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SNETP Newsletter n°**8**

June 2011

On 31 March 2011 SNETP published a statement as a reaction to the Fukushima accident. This paper is available on www.snetp.eu. The text is reproduced below.

SNETP Reaction to the Fukushima Nuclear Accident

he Sustainable Nuclear Energy Technology Platform (SNETP) is a European Technology Platform established in 2007 with the endorsement of the European Commission. It is a forum grouping nearly 100 stakeholders from industry, research, safety organisations, universities and non-governmental organisations, dedicated to promote research, development and demonstration of nuclear fission technologies necessary to achieve Europe's Strategic Energy Technology Plan (SET-Plan) goals.

SNETP expresses its solidarity with the people of Japan so strongly affected by the recent devastating earthquake and tsunami and its support to TEPCO and the Japanese authorities in their efforts to limit the consequences of the resulting nuclear accident.

SNETP supports the common EU-level approach to analyse the implications of the Japanese nuclear events, and to develop a common framework to re-assess the safety of nuclear power plants without delay. In this respect, we welcome the European Commission's proposal to conduct a voluntary 'safety and risk evaluation' in order to re-assess the safety margins of nuclear power plants across Europe.

While we understand uncertainties and emotions that go with the nuclear events in

Japan, we strongly believe that, until the current situation has been brought fully under control and the root causes of the events have been understood, we need to refrain from making any premature policy decisions that could have significant implications for Europe's energy future and climate change policy.

SNETP gives nuclear safety the highest priority in its vision and research agenda. European technical safety organisations (TSOs) are involved in the activities of the Platform's governance and working groups. SNETP promotes safety-related research and harmonisation at EU level, for current and future generations of nuclear fission technologies.

The Platform's Governing Board has decided today to set up a dedicated task force to assess the lessons learned from the Fukushima accident, in order to identify appropriate adaptations of SNETP's work programme.

Nuclear energy is and will need to remain a key element in meeting Europe's needs for security of energy supply, competitiveness, and fight against climate change.

The SNETP Governing Board Rome, 31st of March 2011

Recent publications:
"Nuclear Education and
Training: Key Elements
of Sustainable European
Strategy", by the SNETP
Working Group on
Education, Training and
Knowledge Management

(ETKM)

Save the date:

SNETP 3rd General

Assembly, Warsaw,

29 November 2011



Hungarian Sustainable Nuclear Energy Technology Platform



The first conference

The Hungarian platform was launched in 2010. The main goal of the platform is to influence the agenda of nuclear energy research and development activities in Hungary and to participate in its coordination. The agenda should take into account the needs related to:

- lifetime extension of the Hungarian nuclear power plant,
- realization of new nuclear units,
- closing the fuel cycle and development of Generation IV reactors.

The platform's activities will be connected with the program of the Sustainable Nuclear Energy Technology Platform (SNETP) of the European Union as well as with similar organizations in different European countries.

The Platform organized its first conference in Budapest, January 12, 2011. The first speaker was Pál Kovács, deputy state secretary of the Ministry of National Development. Mr. Kovács emphasized the importance of nuclear energy in the Hungarian energy mix, especially as a tool of answering the challenges due to the increase in energy demand and in carbon release mitigation.

Dr. János Gadó, chairman of the governing board of the platform, spoke about the vision of the platform and about its strategy, as well as about the means of reaching its goals. Mr. Attila Bareith, chairman of the platform's executive committee, described the preparation of the strategic research agenda. Mr. János Süli, deputy director general of Paks NPP, described the activities of the NPP and emphasized the subjects, where the research and development is and will be of great importance for the plant. Dr. József Rónaky, director general of the Hungarian Atomic Energy Authority, emphasized that the authority intends to be promoter, user and financer of the platform. The last speaker Dr. Ákos Horváth, representing the expert group, described a few important activities, forming the main part of the platform in the near future. At the end of his presentation he spoke about preparation of projects related to the ALLEGRO gas cooled fast reactor demonstrator.



Keynote speaker Pál Kovács, deputy state secretary, Ministry of National Development

lstván Vidovszky PhD, deputy director HAS KFKI Atomic Energy Research Institute email: vidov@aeki.kfki.hu







he EUROPAIRS project organized on 26 May 2011 a workshop called "Nuclear for Industry: Perspectives of Nuclear Cogeneration". Approximately 50 delegates from energy-intensive industries, utilities, the nuclear community and the EU attended the event. On this occasion, panelists from industry, such as ArcelorMittal, E.ON, Fortum, Saipem and ZAK (photo) presented their views on nuclear cogeneration.

Presentations are available at www.europairs.eu.

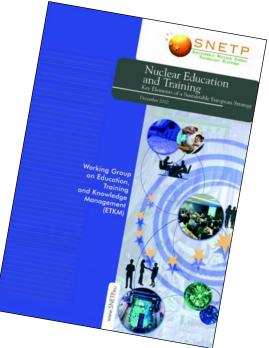
A Nuclear Cogeneration Industrial Initiative is under preparation in the frame of SNETP.

SNETP Office granted from the FP7 project SMILE

he European Commission renews its support to the secretariat of SNETP, with a contract called SMILE (SNETP Management, Implementation, Liaison and Evolution), from June 2011 till May 2014.

Appropriate communication instruments and project management will be ensured for the three technological 'pilars' (ESNII, GENII/III and Co-generation) by the Secretariat members Foratom, UJV, E-ON, CEA and with LGI as Coordinator.

Today **SNETP** counts almost 100 members.



The ETKM Working group published its report in the beginning of 2011

An article in the Belgian weekly newspaper "Le Vif" listed our SNETP colleague Mr. Hamid Aït Abderrahim from SCK • CEN in the second place of the top 100 personalities of the year 2010





SNETP 3rd General Assembly, Warsaw, 29 November 2011



The SNETP secretariat has the pleasure to announce the forthcoming

SNETP 3rd General Assembly, Warsaw, 29 November 2011

In connection to the SET Plan Conference organised under the Polish EU Presidency.

More details on the location, programme and registration will be communicated in the coming weeks. Continuous update will be posted on www.snetp.eu.











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ENERI 2010 conference:

Infrastructures for energy research

Infrastructures for energy research, conference ENERI 2010 brought together research policy stakeholders (policy-makers, industries, universities, research institutions, advisory bodies, etc.) to discuss on the development of a comprehensive strategy for energy research infrastructures based on the ESFRI Roadmap and within the broader context of the SET-Plan.

Three new Research Infrastructures were proposed to be included in the ESFRI list, for the Solar, Wind and Nuclear energy domains. They will serve as open research spaces to stimulate technological break-through in these domains, and join the existing multidisciplinary Infrastructure Research already strongly contributing energy innovation, through e.g. the development of energy-related materials and methodologies.

A new type of nuclear research reactor (Myrrha) to be constructed in Belgium was presented by Mr. Hamid Aït Abderrahim (SCK • CEN) and the project Myrrha as a whole was supported in speeches of both, Ms. Sabine Laruelle (Belgian Minister for Science Policy) and Ms. Máire Geoghegan-Quinn (EU Commissioner for Research).

For more information please find all speeches and presentations on the conference website:

http://www.eneri2010.be/

SET-Plan conference

The SET-plan conference held in Brussels 15-16 November 2010 welcomed 500 participants from various energy sectors. Two European Industrial Initiatives – EIBI for Bioenergy and ESNII for European Sustainable Nuclear energy were officially launched. Mr. Paul Rorive (GDF Suez, photo) introduced the work envisaged for ESNII and was supported by presentations from Mr. Noel Camarcat (EDF, ESNII Chairman) and Mr. Eric van Walle (SCK • CEN).

In the session dedicated to the European Energy Research Alliance (EERA), joint pro-



Paul Rorive presents the ESNII roadmap

grammes (JP) on Bioenergy, CCS and Nuclear materials were launched. The JP on Nuclear materials was presented by Ms. Concetta Fazio (Karlsruhe Institute of Technology, KIT).

The SET-Plan conference also offered a clear overview of existing frameworks on international cooperation and organisations active in innova-

tive energy technologies development and best practices in which relevant elements for the SET-Plan were identified. The next SET-Plan conference will take place in Warsaw on 28-29 November 2011.

For more information please find all speeches and presentations on the conference website:

www.

setplanconference2010.be

CEPS task force considers SET-Plan governance and financing



The Centre for European Policy Studies (CEPS), located in Brussels, is a thinktank organisation with a good reputation in EU circles for producing authoritative reports on strategic European issues, particularly in the economic and foreign policy fields. SNETP has been participating recently in a CEPS task force examining the objectives, structure and financing of the EU Strategic Technology Plan (SET-Plan). The Commission has called for an additional 50 billion euros of public and private money to be dedicated to low carbon energy research over the next 10 years; however given the current financial situation, Member States are reluctant to commit additional resources, so other mechanisms need to be explored. The CEPS task force is chaired by Lars-Erik Liljelund, Chief Executive Officer, Foundation for Strategic Environmental (MISTRA) Research Sweden, former Special Envoy

of the Prime Minister of Sweden on Climate Change and Director General of the Swedish Environmental Protection Agency. Task force membership comprises officials from DG Research and DG Energy, European Commission and about 25 people from industry and various government agencies.

After a meeting in December 2010, the members agreed to CEPS sending a written statement to the President of the European Council and the President of the European Commission with messages aimed at the Special Energy Summit held on 4 February 2011. The Summit Conclusions, issued after the meeting, contained the following wording "The EU and its Member States will promote investment in renewables and safe and sustainable low carbon technologies and focus on implementing the technology priorities established in the European Strategic Energy Technology Plan".

In June 2011 the Task Force published its report, "The SET-Plan: from concept to successful implementation". This report will be widely distributed amongst EU decision makers. The report addresses the available tools for a successful SET-Plan, talks about coordination with other funds and policies, and finally presents some recommendations. It promotes the use of receipts from emissions trading, the extension of existing loan guarantee schemes, or a contribution to low carbon research from the Structural Cohesion Funds.

The CEPS Task Force recommends in particular that the European Commission 'should lead in areas with important cross-border or scale effects, notably (smart) grids, CCS and nuclear'.

The report is available at: http://www.ceps.eu

NULIFE – first self-funded projects

Tn 2006 the NULIFE Plant Life Prediction) Network Excellence was launched under the EURATOM FP6, with initial focus on research related to the ageing of metallic materials for Long Term Operation. Its goals have evolved during the years and today it covers many of the issues applying to Gen II and III type reactors in the wider Plant Life Management themes.

In particular, NULIFE provides a framework for implementing tools responding to those needs presented in SNETP's Strategic Research Agenda which are related to the R&D of Gen II and III reactors. NULIFE's portfolio currently encompasses a dozen of projects – most of which are EC funded – covering various R&D topics such as metals

(e.g. PERFORM 60, STYLE and LONGLIFE projects), I&C (e.g. ADVANCE project) and man-system interface (e.g. MMOTION and HARMONICS projects). Some projects are considered as inkind projects, like NESC VII, while others, such as VER-LIFE, focus on harmonization issues.

In parallel NULIFE is developing self-funded projects thanks to the strong support of its members (NULIFE is open to all nuclear stakeholders) with more than 50 organizations, and the committed industrial support of its powerful End-User Group, with nearly all European Nuclear utilities and key vendors active.

First self-funded NULIFE project, MOTHER (MOdelling

T-junction HEat tRansfer), is expected to kick off in March 2011, as the result of many enthusiastic technical discussions. The project gathers a wide variety of stakeholders from the industry (e.g. E.On, AREVA, EDF), technical research centres (e.g. CEA, NRG, PSI, SPG), universities (e.g. TU Dresden) and SNEs (e.g. Onsala), and is coordinated by Swedish energy company Vattenfall. The topic of MOTHER builds on previous activities performed at CEA experimental facilities FATHER and FATHERINO in Cadarache and can therefore be expected to give rise to many "children".

The preparation of the legal aspects related to this first NULIFE-funded project, although time consuming, will



provide a basis for upcoming self-funded projects. The next such project under preparation, ACCEPPT, focuses on civil work structures.

Following the achieved milestones, the launch of other new projects is envisaged, while keeping a proper balance between EC-funded and self-funded projects. Progressive coprogramming should be further developed. We are confident that the increasing membership, the growing portfolio and developing scope of NULIFE activities will facilitate the envisaged transition toward a more sustainable form of a NULIFE Association.



JPNM - European Energy Research Alliance (EERA)

The objective of the Joint Program on Nuclear Materials (JPNM) is to identify key priority topics with the purpose to support the development and optimisation of sustainable nuclear energy options. This objective will be reached through coordination, cooperation and networking among European research institutes and universities.

It has been widely recognized that nuclear energy has a positive impact on the energy mix in terms of reducing the environmental impact of greenhouse gas emissions and of ensuring security of energy supply while being economically competitive. The short and medium term objectives for nuclear

energy addressed within the Strategic Energy Technology Plan (SET Plan) considers improved resources utilization and reduction of radioactive waste. These objectives can be achieved through the development of fast neutron reactors with closed fuel cycle. In this context, the JPNM supports the European Industrial Initiative ESNII (European

Sustainable Nuclear Industrial Initiative), devoted to both fast reactor demonstration projects and to further commercial deployment by the European industry of fast reactor technologies in the long-term.

An important challenge

The JPNM has been launched

conference on November 15,

2010 in Brussels. At present

PSI, RCR Ltd, SCK • CEN,

12 European countries

the next five years.

14 Partners (CEA, CIEMAT, ENEA,

HZDR, JRC, KIT, KTH, NRG, INR,

University of Oxford, VTT) from

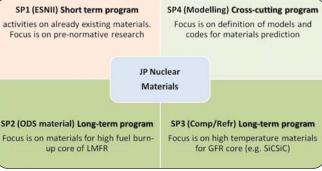
participate to the JPNM with a

total effort of \sim 140 PY/Y for

during the fourth SET-Plan

for the development of fast neutron reactors and in general of Generation IV systems and ADS is the availability of structural and clad materials which are able to withstand severe conditions and requirements as e.g.

1) high temperature and thermal gradients; 2) high fuel burn-up; 3) long time operation; 4) corrosive environment (gas, liquid metals, etc); 5) intense mechanical stresses. The JPNM has been built in order to address these requirements by defining key tasks within the areas of innovative material development and screening; experimental characterisation and advanced qualification/vali-



dation; fabrication issues (welding, joining, etc.) and pre-normative research. The relevant tasks of the key research areas have been gathered together within four thematic sub-programs (see also figure), these are:

- Support to the European Sustainable Nuclear Industrial Initiative
- Oxide Dispersed Strengthened (ODS) Steels
- Refractory materials: ceramic composites and metal-based alloys
- Modelling: Correlation, Simulation and Experimental Validation.

Concetta Fazio, Karlsruhe Institute of Technology Program Nuclear Safety Research, concetta.fazio@kit.edu

Who are the members of SNETP?

The UK's National Nuclear Laboratory National Nuclear Laboratory

The UK's National Nuclear Laboratory (NNL, UK) offers an unrivalled breadth of technical products and services to our customers across the whole nuclear industry.

Covering the complete nuclear fuel cycle from fuel manufacture and power generation, through to reprocessing, waste treatment and disposal and including defence, new nuclear build and Homeland Security. NNL provides these services supported by an impressive range of facilities and links with international research organisations, academia and other national laboratories.

NNL offers commercial technologies for customers and trusted technical advice to Government. Our team of highly skilled and experienced employees specialise in providing tailored solutions incorporating world class innovation for successful project and programme delivery.

NNL's facilities are second to none. At Sellafield, we operate the most modern nuclear technology research facility in the world, the Central Laboratory, alongside the Windscale Laboratory, providing Post-Irradiation Examination (PIE) and other services critical to plant life extension. At Preston (Springfields site) NNL operates a uranium active chemistry laboratory and has a non-radioactive test rig facility at Workington (close to Sellafield). NNL also has staff working on the Risley, Stonehouse and Harwell sites providing Head Office functions graphite technology, radiation chemistry and modelling and simulation.

NNL's ability to help build technical capacity for nuclear science and technology development both domestically in the UK and internationally, is based on our long-term operation of these world-leading facilities and a wealth of technical experience, coupled with our significant network of domestic and international partnerships. This combination of unique facilities operations, technical achievement and strong external collaborations is expressed through several key areas of service, as described further below:

Nuclear New Build

Using the breadth of technical knowledge from fuel and core analysis through to environmental assessment and safety case management, NNL is able to integrate and manage technical studies and licensing submissions to the respective Regulator (s) on behalf of the utilities.

Our unique, independent service is based on a fundamental understanding of the science, technology and economics of reactor and fuel cycle operations and draws on NNL's comprehensive expertise in the areas of:

- Reactor and fuel Cycle performance
- Reactor plant integrity
- Waste management
- Safety, licensing and environmental assessments

We are not aligned with any particular reactor technology, and can therefore provide both comprehensive and unbiased technical support.

Homeland Security and Non-Proliferation

NNL provides an extensive and integrated range of technology services and solutions based on a powerful combination of knowledge, experience and unique facilities. NNL's principal products and services in this area include:

- Hazard management and decontamination
- Nuclear materials and contamination detection
- Radiological impact and nuclear process modelling
- Nuclear Forensics

Environmental Management

Delivering focused solutions to contaminated land management, waste disposal and environmental aspects of site operations. NNL's principal products and services in this area include:

- Human and ecological dose/risk estimates
- 3D contaminant plume modelling
- Contaminated land safety case development and risk assessment
- Support to nuclear site on requirements of current and future legislation

Decommissioning and Legacy Waste

NNL's technology services underpin the full life cycle of nuclear facility decommissioning. They are based on over 40 years experience and knowledge of the wide variety of legacy wastes found on nuclear sites. Key services include:

- Consultancy on national waste strategy
- Comprehensive analytical service for radionuclide, chemical and physical analysis
- Design and development of remote retrieval equipment
- Immobilisation processing technologies

Technology Innovation

NNL has created an "Innovation" pipeline and is managing the delivery process to



ensure our innovations are commercially deployed. Specific examples include the radiation mapping devices RadBalTM and HiRadTM, together with muon detection, micro drilling and foam decontamination. Our internal R&D is largely focused within five signature research programmes that are central to NNL's mission. Areas cover activities which are of strategic significance to the UK and worldwide nuclear industry. The objective in each area is for the NNL to play a more strategic role in carrying out research Programmes are:

Spent Fuel and Nuclear Material Management

 Focuses on supporting ongoing operations, disposition of spent fuel, civil plutonium and civil uranium.

Waste Processing, Storage and Disposal

 All aspects of waste immobilisation and processing producing wasteforms for interim storage and disposal.

Fuel and Reactors

 Including all of the research carried out in support of reactors from the design of the fuel or reactor to the irradiated fuel.

Legacy Waste and Decommissioning

 NNL research associated with the post operational legacy of nuclear operations through to their end point, covering the associated legacy of inventory, equipment, plant and site.

Nuclear Security and CBRN

 Develop NNL's capability in civil non proliferation (including Safeguards) and nuclear threat reduction. Specific focus on data access and characterisation and analysis of radiological signatures.



FP7 project highlights

MATTER: MATerial TEsting and Rules

A European contribution to the rules and standards regarding GEN IV materials

he operational conditions envisaged for the various GEN IV reactor concepts, under consideration in the ESNII initiative, are quite demanding and significantly different from the service conditions of most of the commercial reactors operating today. The combination of severe conditions includes: exposure to high temperatures, high neutron dose and aggressive environments.

It is recognised that the available European standards and rules for material testing and for components design & fabrication do not appropriately and completely cover the specific materials to be used in GEN IV reactors nor the issues related with their relevant operating conditions and environments.

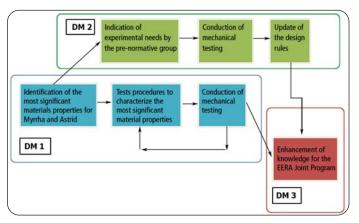
The scope of MATTER (MATerial TEsting and Rules) project is to contribute to cover the existing gaps by pointing out methodologies, recovering existing experiences, and performing experiments.

Main goals of the MATTER Project are:

- To develop and establish best practice guidelines for testing and evaluation, aimed to screen and characterise nuclear materials for all the ESNII innovative nuclear systems. These harmonised testing and evaluation guidelines will be susceptible to be adopted in the EU laboratories.
- To perform pre-normative activities in order to address the short term materials

needs of the ASTRID & MYRRHA projects with respect to the design and construction of the structural components. In particular, among others, the design rules for 9% Cr steel, material of the ASTRID steam generator, will be provided together with the related mechanical design properties and the updated welding and fabrication rules.

- To optimise the effectiveness and efficiency of the EERA Joint Program on structural materials for innovative reactors, on the base of the knowledge produced by the material researchers and of the industrial current practices.
- To carry out the fabrication in Europe, by different methods, of ODS steels,

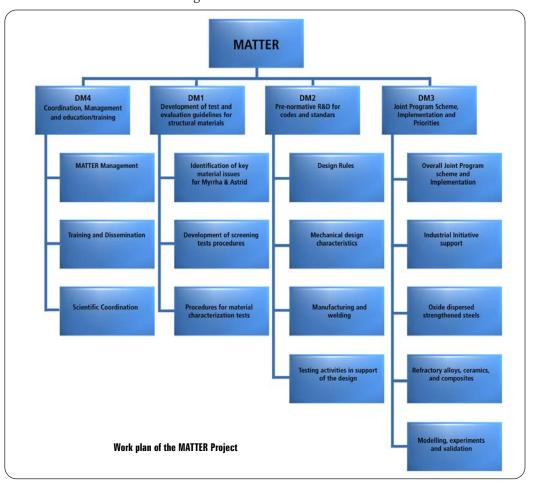


Interconnections among the main activities in MATTER

which are under consideration as candidate materials, in the medium-long term, for fuel cladding application.

In order to achieve the aforementioned objectives, the R&D activities will be focused on material testing, analysis of existing data and theoretical research. The relevant advantages of the MATTER approach are the access to a large amount of data, generated by national researches, and the wide comparability of results, thanks to the presence of 27 organizations including industries and steel makers.

Pietro Agostini E-mail address: pietro.agostini@enea.it



Project events

- FAIRFUELS
 "Putting the
 transmutation
 technologies in their
 energy context":
 9 10 February 2011,
 Stockholm,
 more information on
 http:///www.fp7-fairfuels.eu/
 - 15 March 2011: Deadline for the third ACTINET-13 call for proposals, more information and related documents on www.actinet-i3.eu
- EUROPAIRS Open
 Workshop: Nuclear for
 industry Perspectives of
 Nuclear Cogeneration
 26th May 2011,
 more information on
 http://www.europairs.eu/
- ADRIANA final seminar organized by UJV Rez: 11 — 12 July, Rez (Czech Republic), more information on: http://adriana.ujv.cz/
- Innovative Nuclear Power in Closed Fuel Cycle Scenario seminar: 5-8 December 2011, Physikzentrum Bad Honnef, Germany, more information on: http://www.nuklear.kit.edu/75.php

International events

Second European roundtable organized by the Institute for Radioprotection and Nuclear Safety (IRSN), ANCCLI and the European Commission

20 - 21 January 2011, Luxembourg

European workshop organized by the UK Science and Innovation Network (SIN) and Research Councils Energy Programme (RCEP)

24 - 25 January 2011, Switzerland

PIME 2011

 Conference on Public Information Materials Exchange, the annual focal point for professional nuclear communicators: 13 - 16 February 2011, Brussels http://www.euronuclear.org/events/pime/pime2011/index.htm

RRFM, the European Research Reactor Conference

 Conference on Public Information Materials Exchange, 20-24 March 2010, Marrakech http://www.euronuclear.org/meetings/rrfm2011/index.htm

China - Euroatom Nuclear Energy Cooperation Workshop

24-25 March, Shenzhen (China)

EU Sustainable Energy Week 2011

11 – 15 April 2011, Brussels
 http://www.eusew.eu/index.php?option=com_see_eventview&view=see_eventdetail&opnr=1&eventid=233&index=1&date=1270936800&sortType=-1

2011 International Congress on Advances in Nuclear Power Plants (ICAPP 2011)

 2-5 May, 2011, Nice http://www.icapp.ans.org/icapp11/index.html

NESTet 2011: NUCLEAR ENGINEERING SCIENCE AND TECHNOLOGY

 15 - 18 May 2011, Prague http://www.euronuclear.org/events/nestet/nestet2011/index.htm

PLIM & PLEX Europe 2011 conference and exhibition

 17 - 18 May 2011, Paris <u>http://www.arena-international.com/plimplexeurope11/</u>

The 4th Annual International Conference on Sustainable Development through Nuclear Research and Education

25 - 27 May 2011, Pitesti (Romania)
 http://www.nuclear.ro/conference/nuclear2011/Nuclear 2011 first call.pdf

International Atomic Energy Expo:

 19 - 21 September 2011, Vienna <u>http://www.nuclearpower-europe.com/index/exhibition-information/atomic-energy_event.html</u>

SET Plan conference:

28 - 29 November 2011, Warsaw http://www.setplan2011.pl/

Contact information:

F-BRIDGE-School-2011.html

index.php/School/

SNETP secretariat: secretariat@snetp.eu SNETP website: http://www.snetp.eu SNETP internal workspace (members only): https://extranet.snetp.eu

Contact the secretariat to be given a login and a password.

SNETP Calendar

- 20 21 January 2011 Executive Committee n. 10 (Madrid)
- 9 February 2011 ESNII meeting (Paris)
- 21 March 2011 Gen II/III TWG (Budapest)
- 31 March 2011 Governing Board n. 7 (Rome)
- 29-30 June 2011 ExCom no.10 (Paris)
- 5 October 2011 Governing Board n. 8 (Ljubljana)
- 29 November 2011 General Assembly n. 3 (Warsaw)