. The participants in the 2008 EUROSAFE Forum's plenary session – in particular those working for a TSO – seized this opportunity to get a deeper understanding of the challenges associated with meeting the demand for scientific and technical knowledge and experience in the coming years. What are the mirror's teachings?

Technical 'support' organisation or technical 'safety' organisation? A regulator's view

As the first speaker to address the floor, Wolfgang Renneberg, the Director General for Safety of Nuclear Installations, Radiological Protection, Nuclear Fuel Cycle of the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety focused his presentation on the independence of TSOs. *"Is there room for independent work by TSOs for the industry, the European Commission, the emerging countries and so on?"* asked Mr. Renneberg. *"Any regulator and regulator's TSO has to reject expectations of the industry as far as this could jeopardise its objectivity and its judgement as a regulator's support organisation. Moreover, a technical support and safety organisation shall not engage in politics; therefore any interactions of the TSO with political institutions must be restricted to technical cooperation. In this respect, since the European Commission is responsible and engaged in promoting nuclear energy, one has to ask about the nature of cooperation between an independent regulator's support organisation and the Commission."* For the same reason, Mr. Renneberg considers cooperation with emerging countries has to be debated on the political level, based on the criteria that should be applied in order to decide whether or not to help and support countries wishing to develop a nuclear safety infrastructure. *"The role of TSOs is to exchange international knowledge and experience worldwide, to provide expertise to further improve nuclear safety, to create new ideas and help the*

Wolfgang Renneberg

Director General, Safety of Nuclear Installations, Radiological Protection, Nuclear Fuel Cycle. German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety

« I perceive a TSO like GRS as the technical support organisation of the national regulatory body. I am, however, aware that it has become a global player acting on international level in the nuclear field. When it comes to define the framework of activities of a TSO, both aspects have to be considered. TSO activities must be in line with given political decisions. For instance, if international agencies such as IAEA ask for support to be provided by a TSO, or if developing countries ask for assistance to develop a nuclear power programme, it must be ensured that the support provided by a TSO does not interfere with international policies. There is an ongoing political debate to define criteria to be fulfilled by countries requesting support in nuclear safety and security issues. In this context, a TSO must not misuse its relationships with national and international political institutions and establish itself as a political player. Furthermore, it is not the task of a TSO to harmonise nuclear regulation including regulatory practice or nuclear safety standards. This is the exclusive task of the regulator. Another task of the regulator is to keep the TSO independent from industry (operators, utilities, manufacturers) and thus to avoid potential conflicts of interest. International cooperation of TSOs should focus on the exchange of technical and scientific experience as an essential part of the operational experience feedback (OEF) and thus provide an excellent tool for the increase of expertise. Convergence/ harmonisation should not be practised as an end in itself. What we need is the diversity of views and approaches to keep transparency and the power for innovation. If, however, convergence/ harmonisation means to improve learning from each other by exchanging views, practices and experience, it is indispensable. »

regulators to realise them on a national level and internationally too," Wolfgang Renneberg concluded.

The TSOs' role in transferring methods and ways of approaching nuclear safety

Reminding the floor of the contribution of nuclear power to the security of power supply in the EU, the Head of Unit A4 at the EC's Aid Cooperation Office, Jean-Paul Joulia, evidenced the importance of nuclear safety with the creation of a high level group made up of senior regulators primarily tasked with nuclear safety and waste management. *"I want to stress the importance of three elements: safety, security and safeguards,"* declared Mr. Joulia. *"There are a lot of demands for nuclear safety expertise and the TSOs are meeting some of these needs for expertise. On the international arena, a major change in the last two years has been the enlargement of our policy and activities towards third countries outside our traditional partners, such as Russia and the Ukraine. In the regulatory sector, TSOs have been active in transferring methods and ways of approaching nuclear safety with a view to fostering the convergence of nuclear safety practices in Europe. The EC has a great interest in this convergence and in transferring those methodologies to the countries under certain conditions."* Pointing out the work performed by EU TSOs in cooperation with agencies, regulatory bodies and TSOs in the Ukraine, Russia and Armenia, Mr. Joulia acknowledged the results obtained, e.g. the enhancement of safety, the opening of channels of communication and the exchange of information. *"We have begun to work with Jordan and Egypt,"* he indicated. *"Morocco has also shown a certain interest and we will decide on what to do about that in 2009. Yet more countries in South East Asia as well as Brazil have expressed an interest primarily for the regulatory framework, capacity building and safeguards. We have a solid framework to monitor the overall process of evaluation through the regulatory advisory management group. Still, capacity building will be required and the TSOs*

Hall of the main building of Cité universitaire internationale where the EUROSAFE Forum 2008 was hosted.

have a role to play. In this respect, networking of new capacities in training should be promoted."

Knowledge, research and training: the triple role of TSOs

As the Director of the Division of Nuclear Installations' Safety at IAEA, Philippe Jamet highlighted notably the importance of TSOs in the global nuclear safety regime as well as the Agency's views on the challenges facing TSOs in the next few years. *"Regulatory decisions rely greatly on scientific bases and this is simply due to the fact that nuclear installations are complicated, technical things and this presupposes a large technical and scientific foundation to provide good regulation,"* Mr. Jamet recalled. *"If we look around the world, we see that regulators always need support in some areas from external and scientific organisations or experts, and that is the definition of a TSO."* Many areas are concerned, such as safety assessment, operational experience feedback, emergency preparedness and response, safety studies and research as well as laboratory activities like dosimetry and field measurements, testing and calibration and inspection. *"TSOs also play a significant role in the global nuclear safety regime, i.e. essentially the willingness of the different countries to share and to perform international cooperation in nuclear safety as well as building common references,"* he emphasised. *"I would say TSOs are important in this global nuclear network for three essential reasons: they are one of the main repositories of technical and scientific knowledge, they are a crucial organisation in identifying safety research needs and in creating necessary new knowledge and they are key players in addressing and identifying educational and training needs."*

Concluding on the foreseeable challenges for the TSOs in the coming years, Phillipe Jamet mentioned:

- the responsibility of the TSOs in deriving the knowledge that will be necessary for the safety of new technologies considered for nuclear power plants and other installations,
- the increased competition to get resources to perform e.g. studies, assessments and safety research,
- the standardisation of requirements and safety evaluations – a key benefit for safety,
- the support to countries embarking on a nuclear power programme in building up the necessary safety infrastructure so that they can fulfil their responsibilities.

Aleš John

Chairman of the Board, Nuclear Research Institute Řež plc

« I was very glad to be part of the EUROSAFE Forum, as it gave me the opportunity to sign with my colleagues Benoît de Boek, Lothar Hahn, Jacques Repussard and Seppo Vuori the agreement by which UJV [1] joined ETSON, the European Technical Safety Organisation Network. For a TSO like UJV, becoming a member of ETSON has many advantages. First of all, this kind of club of TSOs gives us visibility and improves our ranking to the eyes of the regulatory authorities. Then, it enables easier information exchanges on our respective programmes, on the projects of our regulatory authorities or on methodological aspects. Thirdly, the addresses and debates during the Forum placed emphasis on the necessity for TSOs to perform investigations and assessments independently from any third party. In this respect, being member of ETSON allows UJV to ask a fellow TSO to perform some assessment on our behalf and conversely. Last but not the least, in the future, we envisage organising a Summer School in the Czech Republic, just like the one in Munich in August 2008, as it is a very efficient way for young people to obtain a maximum of information in a minimum of time. »

[1] Ústav Jaderného Výzkumu Řež a.s. / Nuclear Research Institute Řež plc

Exchange of views between Pekka Pyy, licensing manager for Olkiluoto 4 at TVO (Finland), and Peter Storey, head of Research & External Contracting at HSE (United Kingdom).

A plea for cooperation of TSOs and mutual acknowledgement of licences

"The nuclear industry is facing a nuclear renaissance scenario," declared Manfred Erve, AREVA's Senior Vice President, Products and Technology. *"This can be seen in terms of taking the installed nuclear generating capacity as an indicator. From today's capacity, we will have an increase according to the different scenarios to 440 GWe or even 740 GWe. The construction of nuclear power plants will be all the more needed because, in the meantime, there will be the decommissioning of reactors that will have reached their theoretical end of life. For these reasons, the future demand in safety assessment and safety expertise that we expect from TSOs lies in this field: plant extension, power operating and new builds."* Pointing out the evolution of the supply environment that resulted in the existence of only a few vendors working on a global, international basis with few standardised products, Mr. Erve advocated: *"Standardisation is required for economical reasons, for the vendor, for the utility and to change the design from country to country would be a costly effort and also for safety reasons because, to have a standard design accepted by several licensing authorities or regulators is of course a tremendous advantage. One-step licensing would be based on the model now used in the US to reach a combined construction and operation licence in one step. In this respect, cooperation of international TSOs and mutual acceptance and acknowledgement of licences are obviously desirable."*

"Maximising efficiency in the licensing process for new builds"

As the Head of International Relationships at Electricité de France's Engineering Production Division (EDF-DPI), Michel Debes expressed the expectations of an operator with a major nuclear reactor fleet, emphasising the importance of the TSO's role throughout the process that governs licensing, regulatory bodies, rules and procedures. *"For the operator,"* declared Mr. Debes, *"the significance of the role and competence of the regulatory body and its TSO in the establishment of an efficient overall safety regime is essential, notably in the long-term operation and efficiency of a nuclear power plant and also for new builds. Secondly, it is critical to develop an efficient relationship with a regulatory body and TSOs to help the operator fulfil its prime safety responsibility while maintaining competitiveness. My third point is that it is imperative to have efficient working procedures between the regulatory body, TSOs and the responsible operator. It is essential to have a clear working framework for efficient management and planning of the reviews and resolutions on safety issues. Fourthly, it is meaningful to develop good mutual understanding and reliable relations between operators and TSOs based on mutual recognition of their respective competences, roles and responsibilities."* After underlining the importance for TSOs to assess experience and integrate feedback in designs of future nuclear power plants, maintain a knowledgeable and adequate assessment basis and ensure continuity in all analyses while focusing on important safety issues, Michel Debes concluded with this consideration for the future: *"Harmonisation of rules and condensation of new designs should be conducive to alleviating the regulatory safety review workload in the standardisation of increasing demand for safety expertise by sharing analyses and with the goal of maximising efficiency in the licensing process for new builds."* ■

PANEL DISCUSSION

Crosswords: featuring the ideal TSO

In the context of an increasing demand for nuclear safety expertise, what do third parties expect from TSOs? This was the central topic of the debate organised in the framework of the EUROSAFE Forum held in Paris on 3rd and 4th November 2008. The discussions, moderated by Marie-Dominique Montel, a TV and radio journalist, allowed representatives from the German TSO, from a Finnish utility, from the British regulator as well as from a French stakeholder association to exchange views on a series of issues such as the TSOs' competence, independence and transparency. These three qualities, they say, are the pillars of trust in TSOs.

Competence: should TSOs contribute to enhancing the skills of third parties?

The very first expectation of regulators, stakeholders and the industry regarding TSOs is a high level of skills, as explains Peter Storey: *"Maintaining the technical capabilities is absolutely essential for the TSO. I am sure the UK has the same problem that many other countries have and that is that we are very short of people."* In this context, Peter asks: *"Is breeding ground for new scientists, new engineers to come into the industry a role TSOs either do play or could possibly play in the future?"* For Lothar Hahn, the answer is positive: *"I think this is a role for the*

The panellists

Lothar Hahn
Technical and Scientific Director, GRS, Germany

Pekka Pyy
Safety advisor, licensing manager for Olkiluoto 4,
Teollisuuden Voima OY (TVO), Finland

Monique Sené
Vice-chairperson, National Association of Local Information Commissions (ANCLI), France

Peter Storey
Head of Research & External Contracting, Nuclear Directorate, Division 6F
Health and Safety Executive, United Kingdom

Monique Sené

Vice-chairperson, National Association of Local Information Commissions (ANCLI)

« The French stakeholder groups named Local Information Commissions (CLI) enjoy a legal status and public funding. They are progressively created at each nuclear site across the country, with the support of the safety authority, to monitor the safety assessment of nuclear facilities as well as the issues pertaining to health and the environment. To do so, CLI members need to raise their level of scientific and technical knowledge. In this respect, a TSO like IRSN has a major part to play through its participation in the so-called Pluralist Expert Groups, set up by the regulator to provide pluralistic assessment of such issues as e.g. the environmental status of closed uranium mines in France. Another way to gain independent expertise capability is to pool the knowledge and experience gained by stakeholders across Europe. This is what we strive for with the creation of Eurocli, the European Association of Local Information Commissions, set up in 2007 to exchange information, just as regulators do within WENRA or TSOs within ETSON. But there is still a long way to go, as not every country has stakeholder groups to monitor its nuclear sites. »

TSOs. At GRS, for instance, we have hired more than 100 people in the past seven years. Together with IRSN and Bel V, our entire staff number together is about 2,000 experts. This benefits us as well as authorities, the industry, regulators and so forth. For instance, one part of the agreements we are now setting with different universities in Germany is pertaining to mutual help in education. A TSO can offer a more practical part of education whereas the university mostly deals with the theoretical part, the basic part. Other possibilities for cooperation are common projects; there is research needed in several areas and that can be done in conjunction with universities." An issue for TSOs, technical skills are one of the major problems for the stakeholder associations, according to Monique Sené who claims: "*Beyond getting information, it is very difficult for us to find multi-disciplinary competences outside the nuclear community. In order to remedy this problem, we decided to participate in pluralist expert groups tasked with, e.g. analysing the waste from La Hague spent-fuel reprocessing plant or assessing the residual risk associated with closed-down uranium mines in France. It helped us build up our expertise in a multi-disciplinary group.*"

Does independence entail conflict of interest?

Is the relationship between regulators and TSOs built on links of dependence comparable to those between parents and children or did TSOs already emancipate? "*I think it is the case,*" Lothar Hahn claims. "*We have our duty to support the regulator and this is the most important part of our work. Alongside this, we have other duties to maintain and evaluate our competence. We have to educate our staff and even the staff of the authorities and others. We have to create research programmes and research activities. We have to promote international cooperation by networking… All these duties have a benefit for the TSO but also for the authority and for other parts of the community. Beyond the link to the regulator, I think independence is one of the most complicated elements for the TSOs. They cannot work for the regulator and for the industry on the same subject. This is normally not allowed, but for different subjects, though, why not? The code of ethics for the TSO network tackles this issue very clearly, so the regulatory authorities are fully informed, and TSOs are able to demonstrate that conflicts of interest are avoided.*" Peter Storey largely shares this view, from a regulator's perspective: "*When we, at HSE, use technical organisations to support us on, for instance, assessing regulatory submissions, it is absolutely essential that they have the experience of having worked for the industry and having that knowledge and understanding. Without it, they are useless to us. They acquire such knowledge not only by having worked for the regulator before, but mostly from having worked for a licensee for producing safety cases or having some part in production. Having this said, it is quite clear that, when TSOs have worked on a particular safety submission, they cannot advise us on the same submission. So as long as there is a very clear definition about conflict of interest then we do not see a problem with this.*"

Adding to Peter's statement, Pekka Pyy invites the audience to consider the diversity of situations designated by the term 'TSO': "*I think one should understand that there are very different TSOs. In Finland for instance, VTT, the nuclear TSO, works with both the regulatory body and the industry. The second thing is that STUK, the nuclear safety authority, resembles what would be termed 'TSO' in several countries, as it is a very technically competent regulator. In a small coun-*

André-Claude Lacoste

Chairman, French Nuclear Safety Authority

« I think TSOs and regulators alike are increasingly aware of the need to intensify international cooperation, if they want to carry out efficiently their respective task in their own country. This is the sense of what safety authorities are doing at WENRA, the Western European Nuclear Regulators' Association, and TSOs at ETSON, the European Technical Safety Organisations' Network. Both are working on the development of a convergent approach to nuclear safety in Europe. This harmonised view is still far from being totally formulated, but things are well in progress, for instance with the reference levels issued by WENRA or the technical guidelines elaborated by the TSOs within EUROSAFE. I believe regulators and TSOs should jointly promote such initiatives, since they are the basis of this European approach. To me, taking account of human and organisational factors in their work is a major issue for TSOs: focussing on technical aspects of nuclear safety is by far not sufficient to enable significant progress in the future. In this regard, I think TSOs are right when they give special consideration to personnel training, individual and collective behaviours, quality, management and leadership. »

try like Finland, with limited resources, why should we exclude a possibility to give motivated and skilful people who are working for the TSO some future prospects of working on practical projects and problems with the licensee and with the regulatory body? At TVO, the nuclear power company I work for, if we really need top-level skills and knowledge in a particular area, we use to contact VTT in cases they are not working with the regulatory body in the same area."

Transparency: the contradictory rationales of safety and security

Transparency is a duty in the relationship between TSOs and regulators. It is also increasingly understood by stakeholders and by the public at large as a condition for trusting technical safety organisations, Lothar Hahn stresses: *"From discussions in Germany, very often we get this assertion:* "You are the technical organisation, you must know what is true. We do not trust the industry from reasons we know about, we sometimes do not even trust the authorities because they may be politically influenced". *On one hand, we have of course to follow some rules to keep information secret, because it is part of our job. On the other hand, I think the public has a right to be informed and it is yet to be discussed who will inform the public. Is it the TSO's job? Is it the authority's job? We are talking about transparency and public information is part of transparency."* The confidentiality of information as part of nuclear security inspires Peter Storey to this comment: *"I think one of the key issues for a regulator, but also for those who work for the regulator, is to have the ability to keep the information secure within their organisations. This is absolutely essential; nevertheless, it is possible to be more informative to the public. At HSE, for instance, we started the assessment process of the generic design of future installations, and the very first stage was to have some assessments done on the four designs we were looking at. That generated almost 50 reports and every one of those 50 reports has been put on our website for the public to access. We feel that is very important for it to be relayed to them in a way that they can understand the conclusions and consequences those reports have come up with."*

For stakeholder associations, transparency is not just a matter of making accurate information available to the public, but to make this information understandable, as points out Monique Sené: *"You are mostly getting*

Pekka Pyy

Safety advisor, licensing manager for Olkiluoto 4, Teollisuuden Voima OY (TVO)

« In Finland, nuclear safety is based on three different players – the regulator STUK, the TSO VTT and the utilities, i.e. TVO, Fortum and the newcomer Fennovoima. Obviously, there are often differing points of view between these players, and this sometimes results in debates. In this context, other parties expect VTT to be unbiased. Thus, nuclear safety enjoys in Finland extensive research programmes and an important training effort that form a very neutral basis for discussion between the regulator and the utilities. This is a very good way to collaborate in an impartial manner and allows VTT to work for both sides, as long as it is not at the same time on the same subject. I think this pattern is fully appropriate for small countries like Finland where we can't afford the luxury of multiplying the number of experts who have to be extremely competent in each scientific and technical area. So one major challenge for the future is to maintain and update the technical knowledge of TSO experts and to educate enough skilled persons also for the utilities and the regulatory body. »

information about facilities using ionising radiation that will not enable you to come up with comprehensible answers as "Is it safe and secure? Could there be health problems?" *Therefore, what we try to do with the Local Information Commissions is to put together a group comprising stakeholders, operators and TSOs so as to really talk things through together with everybody involved in order to see how credible information can be passed onto the local communities living around nuclear power plants or other industrial sites. I am not saying this is the miracle solution but I can say that it greatly improves the way people are living nearby in the vicinity of the plants as well as the relationship between the operator and the associations."*

Reflecting an operator's view, Pekka Pyy concluded on this subject with the following considerations: *"There is a limit to the openness unfortunately, and this limit is malevolence. I believe that, inside my company, there are in fact less than 10 people who may read the regulatory body's requirements regarding physical protection and our response to them. The protection of the installations and also of civil society against the acts of terrorism must be taken seriously. Another thing is competition and I mentioned that, in Finland, there are now three companies embarking on new build projects whereas only one licence will be granted, or a maximum of two. All parties have to understand that we are talking about huge stakes."*

As the above exchange of views clearly shows, the requirements for competence, independence and transparency will keep growing, encouraging TSOs to join their resources through networking and collaborations to take up the challenges associated notably with the ageing of in-service facilities and the launch of new nuclear programmes across the world. ■

GUEST LECTURE

Out of a regulator's view

Delivering his speech after the debate on the role of TSOs, André-Claude Lacoste, chairman of the French Nuclear Safety Authority (ASN) elaborated on priority requirements to guarantee nuclear safety as investments in new-build are envisaged worldwide, urging TSOs to cooperate more closely than ever.

"I will use my privilege as guest speaker to make a few remarks and ask a few questions." Underlining the importance given to the concepts of independence, transparency and the notion of stakeholder involvement, Mr. Lacoste pointed out as a preliminary remark: *"These are quite new issues. A panel ten years ago would not have discussed the same issues and I think this is a mark of an important evolution."*

'Old' and 'new' nuclear countries?

Commenting on this classification in two categories, the guest speaker asserted: *"Personally I prefer to distinguish between three categories: the new nuclear countries that are starting from scratch and will need 15 years before being able to operate an NPP; the countries with no real interruption of construction of NPPs such as Japan, South Korea, China or India; and countries, like Finland and France, which embarked on constructing new NPPs after years of interruption. We must keep in mind that, in countries with no build for more than 10 years, there is an issue of experience feedback and knowledge."*

Contributing ever more to regulatory work

Taking stock of the efforts of TSOs towards convergence of technical safety practices in Europe, Mr. Lacoste concluded: *"You have started to do so but I urge you to go as far and as fast as possible on this fundamental issue, as the TSOs should contribute ever more in the work performed by the Western Europe Nuclear Regulators' Association. What is at stake is the construction of a European safety doctrine and the construction of a joint expertise process in order to create and ground a full consistency of the European level."* ■

SEMINAR 1 | NUCLEAR INSTALLATION SAFETY

Towards networking and harmonisation

Co-chaired by Victor Teschendorff (GRS) and Michel Schwarz (IRSN) for the research part and by Heinz Liemersdorf (GRS) and Martial Jorel (IRSN) for the assessment part, the seminar devoted to nuclear installation safety started with a statement: the demand and expectations regarding TSOs are on the increase in terms of volume and diversity, as those progressively enjoy stronger visibility. TSOs are thus expected to conduct an ever-broader scope of activities ranging from the conduct of research through to the issuance of guidelines and update of safety assessment techniques. In this respect, the globalisation of the nuclear industry is a major challenge TSOs will have to tackle in the future, alongside the development of technology.

The debates derived from the different contributions presented at this seminar show that practices in the safety research and safety assessment areas are undergoing changes.

■ **Networking and integration are progressively developing to a daily practice among all organisations conducting research.** *"In the past, this was regarded as a kind of exercise or experiment to determine whether or not individual researchers were able to work together across Europe. Experience has since evidenced that it is not only possible, but that it is very attractive to organisations outside Europe, on the American and Asian continents,"* Victor Teschendorff stresses.

■ **Research is conducted more and more in a cooperative way.** *"The Sustainable Nuclear Energy Technology Platform, SNE-TP, is an illustrative example of this trend. TSOs enjoy a recognised identity and visibility inside this community gathering different players such as universities or industrial companies. They use this position to take the leadership in areas such as the strategic research agenda where the R&D strategy and related tools in nuclear safety for the next 20 to 30 years are at stake,"* claims Michel Schwarz.

■ **Harmonisation of safety regulations is increasingly a necessity, just as the convergence of technical safety practices.** *"The globalisation of the industry is a growing challenge. Whereas the responsibility for nuclear safety rests with countries through regulators and TSOs, stakeholders – and the industry in particular – operate far beyond national borders. This gap between globalised players and still strictly nationally enforced safety and security regulation poses a real problem at a time where vendors or utilities are pushing hard to promote the idea of an international licensing system that would allow them to develop one single design and to sell it across the world. Organisations such as WENRA for regulators or ETSON for TSOs have a major part to play in addressing this unbalanced situation,"* Martial Jorel comments.

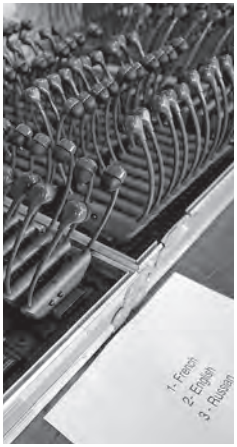
■ **Training is becoming a pivotal issue.** *"The generation shift in the industry and in safety organisations should not translate into significant amounts of knowledge and experience getting lost as senior professionals retire. Besides information exchanges among scientists and engineers from different countries, the training of young employees – as it is performed at the ETSON/JSP Summer School for instance – is an efficient way to pass the knowledge and the lore to the next generation,"* advocates Heinz Liemersdorf.

A few key issues dealt with in different contributions presented at the seminar are summarised below:

■ **Reminding the seminar's audience of the original aim of EUROSAFE:** *"promoting the convergence of technical nuclear safety practices in Europe"*, the contribution titled *Anchoring TSO expertise by developing a common Safety Assessment Guide* explains how three European TSOs took the initiative, several years ago to develop a common Safety Assessment Guide. Their objective was to set down the harmonised principles applied in the three organisations to ensure that, whatever technical analysis should be carried out, the safety assessment would be performed according to the same lines and could therefore be used with the same confidence by the people concerned. *"Later,"* the authors point out, *"this initiative was extended to the development of several technical Safety Assessment Guides and the activity was opened towards all EUROSAFE partners. This effort is seen as a significant step to harmonise major principles of safety assessment and working methods in assessing safety files in different technical areas. The guidance documents are also important to anchor existing knowledge and competence. In that way, they contribute to the transfer of knowledge towards young and new staff members."*

■ **The contribution titled *Improving the safety of Ukrainian NPP to reach an internationally accepted level*** elaborates further, through the work performed at Rovno-4 and Khmelnitzky-2, on the benefits from international reviews based upon European requirements (WENRA, European Utility Requirements…) and cooperation with EU nuclear power operators. *"The experience with the ongoing Roadmap on nuclear safety and other projects assisting to implement European practices in Ukraine should help – hopefully in the near future – to agree on joint European standards on nuclear safety,"* the authors conclude.

■ ***Safety management in a competitiveness context* is the topic of a paper dealing with another important issue** discussed at this 2008 seminar: how should nuclear power operators balance the search for increased competitiveness with the necessity to im-



Andrea Cavina

Nuclear Security Information Officer, IAEA

« Regardless of the business sector considered, we are all increasingly dependent on information systems. It is therefore time to take computer and information security very seriously and to integrate it at the highest possible level with other aspects of security, e.g. physical protection and personnel security. In this sense, a full-fledged nuclear security system should address each particular area and provide for its integration at the right level; this requires adequate investments in skills, time and money. In countries with large NPP fleets, TSOs are developing comprehensive methodologies and knowledge bases to tackle nuclear security issues. The IAEA is in the position to pool this knowledge and make it available to all States, especially those that need support to develop their nuclear programmes. In this respect, the present trend towards increasing knowledge sharing and networking among TSOs and the IAEA should be strongly encouraged; IAEA's resources are limited and we can only achieve our goals – by producing internationally agreed guidance and recommendations or by assisting in capacity building – with the active support of Member States. »

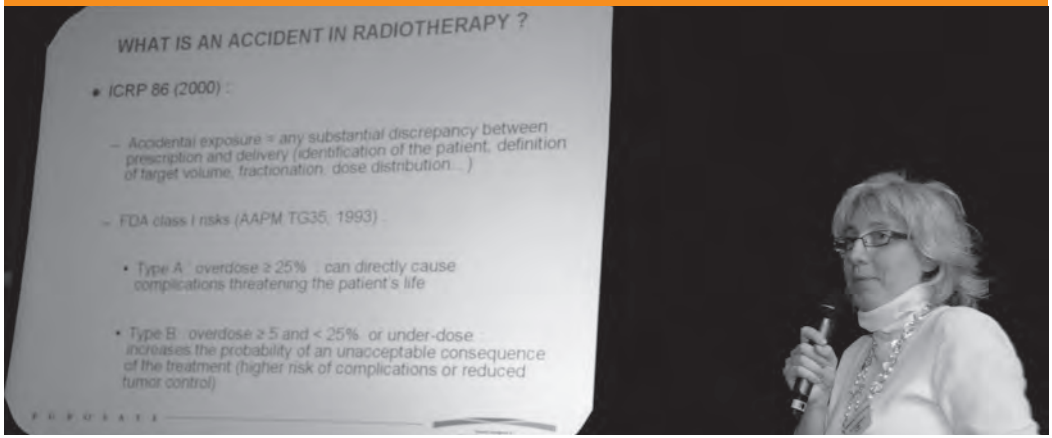
prove the safety of their reactor fleet? According to the author, EDF argues *"safety participates in the global industrial performance by the means used to maintain it"*, thus establishing a strong link between safety management and *"human factors"* approaches. In other words, the assumption made by the operator is that the rigor put in maintaining safety benefits to the other challenges of the company including security, radiation protection, protection of the environment, production efficiency, financial costs, etc. *"In that sense, maintaining safety appears to serve the search for competitiveness,"* the author declares, before issuing a set of recommendations such as preserving the integration capabilities of plant managers against the pressure induced by their environment. ■

➜ **The text of the contributions presented at this seminar is available online at:**
www.eurosafe-forum.org → EUROSAFE Forum 2008 → Seminar 1

Software demonstration during a coffee break

SEMINAR 2 | ENVIRONMENT & RADIATION PROTECTION

A broadening scope of health and safety activities



The EUROSAFE Forum seminar devoted to radiation protection, co-chaired by Gunter Pretzsch (GRS) and Jean-François Lecomte (IRSN), provided the opportunity to review the status of a variety of issues such as the monitoring of workers' exposure to ionising radiation, the safety of transport of nuclear materials, the management of spent fuel in Central Europe or the transposition to nuclear medicine of safety concepts proven in the nuclear power industry. The various lectures and debates thus showed how the scope of activities aimed at protecting man and the environment against ionising radiations extended, over the past years, to new areas such as radiotherapy.

Among the various topics addressed during the seminar, the four lectures summarised below draw particular attention from a policy-making perspective.

■ **Efficient radiation protection starts with comprehensive, up-to-date and easily accessible monitoring of exposed professionals:** this is the main message conveyed through the paper titled *The SISERI system: an information system for occupational dosimetry registration.* In their contribution, the authors describe the development in France of a unique database devoted to the monitoring of worker exposure to an occupational risk: ionising radiation for instance. This information system is able to quickly provide radiation protection officers and occupational doctors with monitoring data for workers. Operational dosimetry data thus can be viewed within 24 hours following their transmission. Meant to centralise dosimetric data at national level, SISERI enables actual monitoring of workers exposed in France, whether these are French or foreigners working in the country. Designed to enlarge the scope of centralised data, the system could provide better monitoring of cross-

Philippe Jamet

Director of Nuclear Installations Safety, IAEA

« I think nuclear safety is faced with three major challenges for the coming years: the development of new technologies calling for new safety knowledge, the alignment of safety requirements and assessment methods, and last but not least, the upsurge of 'new' nuclear countries. In this context, the International Atomic Energy Agency is, among other things, working to set up a global safety regime. The Agency therefore drafts international safety standards, organises peer reviews to verify that practices comply with these standards and fosters information exchange as well as training. In this process, the TSOs bring a significant contribution from three perspectives. Firstly, they are repositories of scientific and technical knowledge; they also have a privileged position to identify research needs and update know-how; and thirdly they play a major part in assessing and meeting needs in the field of training. The TSOs have a very important role to play in providing technical assistance to countries embarking on nuclear power. »

border workers. Developments in this direction could be foreseen in the near future.

■ **Accurate assessment of the safety of spent fuel transport and storage casks** require axial burn-up effects as well as activation of structure materials to be included in the source-term determination for the shielding calculation, besides classical boundary conditions as enrichment, burn-up and decay time. The contribution titled *Dose rate calculation at transport and storage casks for spent nuclear fuel* explains that interim storage of irradiated fuel assemblies in transport and storage casks is part of the German approach of waste management and that modern fuel assemblies are increasingly enriched to allow higher burn-up and longer irradiation time in the reactor core, calling for more sophisticated calculations of the resulting dose rate to design spent fuel transport and storage casks accordingly. *"During irradiation in the core,"*, the authors say, *"about one thousand radioactive nuclides, fission products, higher actinides and activated structure material isotopes are generated in the fuel assembly and structure materials, emitting neutron and gamma radiation. These different kinds of radiation have to be shielded effectively by the cask."* This is why, since 1981, GRS has been involved in dose calculations for transport and storage casks using own developments of burn-up and shielding calculation systems. Not yet a common approach due to the long computation time, the incorporation of axial-dependent burn-up profiles in shielding calculations may become state of the art, as the *IAEA Draft Safety Guide, Storage of Spent Fuel DS371* recommends that the source term determination for the shielding calculation also include axial burn-up effects as well as activation of structure materials besides other boundary conditions as enrichment, burn-up and decay time.

■ **TSOs should implement – and promote the use of – internationally accepted safety standards to perform safety analyses.** As explained in the presentation titled *Safety Review for the Chernobyl Spent Fuel Storage Facility ISF-1*, Ukraine intended to extend the licence of the wet storage facility (named ISF-1) needed for temporary interim storage of the spent fuel assemblies on site in the frame of the decommissioning activities of the Chernobyl NPP. As the remaining fuel assemblies have to be unloaded from the reactor units under decommissioning, and construction of the planned long-term dry storage ISF-2 on site is delayed due to technical and other problems, the ISF-1 will, for a certain period of time, be the only available storage facility on site and has to be operated at its full storage capacity. In the licensing process of this facility, Western European TSOs, including GRS and IRSN, provide the Ukrainian regulatory authority SNRCU with technical support for safety analyses. Drawing upon internationally accepted safety standards, the TSOs identified deficits of the operator's safety assessment report submitted to SNRCU with regard to several items such as the lack of information on the actual technical state of the facility, the quality assurance during construction, the compliance with normative requirements in force in Ukraine, some design defects such as back-up power supply or the demonstration of sub-criticality for certain design-base events and of stability of the storage building and the storage pools in case of special external loads, such as earthquake or external explosion. Following the TSOs' comments, accepted by the Chernobyl NPP operator, the Ukrainian regulatory authority issued a new licence for ISF-1

operation under the condition that a safety reassessment will be presented by the operator until 31 December 2012.

■ **Approaches used in the nuclear power industry can be transposed to the nuclear medical sector to improve safety.** In France, the recent legal obligation to declare to the national safety authority any significant incident related to the use of ionising radiation, including medical applications, resulted in many radiotherapy accidents to be reported over the last years, as reminds the paper titled *Lessons from recent accidents in radiation therapy in France*. Drawing upon its skills in radiation protection, human factor and software design as well as safety concepts that are service proven in the nuclear industry, IRSN set up a working group aimed at preventing further cases of overexposure resulting from treatment by stereotactic radiotherapy, and at improving the safety and quality of this kind of treatment that uses special equipment to position the patient and precisely deliver radiation to a tumour. The recommendations issued by the working group thus intend to strengthen the quality assurance procedures applied during the commissioning of stereotactic radiotherapy machines taking into account the technical difficulties associated with the small size of the beams used. It is also suggested that, among others, measurements should be performed to characterise this type of beams according to the procedures proposed by the working group, that regulatory controls should be extended to those beams and that current research should be supported to allow the establishment of a reference metrology in a near future. ■

➜ **The text of the contributions presented at this seminar is available online at:**
www.eurosafe-forum.org ➞ EUROSAFE Forum 2008 ➞ Seminar 2

Peter Storey

Head of Research & External Contracting Nuclear Directorate, Division 6F, Health and Safety Executive

« The expansion of ETSON shows the potential strength for TSOs to cooperate and to work together. This gives TSOs the ability to help in the growth of expertise in Europe and to use this combined expertise in areas where 'domestic' experience may have declined or needs to grow. Under EUROSAFE, those TSOs that cooperate through ETSON have the ability to place attention on those key areas and share expertise when it may be difficult to grow it otherwise. This has a favourable impact on the TSOs' ability to be independent in their assessment, especially from the industry. It is important for regulators that TSOs are technically competent and experienced in order to support them in a proper manner. TSOs therefore have to very clearly demonstrate that there is no conflict of interest regarding the industry and that they work in complete transparency. This is a prerequisite to enjoy public trust. »

SEMINAR 3 | WASTE MANAGEMENT & ENVIRONMENT

Gaining understanding of highly complex phenomena

As an increasing number of decommissioned nuclear facilities are presently undergoing dismantling and thereby adding to the current amounts of radioactive waste, the design of repositories adapted to the containment of each type of waste according to its lifetime and level of activity is becoming a pivotal issue in terms of nuclear safety and radiation protection. The different speakers at this EUROSAFE Forum seminar devoted to Waste Management & Environment provided an update of the work carried out in geological engineering, nuclear facility dismantling and environmental monitoring.

Co-chaired by Tilmann Rothfuchs (GRS) and Jean-Christophe Gariel (IRSN), the seminar was the opportunity to discuss the progress in knowledge associated with the assessment of the long-term behaviour of bentonite, a type of clay tested primarily with a view to minimising the leaching of radioactive waste in underground repositories, thus allowing efficient containment in geological layers over the long run. In addition, a focus was given on the safety of a long-lived, low-level waste disposal facility, based on the situation in France, where solutions for the elimination of graphite waste from the dismantling of first-generation reactors have to be found to comply with legal requirements. In the area of facility decommissioning and dismantling, Bel V, the Belgian TSO, gave the audience an insight in the role played by a TSO in the licensing of the dismantling of research and fuel cycle facilities. The seminar finally tackled the environmental issues linked to the development of a new tool for the survey of low-level radiological and natural events in the atmosphere.

■ **Being a special type of clay, bentonite offers physical and chemical characteristics that make its use appropriate** for geotechnical applications such as the long-term

« Radiotherapy is a fairly good example of how the role of technical safety organisations has developed over the years. In France for instance, following several exposure accidents in various hospitals – some of them conducive to casualties –, IRSN as a TSO became involved, upon request of the safety authority, in investigations aimed at understanding the causes and consequences of these radiotherapy accidents. Until then, IRSN had not been dealing very much with the medical sector, but had fortunately grown in-house an array of skills in safety engineering, human factor and software that could be combined to assess such accidents from these complementary perspectives. A multi-skilled group was set up to visit some hospitals as well as radiotherapy equipment makers and, drawing upon its own assessment and guidelines issued by the IAEA and ICPR, to transpose to the medical sector the safety concepts – such as defence in depth – proven in the nuclear power industry. Accidents in radiation therapy bounced the medical sector into creating an online database named *ROSIS*, where incidents can be declared anonymously, as well as a safety significance scale for events, comparable to INES in the nuclear power sector. These moves are encouraging signs of a growing culture of transparency in a sector that once used to nurture secrecy. »

Sylvie Derreumaux
Engineer
Radiological Protection and Human Health Division, IRSN

containment of radioactive waste in underground repositories. In their presentations respectively titled *Increasing the understanding of non-isothermal bentonite re-saturation by the development of an alternative conceptual approach* and *Short- and long-term behaviour of compacted bentonites in contact with solutions of different salinities: a safety issue for the long-term closure of repositories for radioactive waste?*, the authors depict two aspects of the most recent researches on the long-term behaviour of bentonite: re-saturation and alteration due to contact with groundwaters of high ionic strength and pH.

■ **The lecture titled *Bel V activities in the Belgian context of dismantling research reactor and fuel cycle facilities*** explains the shift from a situation where decommissioning was treated and analysed by the operators and the TSO through progressive modifications of the nuclear installations to a situation where decommissioning activities are formally the subject of a new licence. Emphasis is put on the TSO's role in the licensing approach.

■ **From very low- to high-level waste and from short- to long-lived waste,** each type of radioactive waste poses specific safety challenges that are characterised in the guidance document on safety issues recently published by the French Safety Authority. Current issues are overviewed in one of the papers with a focus on the specific challenges associated with the site selection process for the disposal of long-lived low-level waste.

■ **Characterising all situations before they could represent the least radio-ecological impact** for the population or the environment is the aim of post-accidental surveys or research studies on short and long timescales. As explained in the contribution titled *A tool for the survey of low-level radiological and natural events in the atmosphere*, this requires the use of different tools according to their sensitivity vs. reactivity ratio and allowing a continuum in the management of artificial radioactivity in the atmosphere. ■

➜ The text of the contributions presented at this seminar is available online at:
www.eurosafe-forum.org → EUROSAFE Forum 2008 → Seminar 3

SEMINAR 4 | NUCLEAR MATERIAL & NUCLEAR FACILITIES SECURITY

Towards an integrated approach of nuclear security?

To be carried out efficiently, nuclear security requires a holistic approach taking into account the differences and possible synergies with nuclear safety, primarily aimed to prevent technical malfunctions, and nuclear safeguard, focused on non-proliferation. Can the development of networking among TSOs help define a common European approach based on a further integration of these three complementary aspects? This question and others raised passionate debates at the EUROSAFE Forum seminar dedicated to nuclear material & nuclear facilities security and co-chaired by Jürgen Sternkopf (GRS) and Jérôme Joly (IRSN)

Andreas-Michael Pfaffernoschke

Head of division for disarmament cooperation/Global Partnership project implementation, Federal Foreign Office, Federal Republic of Germany

« The improvement of security at nuclear facilities around the globe is a challenge we are all faced with since many years. It is therefore a major political task to engage in activities aimed at reducing to the lowest possible level the threat posed to mankind by the proliferation of nuclear materials and weapons. The German Federal Ministry of Foreign Affairs in the framework of the G8-initiative "Global Partnership against the spread of weapons and materials of mass destruction" is actively engaged in this work. It has tasked GRS since 2003 with implementing projects aimed at improving the physical security of nuclear facilities in the Russian Federation. The Federal Foreign Office has chosen GRS as it is – due to the experience gained in Eastern and Central Europe and in Russia since the 1990s – the most experienced and knowledgeable organisation to perform this work. Some projects in the Russian Federation have already been finished contributing to a significantly higher level of security. Others are nearing completion or are in the middle of their implementation cycle. A new project in Ukraine is about to start this year. The Federal Government remains committed to further contribute to improve nuclear security in the world. »

■ Nuclear security is faced with major challenges in the future. Just to mention three of them:

- At a time where many power plants are renewing their information and command-control systems, shifting from analogical to digital technology, IT security becomes a challenge, given the sensitiveness of such systems to external and to internal threats.
- In a more generic sense, catching-up with the rapid pace of technological innovation is an increasingly difficult task, as budget constraints put TSOs' research under pressure.
- As a growing number of countries take interest in including nuclear power in their energy mix, the physical protection of nuclear material and nuclear facilities against malevolence and the prevention of proliferation require strengthened and enlarged cooperation on an international scale with a view to containing threat. *"A very interesting project but a highly political issue,"* comments Jérôme Joly.

■ In this context, how can TSOs contribute to raising the bar of nuclear security?

"All TSOs in Europe are tackling these issues," Jürgen Sternkopf acknowledges. *"And with the development of networking, the TSOs can enhance their capability to define a common approach integrating in a holistic view the imperatives of safety, security and safeguard. Training sessions addressing these three aspects are another efficient way to foster a convergent approach to security."* Asked about what the limits to information exchange are, Jérôme Joly answers: *"There is no difficulty for TSOs to talk with their counterparts about security principles, and they do it on a daily basis. We exchange on how to assess the security of a plant, for instance. But some information, such as the precise scenario of threat taken as an assumption, is strictly confidential and has no interest either for training purposes or for doctrine or philosophy."* For the aforementioned reasons, four out of the five lectures presented at the Nuclear Material & Nuclear Facilities Security seminar were focused either on IT security or on international cooperation through the G8 Global Partnership.

- Aimed at summarising the commonalities and specificities of the approaches to nuclear safety and security, the presentation titled *Compatibility of safety and security* concludes that both areas present large similarities in their aim as in their methods and are mutually complementary in the field of protection with regard to the risk of sabotage, even if specific attributes in certain areas lead to differences in their implementation.
- Reflecting an international agency's perspective, the lecture titled *Computer security at nuclear facilities* describes the process and the work necessary to draft security guidelines. This perspective is balanced by the complementary point of view provided by a German utility through the contribution titled *Implementation and application of an IT security process in nuclear facilities*, where the implementation of a computer security process by the operator is explained.
- In the field of international cooperation, two lectures titled *G8 Global Partnership: Germany's contribution to strengthening international security* and *Modernisation of physical protection of Russian nuclear installations in the frame of G8GP-Programme* introduce respectively the work performed by the German Federal Foreign Office and by GRS to secure nuclear facilities in the Russian Federation. ■

➜ The text of the contributions presented at this seminar is available online at:
www.eurosafe-forum.org ➞ EUROSAFE Forum 2008 ➞ Seminar 4

Pierre Chuilon and Jean-Paul Joulia

European Commission Europeaid - Nuclear Safety Unit

« On nuclear safety issues, the European Commission has cooperated with countries such as Russia and Ukraine, where needs for up-to-date safety assessment methods and skills are sizable. We are now planning to support countries that emerge on the nuclear arena and are in need of theoretical and practical knowledge and experience. To address these distinct situations, we rely upon TSO experts whose tasks are to provide the technical basis to the Commission's assessment criteria and indicators to measure the progress of each partner country. These experts usually work together on EC projects and, therefore, need to share a common view on the Commission's policy regarding nuclear safety and radiation protection. We are satisfied to see the emphasis placed by the 2008 EUROSAFE Forum on education and training, and we support the dynamics towards greater synergies prompted by such initiatives as the ETSON Summer School. »

JSP

Enhancing TSOs' networking through the JSP

Set up in 2003 by GRS and IRSN with a view to promoting staff exchange among TSOs, the Junior Staff Programme (JSP) now includes young engineers and scientists from the Belgian TSO Bel V. Involved simultaneously in several types of projects – education & training, networking and scientific pilot projects – the team members are challenged by the necessity to meet their commitments in their respective companies whilst achieving simultaneously these joint projects. If they get increasingly visible, these JSP projects should earn higher ranking in corporate priorities.

Preparing the pilot ETSON/JSP Summer School

Organised by GRS with the support of the JSP team members, the Summer School took place from 25th to 28th August 2008 in Garching, near Munich. With 45 participants from 10 organisations (IRSN, GRS, Bel V, AVN, BfS, INSTN, FANC, NNL, Riskaudit, VROM/KFD) converging to address the "Nuclear Reactor Safety Assessment", this international event proved a success and provided the JSP team with valuable visibility among the participating companies.

Drawing upon the experience feedback from this pilot Summer School, the JSP team members will support IRSN in the set-up of the next session, due to take place from 05th to 10th July 2009 in Cadarache (south of France). The central topic will be *Safety Guidelines and Assessment Methods pertaining to internal and external risks of nuclear facilities.* The schedule includes technical visits a well as breakdown sessions, one on reactors including the safety consideration on future generation (III, IV and fusion) and an example of successful cooperation on severe accidents research, and the second one on the dismantling of nuclear facilities and the management of radioactive waste.

As a major project, this ETSON/JSP Summer School 2009' should con-

tribute to enhancing the JSP team members' visibility, thus giving their projects increased recognition from each company's hierarchy.

A web platform to ease interaction

Besides these activities in the education and training area, the JSP are aware of a prerequisite to allow the participating TSOs to foster joint work and staff mobility between themselves: a communication platform accessible online. The JSP are presently working on such a website aimed at providing all the important data to facilitate contact and interaction among the team members. Beyond the possibility to get help when needed from colleagues working for other TSOs, this website will also contribute to providing the JSP with additional visibility as a pathfinder towards widespread personnel data sharing among the TSOs.

Contributing to the future of TSOs

Today, the JSP team includes twelve young engineers and scientists from Bel V, GRS and IRSN. In spite of their strong motivation, the JSP members are aware that, because of their limited number and resources, they cannot conduct scientific projects from A to Z just by themselves. "*We see ourselves as a kind of motor to increase collaborations between our respective companies and as a kind of platform to get people together in a project driven approach, since the primary intent behind the JSP is to foster ever-closer collaboration between our TSOs. In this respect, I think pilot projects should not be restricted to JSP members, but should involve people from the participating TSOs,*" Stefan Weber advocates. A newcomer to the JSP, Sarah Vandekendelaere confirms this view of the JSP acting as a driving force to enhance cooperation between Bel V, GRS and IRSN: "*To me, the JSP is a way for each of us to learn to know the activities of our fellow TSOs, to identify counterparts, to see what concrete collaborations could be envisaged, to share experience and to work together on scientific and non-scientific subjects. I see the newcomers today as part of the future, and I consider the JSP as a tool to create this future. One of our tasks is to talk with our management, to convince them of the advantages of the JSP projects, since we are, as young engineers and scientists, part of the future of our TSOs, of their ability to meet the increasing demand for safety expertise.*" ■

Horst-Jürgen Herbert

Head of Process Analyses Department, GRS

« I would like to pay tribute to two great ideas: the creation of EUROSAFE ten years ago and the set-up of the European Technical Safety Organisation Network, ETSON, two years ago, since both initiatives largely contributed to enhance the efficiency and visibility of member TSOs. This is, among others, key to becoming really appealing to young talented people at a time where TSOs commit themselves to fulfilling the expectations of their national regulator while expanding their field of activity far beyond the European borders, as 30 new countries are said to consider nuclear energy as part of their power generation mix. I think TSOs can successfully achieve this double role, as long as they remain vigilant about avoiding any conflict of interests. »

VENUES & WEBSITES

Upcoming meetings on nuclear safety and the future of nuclear energy

05-10 July 2009, Cadarache, France

ETSON Summer School on Safety Guides and Assessment Methods
Organised for ETSON by IRSN and the JSP
Tel. +33 (0)1 58 35 85 43
E-mail: karim.benouaghrem@irsn.fr
http://www.irsn.org

06-11 September 2009, Paris, France

GLOBAL 2009 Conference & Exhibition held in coordination with the TOP FUEL topical linked " Water Reactor Fuel Performance" Meeting. Emphasis will be placed on fuel reliability.
Organised by SFEN at Palais des Congres of Paris
Conference Office - SFEN Paris -
Contact: Sylvie Delaplace
Tel. +33 (0)1 53 58 32 16
Fax +33(0)1 53 58 32 11
E-mail: global2009@sfen.fr - www.sfen.fr

09-11 September 2009 Paris, France

Nuclear Fuel Behaviour during Reactivity-initiated Accidents
OECD/NEA Workshop organised in co-operation with Institut de radioprotection et de sûreté nucléaire (IRSN)
Tel. +33 (0)1 45 24 10 10
E-mail: nea@nea.fr

13-17 September, 2009 Richland, United States

Nuclear Criticality Safety: Realism, Robustness and the Nuclear Renaissance
http://www.ncsd2009.com

27 September - 03 October 2009, Kanazawa, Japan

NURETH-13, International Topical Meeting on Nuclear Reactor Thermal Hydraulics
Organised by the Atomic Energy Society of Japan (AESJ)
Tel. +81 (0)3 3508 1261
E-mail: atom@aesj.or.jp

05-07 October 2009 Paris, France

Ageing Management of Fuel Cycle Facilities
Organised by the Nuclear Energy Agency (to be held at the International Energy Agency Headquarters)
Tel. +33 (0)1 45 24 10 10
E-mail: nea@nea.fr
http://www.nea.fr/html/nsd/calendar.html

08-11 November 2009, Lisbon, Portugal

ETRAP 2009, 4th International Conference on Education and Training in Radiological Protection
Organised by the European Nuclear Society
Kirsten Epskamp
Tel. +32 (0)2 505 30 54
Fax +32 (0)2 502 39 02
E-mail: etrap2009@euronuclear.org

07-11 December 2009, Kyoto, Japan

FR09 – Fast Reactors and Related Fuel Cycles: Challenges and Opportunities
Organised by the International Atomic Energy Agency (IAEA)
Tel. +43 (0)1 2600 21311
E-mail: official.mail@iaea.org

14-18 December 2009, Cape Town, South Africa

International Conference on Effective Nuclear Regulatory Systems: Further Enhancing the Global Nuclear Safety and Security Regime
Organised by the International Atomic Energy Agency
Tom Alexander (Conference Services Section)
Tel. +43 (0)1 2600 21324
Fax +43 (0)1 2600 7
E-mail: T. Alexander@iaea.org

To read more about the topics dealt with at the Paris 2008 EUROSAFE Forum

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http://www.eurosafe-forum.org/eurosafe-2008
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The EUROSAFE Tribune #016 will deal with "Ensuring nuclear fuel safety".

The EUROSAFE Forum 2009 organised in Brussels on 2 & 3 November at the Sheraton Hotel will be devoted to "Safety Implications of an Increased Demand for Nuclear Energy".

The corresponding debates and seminars will be reported in the EUROSAFE Tribune #017

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