

REPORT

COORDINATION MEETING

“Strengthening Sustainability of Nuclear Research and Development Institutes in the Modern Science and Technology Environment”

RER/0/031

Vienna, Austria

16 - 18 November 2009

1. Introduction

The meeting was attended by 24 participants coming from 18 institutions in 14 countries, as well as by Ivan Videnovic (PMO, IAEA), Oszwald Glöckler (TO, IAEA), Kevin Alldred,(INEG, USA), and Sean McCarthy, (Hyperion, Ireland).

The purpose of the meeting was:

- to review national activities in the Member States under the TC Project RER/0/031;
- to get the feedback of project Counterparts on the activities organized at the regional level;
- to review the project workplan for 2009 – 2011 and in particular discuss the idea of organising in 2010 a joint IAEA, CERN, WIPO advanced Regional Training Course on “Nuclear RDIs and Intellectual Property Rights”, coupled with a high-level meeting.
- to discuss the role of the IAEA in responding to the challenges that the new funding environment poses to nuclear RDIs;

The meeting was opened by Mr. Manase Peter Salema, Director of the European Division of the IAEA Technical Cooperation Department, and co-chaired by Mr. Ivan Videnovic of the IAEA Technical Cooperation Department and Mr. Kevin Alldred from International Nuclear Enterprise Group.

In the introductory section, Mr. Oszwald Glockler of the IAEA Nuclear Power Engineering Section has given the presentation of the report “Nuclear Research and Development Institutes in Central and Eastern Europe.” Mr. Glockler noted that there is a growing need for the researches and other services of the nuclear RDIs. At the time of the meeting, 61 countries had requested support from the IAEA on what they need to introduce nuclear power.

During the meeting, the participants provided an overview of the situation in their institutions, with the focus on recent initiatives and activities in relation to the project. The meeting then discussed the workplan for RER/0/031 for the remainder of the current cycle (2010-2011).

2. Presentation of the report

One of the main objectives of the IAEA project RER/0/023 between 2004-2008 was to map the status of nuclear research institutes in Central and Eastern Europe. This culminated in the report “Nuclear Research and Development Institutes in Central and Eastern Europe” which was published in June 2009.

The report was based on information collected during meetings at the IAEA in Vienna, Austria, 13 field assessment missions to assess in detail the status of relevant RDIs in selected countries, and a self-assessment survey based on survey forms that were distributed to the RDIs on two occasions in 2005 and 2007. Altogether, 25 RDIs from 15 countries participated in the survey. The data thus collected were used to map

the status of nuclear research institutes in Central and Eastern Europe, and formed the base for the analysis in the report.

Mr. Kevin Alldred presented the report during the first day of the meeting. Discussion on the report followed, in which the meeting participants unanimously endorsed the report as an insightful review of the RDI status that is useful to the managers and decision makers associated with the RDIs.

3. Country presentations, Update of recent initiatives in the Member States

Representatives from 14 countries from the Central and Eastern European region made presentations of their respective 18 RDIs.

Highlights from the presentations are given below:

Albania, Nikola Civici, Centre of Applied Nuclear Research (CANP)

Status: Following the reformation of scientific research in Albania the status and the role of the Albanian Academy of Sciences has been changed considerably. The former institute of Physics is now part of the University of Tirana, and renamed as the Center of Applied Nuclear Research. The CANP staff has now been decreased to 20 researchers and 5 technicians, with forty percent of the staff due to retire in 5 to 10 years. The Centre staff must lecture at the University for at least 30% of their working time. However, there is limited opportunity for experienced researchers to teach in their specialist field; most of the teaching is more general in nature. The Centre does not have financial autonomy in the new structure, and approval by the dean of the University is required for all investments, and funds cannot be retained by the Centre. However, the Centre offers significant external services including the radiation safety training for customs officers, and acting as a technical and scientific support organization (TSO) for the radiation protection commission.

Recommendations for IAEA supported activities: The Centre recommends training in price setting for services, a workshop to help strengthen the links between the Centre and its stakeholders, and an expert mission to Albania to evaluate the status of CANP.

Bulgaria, Pavlin Groudev, The Institute of Nuclear Research and Nuclear Energy (INRNE)

Status: INRNE has had to cope with continued staff reductions over the past two years. Masters degrees are taught at the institute, and the institute operated the national waste repository program until recently. The institute is a pure research institute but it obtains 66% of its funds from non-government sources. INRNE completed 26 FP6 Projects from 2004 – 2008, and is involved in 10 projects under FP7. It has recently initiated a cluster computing project in conjunction with CERN. Drafting regulations on control of nuclear materials. INRNE has IQNet certification according to ISO 9001 and ISO 14001. With IAEA support, INRNE signed an agreement with UJV in the Czech Republic covering technical topics such as the treatment and transportation of spent fuel from research reactors, and boron neutron capture therapy development, as well as business related issues such as the economy

and marketing of the institute. An INRNE PhD student visited UJV as part of his thesis preparation with RER/0/023 support during 2008, and INRNE hosted the IAEA/WIPO “Regional Training Course on Innovation, Technology Transfer and Successful Technology Licensing (STL) in Research & Development (R&D) Institutions” in Sofia in May 2009.

Recommendations for IAEA supported activities: Training in increasing management skills, training for European FP7 presentations.

Croatia, Stjepko Fazinić, Ruđer Bošković Institute (RBI)

Status: RBI is a large, multidisciplinary institute, with approximately 20% of its activities in physics. Both budgets and staff have continued to increase throughout 2008, though 2009 is particularly challenging in the context of the global financial crisis. The Department of Experimental Physics currently participates in four FP7 projects and is negotiating its role in a fifth. During 2009, RBI participated in three of the RER/0/031 initiatives, with two participants attending the workshop “How to Present Research Activities to Different Audiences”, two attending the regional workshop “How to design a successful strategy and undertake research at the European level“; and two participants from Rudjer Inovations Ltd attending the Regional Training Course on Innovation, Technology Transfer and Successful Technology Licensing (STL) in Research & Development (R&D) Institutions.

Recommendations for IAEA supported activities:

1. Support participation at the FP7 Info days that are organized by the European Commission each year following the call for proposals for thematic priorities under FP7 Cooperation programme.
2. Organize a workshop on the EU IPA Program (Instrument for Pre-Accession assistance), noting that the 2007-2013 budget for the pre-accession process is 11,468 billion Euro. This budget is accessible to the candidate countries: Macedonia, Croatia, and Turkey, as well as the potential candidate countries: Albania, Bosnia and Herzegovina, Montenegro, and Serbia.
3. Support a regional „Workshop for Experienced Framework 7 Advisors (Hyperion Ltd.)
4. Support RBI participation at the Proton Europe Annual Conference, which has a focus on Knowledge Transfer activities such as identification of IP, managing a knowledge transfer, marketing of research results, and best practices for commercialization of research results.
5. Support Study Visits to excellent research support offices in Europe for the staff of RBI’s Office for International Projects, including a visit to Joanneum Research, Graz, Austria. RBI’s ‘Office of International Projects’ offers to host bilateral visits from other RDIs that are planning to set up a Research Support Office, and to provide training related to organization and realization of administrative support for project proposal preparation and project and financial management of EU projects, marketing and business development.
6. Support courses at RBI on „how to write competitive proposal for FP7” and Strategic planning and Strategy for FP7 and FP8 at either national or sub-regional level.

7. Support the 2010 RBI Open Day and 60th anniversary celebration by supporting the participation of prominent physicists funding simple cosmic ray detector for demonstration purposes to general public.
8. Support bilateral and multilateral contacts with research groups from other participating institutes with the goal to prepare joint R&D projects (bilateral, collaborative EU and IAEA projects, etc), including short scientific visits, joint measurements, and infrastructure sharing.

Hungary, István Vidovszky, Hungarian Academy of Sciences KFKI Atomic Energy Research Institute (AEKI)

Status: Since the 2008 coordination meeting, the institute VEIKI has been reorganized, and its nuclear research part integrated within AEKI. AEKI is involved with VVER safety-related projects in support of the PAKS NPP, in the preparation work for a new PAKS NPP, and in the GENIV program. It participates in the EU projects SARNET, PERFECT, NURESIM, HOTLAB, and ENFTP, and the OECD projects, Halden, ROSA, PKL, and Sandia Fuel Project (SFP). The institute has started the conversion of the BRR research reactor to LEU fuels, and has completed the shipping of all pre-2005 spent fuel to Russia.

The Institute of Isotopes Co. Ltd (Izotop) provides isotope products and services and conducts scientific research in various fields including the interaction of radiation with matter, radiation chemistry, chemical reaction kinetics, and heterogeneous catalysis.

The main task of the Budapest University of Technology and Economics Institute of Nuclear Techniques (BME NTI) is to educate Hungarian undergraduate, and graduate students in the field of nuclear techniques and technology, and conducts research including reactor physics and **thermal hydraulics, radio-analysis, and develops simulation codes and instrumentation**. BME NTI operates the VR-1 Sparrow training reactor, and is planning renovation of the reactor to permit operation for a further 20 years. The training reactor is open for other countries and universities, and also for post-graduate short courses.

Lithuania, Eugenijus Ušpuras, Lithuanian Energy Institute (LEI)

Status: The parliamentary elections of 2008 and presidential election of 2009 have resulted in several changes for LEI. This includes a focus on developing a Baltic energy market, and a change in the qualification for national institutes, which now need at least 100 PhD researchers to qualify. Only two institutes, one of which is LEI) meet the new criteria. There is a shift toward applied research in support of Lithuanian industry, and from 2012, LEI will need to secure at least 25% of its funding from non-government sources as the government contribution is reduced. The Ignalina 1 NPP has already closed, and Ignalina 2 will be closed in 2009, ending nuclear power generation in Lithuania. A new NPP is proposed in concert with the other Baltic states and Poland, but this project is not yet funded. LEI is ISO 9001 and ISO 14000 certified.

LEI has many international projects, including 5 ongoing and 2 successfully completed with the IAEA; 11 projects under FP5, 1 current and 14 completed under FP6 and 6 projects started, and 1 in negotiation under FP7; 6 ongoing projects, 17

completed and 2 in negotiation with Intelligent Energy Europe, 1 completed with Leonardo da Vinci, 3 with INTERREG III and 1 in negotiation; 4 ongoing and 6 completed with COST; 2 ongoing and 1 completed with EUREKA; 1 ongoing with the Nordic Energy Research Programme (NERP); and 1 ongoing and 1 in negotiation with the Baltic Sea Region Programme 2007-2013.

Recommendations for IAEA supported activities: Organize training courses on how to present results to politicians; and share experience on how to work with the younger generation, noting that 2 of the top 100 PhD's in Lithuania have elected to join LEI. LEI offers to host such an IAEA organized meeting or event.

Montenegro

Ana Mišurović, Center for Ecotoxicological Research of Montenegro (CETI).
Slobodan Jovanovic, University of Montenegro Centre for Nuclear Competence and Knowledge Management (UCNC)

Status: CETI is now a self-financing public institution with research and investigations in the domains of radioactivity control, radioactive waste management, and environmental protection, control of illicit trafficking, and is the TSO for the Montenegro regulatory authority. The institute has ISO 9001 and accreditation ISO 17025 for more than 120 methods of analysis. **CETI** continues to participate in the IAEA RER/0/031 project. The IAEA FP7 training was highly valuable and CETI now has FP7, World Bank, UNESCO and EC IPA projects.

UCNC has a mission to become a national center of competence and expertise in nuclear related issues with a particular focus on assessing, creating, preserving and transferring nuclear knowledge. It plans to offer TSO services to the regulatory authorities and stakeholders, and advise the government on nuclear related issues. As part of the university it will develop curricula for nuclear related studies at all levels (from elementary education to university degrees) and facilitate student exchange with appropriate foreign institutions. UCNC is fully self-funding and cannot expect government funding. The institute has had recent commercial success with the ANGLE nuclear instrumentation code, which has been adopted by Amertek-EG&G in the U.S.

Recommendations for IAEA supported activities:

1. To repeat the course on how to prepare proposals for FP7 with a practical focus on actual projects.
2. To continue with training to increase managerial capabilities and business skills in nuclear RDIs
3. To continue to help strengthen links between nuclear RDIs and their stakeholders (the government, industry, university, science sector and society).
4. To help increase inter-institute partnerships in the Balkan and other SEE countries.
5. Provide additional benchmark data on R&D funding practices in different countries in the region.
6. CETI offers to host IAEA sponsored regional training courses and workshops Support an ANGLE users' workshop in ORNL, and help UCNC organize ANGLE validation for EU markets.
7. Support equipment upgrading at UCNC

8. Support visits by UCNC staff specialization in U.S., E.U. and Japan.

Poland:

Z. Zimek, Institute of Nuclear Chemistry and Technology (INCT)

Janusz Jaroszewicz, Institute of Atomic Energy (IAE)

Status: INCT is interdisciplinary character, with activities in basic research, R&D as well as various services. Staff levels have remained unchanged since the previous coordination meeting, though institute income has grown over the most recent three years. It is proposed to restructure the nuclear RDIs in Poland, with the unification of institutes to form the National Laboratory for Nuclear Research on the basis of INCT, IEA Polatom, IPJ, IFPiLM, and the appointment of a vice-minister to oversee projects. INCT scientists participated in 18 international research projects: 3 in FP6 and FP7, 3 in COST and 1 from the Transition Facility); 6 IAEA projects, and four 4 bilateral co-operations.

IAE is seeking cooperation with commercial organizations for services and products provided by the institute, for example Molybdenum-99 radioisotope. IAE has attended several RER/0/031 activities and is active in the IAEA research reactor coalitions project.

Recommendations for IAEA supported activities:

1. Training on best practices for the transfer and commercialization of IPR.
2. Support bilateral visits to create inter-institute networks.
3. Arrange a workshop with the best EU institutes to learn best practice
4. Hold a high-level conference of RDIs and their government representatives on policy and strategy making.
5. Repeat courses on IPR exploitation and business management with a particular focus on negotiating skills.
6. Repeat courses on preparing FP7 proposals
7. Repeat courses on building links with stakeholders.
8. Support initiatives to increase partnerships and infrastructure sharing in the region.

Romania: Vlad Avrigeanu, Horia Hulubei' National Institute of Physics and Nuclear Engineering (IFIN-HH)

Status: After a period of increasing budgets, the Romanian institutes have been severely impacted by the global financial crisis, and budgets are reduced by more than 30% in 2009. The staff of IFIN-HH has been reduced to 772 to 684. IFIN-HH has continued to participate in RER/0/031, with participation in Regional Training Course on "Innovation Promotion Technology Transfer and Successful Technology Licensing (STL) in research and development institutes", the Regional Workshop on "How to present research activities to different audiences", the IAEA Expert Mission to Bucharest, Romania in June 2009), the Regional Workshop on "How to design a successful strategy and undertake research at a European Level". IFIN-HH is actively seeking partners for FP7 projects.

The Institute of Nuclear Research (INR) at Pitesti provides scientific and technical support for the safe operation of the Cernavoda NPPS, and for the planned new

Romanian NPPs. The institute contributes to the international R&D effort to develop advanced Gen III and Generation IV reactors. Staffing levels have also been reduced at INR, though less so than for IFIN-HH, and budget levels have been maintained. However, the global financial crisis has prevented expansion of Institute revenues from private and other research funds. INR participated in the RER/0/031 mission June 2009. INR has been active internationally with 5 new FP7 projects, and new contracts to work with the CANDU owners group and a research agreement with SCK-Mol of Belgium in July 2009;

Recommendations for IAEA supported activities:

1. Organize a meeting for stakeholders to illustrate the managerial and financial complexities facing the institutes.
2. Assist with development of a strategy for use of E.U. Human resource funds to support RDI projects. Most of this money is repatriated to Brussels each year because of a lack of suitable projects.
3. Conduct a workshop on management, strategies and best practices for the National Nuclear Energy Scientific and Technical Support Institutes in Romania 2010 as the follow up of the June 2009 mission to Bucharest

Serbia, Milan Orlic, Vinca Institute of Nuclear Sciences (Vinca)

Status: Vinca is multidisciplinary institute, with nuclear science accounting for around 20% of the institutes activities. In 2009, the Serbian government has reorganized Vinca in order to improve sustainability. This included the formation of a new public company “Nuclear Facilities in Serbia” (PC NFS). The main tasks of PC NFS are to manage and maintain all nuclear objects in Serbia, decommission the RA reactor, operate the RB reactor, and manage the radioactive waste stored at Vinca. In addition PC NFS will be active in the areas of safety and security for nuclear facilities and materials, radiation practices, environmental monitoring and protection, and record keeping of sources, exposures and waste. It will also be responsible for international cooperation with the IAEA, EU, and US, for example.

Recommendations for IAEA supported activities:

Support training for solicitation of international funding and efforts to improve sustainability.

Slovenia: Matjaž Korun, Jožef Stefan Institute (JSI)

Status: The Laboratory for Radiological Measuring Systems and Radioactivity Measurements (LMR) is part of JSI. It is certified to ISO 17025 and derives 90% of its income from contracts for routine measurements. **LMR maintains the national metrological standard for the unit Bq for gamma- and X-ray emitters**, and has participated in about 200 international proficiency tests and intercomparison exercises, becoming regarded as one of the five best laboratories for gamma-ray spectrometric measurements of environmental samples in the world. A major activity is drinking water analyses required to meet EU requirements. The laboratory is seeking additional customers in the bottling industry and the geological societies, that will have a similar need for high quality water analyses. A key issue is how to persuade customers of the scientific usefulness of the measurements.

Recommendations for IAEA supported activities: To provide training or experts for the marketing of services, including identifying and communicating with potential customers.

Turkey, Dr. C. Tuğrul Zeyrek, Sarayköy Nuclear Research and Training Center (SANAEM)

Status: The main duties and responsibilities of Turkish Atomic Energy Authority (TAEK) include recommending national policy and the related plans and programs regarding the peaceful utilization of atomic energy for the approval of the Prime Minister, executing and supporting nuclear energy R&D, to train personnel in the nuclear field with cooperation with the universities and other related organizations, the approval and licensing of site selection, construction, and operation of nuclear facilities and radioactive sources, and preparing and implementing decrees and regulations for nuclear and radiological safety.

TAEK has the following R&D facilities:

Çekmece Nuclear Research and Training Center (ÇNAEM), İstanbul, which specialises in nuclear applications and technology such as research reactors, nuclear engineering, reactor safety, nuclear materials, non-destructive testing, nuclear electronics, radiobiology, radioactivity and analytical measurements and analyses, environmental radioactivity monitoring, radioactive waste management, calibration of nuclear instruments, health physics.

Sarayköy Nuclear Research and Training Center (SANAEM), Ankara, which specialises in radioactivity and analytical measurements and analyses, accelerator physics, nuclear medicine, health physics, detection of irradiated food, nuclear biotechnology, polymer chemistry, detector and dosimeter materials and neutron physics with respect to nuclear applications. SANAEM has a Gamma Sterilization Facility, and a Proton Accelerator Facility with a medical Diagnosis Center is under construction.

Turkish States Nuclear Cooperation, Research and Training Center (TÜDNAEM), Ankara, for cooperation in peaceful uses of nuclear energy among the countries of the Central Asia.

TAEK is mainly supported from the government budget with supplementary funds from national and regional projects, and international organizations such as the IAEA, and EU. SANAEM and ÇNAEM are accredited to ISO/IEC 17025.

Recommendations for IAEA supported activities:

Provide training courses or workshops on the following topics:

1. Coincidence techniques for primary activity determination (γ - γ ; β - γ ; $4\pi\beta$ - γ ; $4\pi\alpha$ - γ) for new researchers, gross alpha/beta, Ra-226 measurement by Liquid Scintillation and Ra-228 measurement by proportional counter, Np (Neptunium), Po (Polonium) and Cm (curium) analysis by alpha spectrometry
2. SSDL (Photon dosimetry, especially Neutron dosimetry calibration), Neutron Detection and Spectroscopy, short-lived radioisotopes using in nuclear medicine applications, (including I-123, In-111, Ga-67, Tl-201, Pd-103, F-18, I-124, O-15, C-11, N-13) and their radiopharmaceuticals production in the proton accelerator facility

3. Dating using nuclear techniques,
4. Material conformance tests for using in Nuclear Technologies

Ukraine: Prof. Dr. Ihor Kadenko Taras Shevchenko National University of Kyiv

Status: The global economic crisis has deeply affected the Ukrainian RDIs, with a resulting reduction in funding, and focused on areas other than scientific reforms. Services to the nuclear power and medical industries are less affected, because Ukraine has 15 operating VVERs and 2 more under construction, and plans to expand nuclear medicine. The three Ukrainian institutes associated with RER/0/031 are the Kharkiv Institute for Physics and Technology (KIPT), the Kyiv Institute for Nuclear Researches (KINR), both of which are part of the National Academy of Sciences of Ukraine, and the Taras Shevchenko National University of Kyiv: International Nuclear Safety Center of Ukraine (INSC), and its spin-off the Nondestructive Examination Training and Certification Facility (NDEF). KIPT offers irradiation services with LINACs, and has Europe's only "Cyberknife" a LINAC based medical tool. The institute conducts residual life time assessment and extension for reactor pressure vessels, internals and pipelines, and develops new reactor materials for advanced reactor concepts. It is currently involved with a fuel qualification project in conjunction with Westinghouse.

University of Kyiv is active in the following directions: High energy physics. Nuclear power, and application of nuclear technologies in medicine (construction of 2 PET centers; engineering support for Cyber-knife operation; licensee training in radiation protection etc.), nondestructive examination (NDEF) for WWER NPPs RPV, pipes, other equipment. INSC is participating in the CBM and ZEUS experiments in Germany, and has ongoing discussions to join a project at Fermilab (FNAL) and other centers.

INSC participated in the RER/0/031 workshops on IPR commercialization in Sofia and "How to present research activities to different audiences" in Vienna. Material from these workshops has been incorporated into courses at University of Kyiv for training of Masters (IPR; organization of scientific research), and the application of the course materials were presented at Science & Technological Council of SNRCU "Ensuring RPV safe operation of WWER NPPs of Ukraine" in October 2009. NDEF also participated in the RER/0/031 workshop "How to design a successful strategy and undertake research at a European level" in Vienna in September 2009, and has jointly developed successful tender proposals for development of VS system of outer surface of reactor pressure vessel with the French company, ONET.

Recommendations for IAEA supported activities:

1. To help create the environment for science development
2. To provide information for policy makers on approaches to the management of nuclear science and technology, including establishing priorities establishing, addressing major national problems, development of performance indicators development, funding distribution) through IAEA missions, for example.
3. Use the experience gained by RBI and LEI to balance fundamental and applied research to help other countries in CEE.
4. To enhance "training" of nuclear RDIs under FP7 by establishing country groups led by experienced organizations such as RBI, LEI and INRNE.

4. Summary of RER/0/031 activities since the coordination meeting in Rez

An overview of the present project objectives and activities was given, the new project concept for the period between 2009 and 2011 presented, and proposals for activities and workplan discussed.

The main activities under the RER/0/031 in 2009 have been:

- An IAEA/WIPO Regional Training Course “Innovation, Technology Transfer and successful technology licensing in R&D institutions”, Vienna, Austria, October 28 – 31, 2008.
- An IAEA/WIPO Regional Training Course “Innovation, Technology Transfer and Successful Technology Licensing (STL) in Research & Development (R&D) Institutions”, Sofia, Bulgaria, May 25 – 29, 2009.
- Mission “Strengthening the capabilities of the Institute for Nuclear Research as a Key Organisation for Scientific and Technical support for the Nuclear Power Program in Romania” Bucharest, Romania June 16 – 17, 2009
- IAEA/Hyperion Training Course “How to present research activities to different audiences” Vienna, Austria, June 2009
- IAEA/Hyperion Training Course “How to design a successful strategy and undertake research at a European level”, Vienna, Austria, September 2009

Several of the meeting participants commended the courses, noting that the training had been directly useful, and enabling them to improve their financial and strategic situation.

5. Discussion of proposals for RER/0/031 for 2010 and 2011

Many attendees noted that they faced two critical challenges to their long term sustainability, acquisition of sufficient funding, and attraction and retention of young specialists. In addition, several institutes reported an increasing issue with knowledge retention as older staff retire.

There was general support for the IAEA suggestion of a workshop on the role of the TSO should be taken forward. In addition, the meeting participants made a number of suggestions, as listed below.

Table 1: Recommended Topics for RER/0/031 and Outline Plan

Topic and Comment	Suggested Date Location (№ of RDIs advocating)
<p>High Level Meeting: “Contribution of Science and Technology and Nuclear Research to Economic Recovery, Security and Growth”</p> <ul style="list-style-type: none"> • Hosted by IAEA with around 60 people attending • Senior politicians to be invited to attend, as well as RDIs: <ul style="list-style-type: none"> ○ flag urgency of situation facing RDIs to decision makers ○ importance/connection between science funding and economic growth ○ show what nuclear science can/should offer ○ Present nuclear science and technology as an engine of knowledge growth and economic strength. • Presentation from Mr. Aho (if available) on government perspectives on what RDIs could/should contribute • Policy issues related to retention of young experts in national institutions • Investigate consultancy/position paper/presentation on use of EU Human Resource funds (through labour ministries) by RDIs for education and training, research and development, technology/knowledge transfer to society. • Help create a positive environment for nuclear science 	<p>H1 2011 Vienna (All)</p>
<p>Training course “How to explain the relevance of RDIs to political priorities and strengthen links between RDIs and stakeholders”</p> <ul style="list-style-type: none"> • Co-scheduled with the High-level Meeting • Help to strengthen the link between institutes and stakeholders 	<p>H1 2011 Vienna (All)</p>
<p>Workshop “Success in applying for FP7/ IPA projects”</p> <ul style="list-style-type: none"> • For advisors/ trainers <ul style="list-style-type: none"> ○ National representative + institute representative • Include presentations from Brussels officials on requirements • Invite advisors from West European institutions to attend • Include training input from Hyperion on proposal preparation’ • Input from Brussels officials on current program • Include interactive review of actual proposals 	<p>Q2 2010 RBI (All)</p>
<p>Workshop “Success in applying for Euratom funded projects”</p> <ul style="list-style-type: none"> • For Nuclear RDIs • Presentations from Brussels officials on requirements • Include training input from Hyperion on proposal preparation • Recommendations from the CEE RDIs as to which research centres should be represented 	<p>2011 W. Europe (All)</p>
<p>Workshop “How to retain young specialists”</p> <ul style="list-style-type: none"> • Share best practice in young specialist retention <ul style="list-style-type: none"> ○ Scientific opportunities ○ Tenure ○ International exposure • Attendance by 1 research manager + 1 young specialist from each RDI 	<p>Q3 2010 LEI (All)</p>

IAEA/WIPO training course “IPR management and exploitation <ul style="list-style-type: none"> • Follow successful format of previous IAEA/WIPO courses • Possibly use WIPO distance learning to pre-qualify participants. • Include topic of how to identify exploitable IPR. • Share best practice for commercialization of IPR 	2010 and 2011 Geneva (All)
Training Course “Requirements for Successful TSO Activities”	(All)
Training course in managerial and business skills <ul style="list-style-type: none"> • Marketing skills – how to identify customers, find issues that are of interest to the market • Pricing skills • How to develop performance indicators • Importance of ISO 9001, 17025 QA standards – adoption of QA discipline by scientists 	Q2 2011 CETI (5)
To increase inter-institute partnerships in the region <ul style="list-style-type: none"> • Support joint measurements by different institutes • Support bilateral visits of experts to other facilities and research groups • Support study visit to excellent research support offices • Access experience of RBI, LEI in managing fundamental/applied science balance • Increase infrastructure sharing • Support visits of specialists to institutes that are successful in marketing their products and services 	(5)
Workshop “translation of international legal systems to national nuclear regulation” <ul style="list-style-type: none"> • Would create market for RDI services 	(1)
Support ANGLE deployment by UCNC <ul style="list-style-type: none"> • Users workshop at ORNL • Help distribute free copies of ANGLE software • Support equipment upgrading at UCNC • Support travel of UCNC specialists to U.S., E.U. and Japan 	(1)
Workshops for TAEK as follows: <ul style="list-style-type: none"> • Measurement techniques for new researchers: Coincidence counting for primary activity determination (γ-γ; β-γ; $4\beta\pi$-γ; $4\alpha\pi$-γ); gross alpha/beta; liquid Scintillation (Ra-226); proportional counter (Ra-228), alpha spectrometry (Np, Po and Cm) • SSDL - Photon dosimetry, especially Neutron dosimetry calibration), Neutron Detection and Spectroscopy, • Short-lived radioisotopes and radiopharmaceuticals in nuclear medicine applications, (I-123, In-111, Ga-67, Tl-201, Pd-103, F-18, I-124, O-15, C-11, N-13) and production in the proton accelerator facility, • Dating using nuclear techniques • Material conformance tests for using in Nuclear Technologies 	(1)
Support RBI open day and 60 year anniversary celebrations <ul style="list-style-type: none"> • Funding for cosmic ray detector • Support for visits by top physicists. 	(1)
Expert mission to Tirana	(1)