



EUROPEAN
COMMISSION

Community research



SecIGD2 project

(Contract Number: **323260**)

Newsletter Month 9 DELIVERABLE (D-N^o: **4.1**)

Author(s):

Reporting period: e.g. **01/01/2013 – 30/06/2014**

Date of issue of this report: **13/09/2013**

Start date of project: **01/01/2013**

Duration: **36 Months**

Project co-funded by the European Commission under the Seventh Euratom Framework Programme for Nuclear Research & Training Activities (2007-2011)		
Dissemination Level		
PU	Public	X
PP	Restricted to other programme participants (IGD-TP participants by ProjectPlace) including the Commission Services	
RE	Restricted to a group specified by the partners of the SecIGD2 project	
CO	Confidential, only for partners of the SecIGD2 project	

History chart			
Type of revision	Document name	Partner	Date

Reviewed by

EG 11 members, Ray Kowe, Marjatta Palmu, Philippe Lalieux

Approved by

Coordinator of the SecIGD2 project



Chairman's Word

Philippe Lalieux
IGD-TP Chairman

Dear Reader,

You are reading the first Newsletter of the Implementing Geological Disposal of Radioactive Waste Technology Platform.

Created in 2009, IGD-TP currently consists of **107 organisations**. The key task of our platform is to promote joint technical research projects and support actions on networking, dissemination and Education and Training.

The Strategic Research Agenda has paved the way for the next twelve years, during which we intend to launch around 12 projects or initiatives. In 2012, **five Technical and organisational working groups** are currently active. In 2009-2013, IGD-TP has supported **7 European projects**.

Acknowledged in the Council Directive 2001/70/EURATOM as a key player to facilitate access to expertise and technologies for the benefit of all Member States, IGD-TP has the ambition to become **the focus point of coordination of RD&D in the field of geological disposal at the European level**. As IGD-TP represents also the major industrial leaders in Nuclear Waste Management through its Executive Group, it may address technical, scientific and also societal issues of all European national programmes regardless of their level of development.

Every year, IGD-TP organises an **Exchange Forum (EF)** where all interested participants can express their views and interest in Topics identified as top priorities to achieve our vision. The next EF will be held in Prague, October 29-30. **Five working groups** (WGs) will help to prepare new activities. Among them two technical WGs will outline projects on common interest with the regulators and Technical Support Organisations (Sitex) on one hand and the major utilities (SNETP) on the other. In addition, we welcome to the meeting the Chairman of the European Economic and Social Committee (EESC). With the EESC, we intend to develop activities towards a higher stakeholder's involvement in our projects.

The Exchange Forum is the unique place to bring forward your projects and present how they fit our goals. The floor is yours! See you in Prague October 29-30!

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"By 2025, the first geological disposal facilities for spent fuel, high-level waste and other long-lived radioactive waste will be operating safely in Europe."

The IGD-TP Newsletter will be issued every nine months and aims to keep all interested parties up-to-date with the latest news regarding the IGD-TP activities.

Website: <http://igdtp.eu>

Intranet: <https://service.projectplace.com/>

Contact: secretariat@igdtp.eu

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ANNOUNCEMENT

4th IGD-TP Exchange Forum (EF4)

29-30th October 2013, Prague, Czech Republic

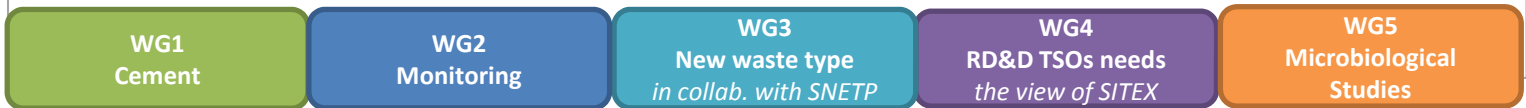
For this EF4, the idea is to focus on new ideas that could complement the Strategic Research Agenda priorities and to involve in a more efficient way new actors of the RD&D.

The **aims** of this EF4 are:

1. Bring forward new projects in a **bottom-up approach** in the framework of the deployment of activities described in SRA/DP;
2. Identify **new areas of collaboration** related with **SNETP** (Sustainable Nuclear Energy Technology Platform) future needs;
3. Identify areas of common interest with **Technical Support Organisations** (TSOs) through **SITEX** (Sustainable network of Independent Technical EXpertise for radioactive waste Disposal)
4. **Inform** on working groups activities and EC projects;
5. Develop new **R&D programmes** on stakeholder involvement.

This EF4 will help in preparing for future projects and in initiating or increasing collaboration between research organisations, waste producers and Waste Management Organisations.

The EF4 will take place over two days allowing in depth exchanges through plenary sessions. As well, **five technical working groups** are planned to discuss priorities and new projects.



Registration & Call for presentations

EF4 participants are strongly encouraged to express their interest in participating to the Working Groups by proposing subject of presentations, projects or ideas.

To register and submit a presentation this [Registration & application form](#) needs to be filled in and sent to the Secretariat secretariat@igdtp.eu.

Deadlines

Registrations will be open until September 30, 2013.

All information and documentation related to the EF4 are to be found on the IGD-TP website www.igdtp.eu

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IGD-TP news & activities

From the SRA to a practical activity, how does it work?

The **Strategic Research Agenda (SRA)** identified under its Key Topics 36 Topics which are grouped in 16 **Joint Activities (JAs)** in the **Deployment Plan (DP)**. Each JA has a leading organisation and the **Executive Group (EG)** members decided on their respective participation. The content of the 16 JAs is annually updated by the JA leader in the **Master Deployment Plan (MDP)**. The MDP 2013 and is available on www.igdtp.eu.

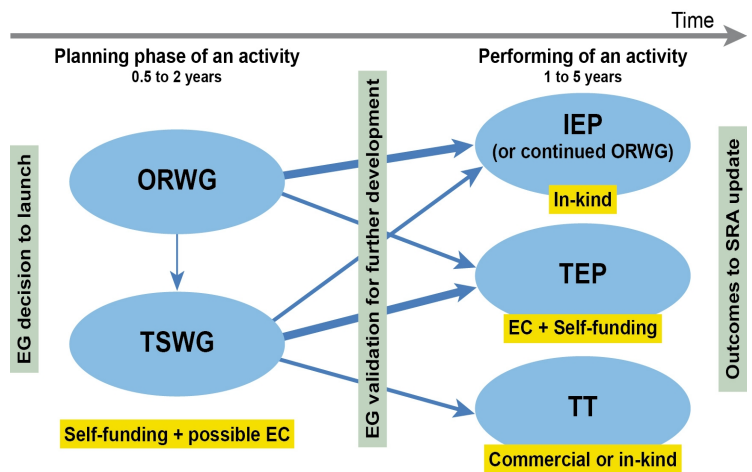
How does it work?

The EG meetings decide upon the launch of a **Technical/Scientific Working Group (TSWG)** or an **Organisational Working Group (ORWG)**. During the planning phase of an activity the TSWG or ORWG define what could be the scope of a **Technical Project (TEP)** or an **Information Exchange Platform (IEP)** (or the continuation of the Organisational Working Group). The working groups (WGs) comprise EG members or their representatives and interested EF participants.

The WG leaders report to the EG on the outcomes of the discussion. A typical outcome can be a proposal for an EC co-funded project or the preparation of a report.

A TEP is an activity that covers technical or scientific work on a specific SRA Topic.

The sharing of the costs can consist of different funding models like shared (direct) payments by the partners.

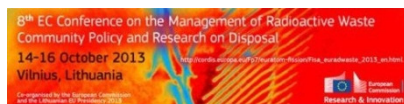


In 2012-2013, **five TSWG** have been active and have led to **two EC co-funded projects** (DOPAS and CAST) and two proposals for a future H2020 call.

The organisation of an IEP or ORWG is based on mutual understanding between partners. Each party covers their own costs of participation and offer to organise platform meetings in turn. In 2012-2013, two ORWG on **Competence Maintenance Education and Training (CMET)** and **Nuclear Knowledge Management (NKM)** are active.

IGD-TP news & activities

EURADWASTE'13



Co-organised by the European Commission and the Lithuanian EU Presidency 2013, the **8th EC Conference on the Management of Radioactive Waste** will be held on **14-16 October 2013**, in Vilnius, Lithuania.

The objective will be to present an overview of all recent EC activities in the field of radioactive waste management with the focus on geological disposal as the main challenge, including RD&D, policy, strategic, legislative and socio-political aspects.

Euradwaste'13 will take place on the eve of the new Euratom programme complementing H2020. In this context, the **strategic integration and activities of IGD-TP will be covered against the backdrop of the evolving EU policy in RD&D in general, and the trend towards supporting programmes rather than projects** in which the EC is now advocating partnering in research and innovation and Joint Programming of Member States research programmes.

First announcement and preliminary agenda can be found at http://cordis.europa.eu/fp7/euratom-fission/euradwaste-2013_en.html

New logo

Early 2013, IGD-TP adopted a new logo design with a new motto : "safe solutions for radioactive waste".

A new Technical project

IGD-TP will have a new Euratom FP7 project under the Joint Activities 3 – Waste forms and their Behaviour. Indeed, **the CAST project (Carbon-14 Source Term)**, coordinated by the NDA (UK) has successfully completed the negotiation stage with the European Commission. The start date is not fixed yet. More information will follow soon on the IGD-TP website!

CC4 - COMMUNICATION & DISSEMINATION

SecIGD2 RD&D dissemination Working Group

The working group (WG) on **RD&D dissemination** is part of SecIGD2 Work Package 2 "Support for networking, structuring and developing RD&D competences in countries with less advanced geological disposal programmes".

The **first WG meeting** was held at the Geological Society, Burlington House London in May 2013. There were presentations on background to SecIGD2, geological disposal in member countries, technological transfer and NEWLANCER.

This was followed by an **open forum on needs and common issues of less advanced programmes** (Technology transfer; Access to information; Centralized accessible database; Access to experts; Link to other groups including NEWLANCER, ERDO and NAPRO; Attendance at relevant conferences; Less advanced programmes learning from nearby programmes e.g. Netherlands and Belgium; Use of other people's facilities e.g. underground research labs, site visits to existing facilities).

In light of the discussions it was decided that the initial output would be a **questionnaire** to gain wider input on RD&D information needs from IGD-TP partners. It will be used to:

- i. identify specific needs of less advanced programmes; analyse how they could be taken into account in the joint activities;
- ii. identify key open specific documentation accessible on specific topics established already and used by more advanced countries as a reference or state of the art;
- iii. prepare proposals to implement these needs in the existing Technical/Scientific and Organisational Working Groups already established in the technology platform;
- iv. identify areas of possible technology transfer through specific agreements between more and less advanced programmes.

The responses from the questionnaire will be evaluated, compiled and presented to the **4th Exchange Forum** meeting in October and used to determine future activities of the WG.

By R. Kowe and T. Beattie, NDA

JA14- COMPETENCE MAINTENANCE, EDUCATION AND TRAINING

Competence Maintenance, Education and Training Working Group (CMET)

The **CMET group** has started working. The formation of the group took place in connection with the **IGD-TP third Exchange Forum** in Prague followed by the first CMET meeting in Berlin at BGR's facilities. The meeting arrangements and the volunteer work of the group are supported by the IGD-TP Secretariat project (SecIGD2). A total of 25 organisations from 13 European countries have expressed interest to join the working group.

The first meeting provided an **update on the state of the art in Education and Training in geological disposal** within the various participant's countries. It was preceded with a short questionnaire sent to the Joint Activity leaders of the IGD-TP and to project coordinators of related Euratom FP7 projects. The first **Terms of Reference** of the group approved in 2012 were published in connection with the IGD-TP terms of reference.

Work currently continues on producing the **CMET strategy** and **action plan** document. Also a paper has been produced by the group for the **Euradwaste 13** conference and another will be produced for the **NestET 13** conference in November 2013. For more information visit IGD-TP's Master Deployment Plan and Terms of Reference.

by Marjatta Palmu, Posiva Oy



© Marjatta Palmu

The first CMET meeting took place in April 2013 at BGR with an impressive geological collection in Spandau, Berlin.

JAI5 - NUCLEAR KNOWLEDGE MANAGEMENT (NKM)

NKM Working Group

In the SRA, **Nuclear Knowledge Management** is defined as one of the **cross-cutting activities**. In the Deployment Plan, the establishment of an organisational working group (WG) was recommended to explore potential interests for technical cooperation between IGD-TP participants organisations. A small WG, consisting of representatives of the participants represented in the IGD-TP Executive Group met in Helsinki in October 2012 and decided to organise a **workshop** for all IGD-TP participants to study current approaches to knowledge management in their working programs.

The workshop was hosted by Andra in Châtenay-Malabry on 25-26 April 2013. The attention was given to:

- i. improvements in clarity and traceability of presentation of RTD results and safety arguments
- ii. maintenance of organisational memory and competence
- iii. development of organisational culture & management practices
- iv. utilisation of up-to-date IT tools.

The programme consisted of a number of presentations about current activities in the participant organisations, detailed group discussions and a closing session about potential for further cooperation. A summary of the workshop presentations and discussions was posted www.igdtp.eu.

By Juhani Vira, Posiva Oy

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TECHNICAL PROJECTS

JAI2 - FULL SCALE DEMONSTRATION OF PLUGGING & SEALING

DOPAS project

Full-scale Demonstration Of Plugs And Seals

The FP7 **DOPAS project** aims to improve the adequacy and consistency regarding **industrial feasibility of plugs and seals** to be used in disposal facilities in different geological environments. DOPAS project considers the design basis, reference designs and strategies to demonstrate the compliance of the reference design for the experiments' plugs and seals. **Full-scale demonstrations** require planning and coordination of development, construction, research needed for implementation, test and laboratory work in different scales, monitoring activities and assessment of performance in long-term.



Full Scale Seal (FSS) Experiment ©Andra

Five demonstration experiments for plugs and seals will be partially or wholly implemented during the DOPAS project with participation from 14 European partners. The data from all experiments will be compiled and reported within DOPAS and achieved knowledge and experiences are shared in several dissemination events.

DOPAS facts

- Project duration: 1.9.2012 - 31.8.2016 (48 months)
- 14 Partners from 8 European countries (Posiva, Andra, DBE TEC, GRS, Nagra, NDA, Rawra, SKB, CTU, NRG, GSL, BTECH, VTT, UJV)
- 5 Full-scale experiments wholly or partially implemented within DOPAS
- A Joint Activity of IGD-TP, SRA Topic "Technical feasibility and long-term performance of repository components"

Future events by DOPAS

A workshop in 2014 and a joint seminar with IGD-TP in 2016

More about DOPAS: www.posiva.fi/dopas

Project Information inquiry: dopas@posiva.fi



The first issue of the **DOPAS newsletter** has been published in July 2013:
http://www.posiva.fi/files/3080/DOPAS_Newsletter_1_issued_July_2013.pdf

by Johanna Hansen, Posiva Oy

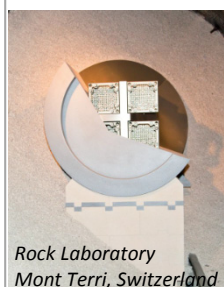


JAI6 - CONFIDENCE INCREASED IN SAFETY CODES

PEBS project

Long-term Performance of Engineered Barrier Systems

The **PEBS project** (03.2010 - 12.2014) was initiated to evaluate the sealing and barrier performance of clay-based EBS over time. The project approach includes experiments, model development and consideration of the potential impact on safety functions. Moreover, the project aims at further clarifying the significance of residual uncertainties for long-term performance assessment.



Rock Laboratory Mont Terri, Switzerland

PEBS project is organising an **International Conference on the Performance of Engineered Barriers** on February 6-7th, 2014 in BGR, Hannover, Germany. This conference will act as a platform for technical and scientific discussions related to engineered barrier systems. The **objectives** of the conference are to discuss, document and disseminate the current state of research on the performance of engineered barriers in geological repositories for high-level nuclear waste. Sessions are rounded up with discussions, aiming at bringing together views from experimentalists, modellers, and safety assessors. The outcome of the PEBS project plays a central role, but it is put in context through presentation of the outcome and status from other projects and activities.

The conference focuses on the evaluation of engineered barrier performance as the basis for long-term safety of geological repositories for the disposal of radioactive waste. Abstracts are invited on the following themes: (i) New insights through laboratory and in-situ experiments of engineered barriers, (ii) Recent developments in numerical modelling of THM(-C) processes in engineered barriers, (iii) Improvements in long-term performance prediction and potential impacts on safety assessment.

Deadlines

Authors	September 16, 2013	Abstract submission
	October 31, 2013	Authors notification
	November 29, 2013	Extended abstracts

Attendees	September 2, 2013	Registration opens
	November 8, 2013	Early bird registration (120 €)
	December 31, 2013	Late registration (150 €)

For more information see the PEBS website: www.pebs-eu.de

By Michael Mente, BGR

JA1 - WASTE FORMS AND THEIR BEHAVIOUR

CP FIRST-Nuclides project

Fast/Instant Release of Safety Relevant Radionuclides from Spent Nuclear Fuel

The **CP FIRST-Nuclides Project** covers a Key Topic defined in the IGD-TP SRA: High burn-up spent uranium oxide (UO₂) fuels originating from light water reactors having different initial ²³⁵U enrichment, burn-up (BU) and linear power rates dominate the calculated peak dose rates of nuclear waste disposals independent on the host rock. After failure of a canister, first release consists of radionuclides (1) in gaseous form, and (2) with a high solubility in groundwater. In present safety analyses, these radionuclides have a significant contribution to dose to people.



The **main objectives** of CP FIRST-Nuclides are as follows: (a) Provide for improved data for the fast/instant release fraction for high burn-up spent UO₂ fuel. (b) Establish correlations between the experimental fission gas release and the fast/instant release of non-gaseous fission products, in particular ¹²⁹I, ⁷⁹Se and ¹³⁵Cs. (c) Reduce uncertainties with respect to the fast/ instant release of ¹²⁹I, and ¹⁴C. (d) Determine the chemical form of the relevant elements in order to evaluate retention processes. (e) Discuss the impact of the results on the peak-dose to individuals. The experimental work is accompanied by modelling.

The project is implemented by a **consortium of 10 Beneficiaries and 11 Associated Groups** contributing to their own cost. The Coordination Team is based on the Coordinator (KIT) and the Coordination Secretariat (AMPHOS21).

The outcome of the project is relevant for all types of host rocks in Europe. National Waste Management organizations (WMOs) also contribute to the project by co-funding of beneficiaries, and providing knowledge and information. WMOs participate in the End User Group guiding the Project with respect to the usefulness of the project achievements for the purpose of improving confidence in the Disposal Safety Case.

Upcoming Events

2nd Annual Workshop, Antwerp (B), November 5th-7th, 2013.
Final Workshop, Karlsruhe (D), September 1st-2nd, 2014.

For further information, visit www.firstnuclides.eu
B. Kienzler, et al. "1st Annual Workshop Proceedings"
KIT-SR 7639, 2013, <http://dx.doi.org/10.5445/KSP/1000032486>

By Bernhard Kienzler, KIT

JA7 - MONITORING PROGRAMME



MoDeRn project

Monitoring Developments for Safe Repository Operation and Staged Closure

The **MoDeRn project** was a four-year FP7 collaborative research project (2009-2013) that addressed the question of how monitoring can contribute to the safety strategy and engineering design of geological disposal facilities for long-lived radioactive waste, as well as contribute to public understanding of, and confidence/trust in, geological disposal of radioactive waste.

The overall objective of the MoDeRn project was to develop and document the collective understanding of repository monitoring approaches, technologies and stakeholder views to provide a reference point to support the development of specific national repository monitoring programmes. This includes:

- Consideration of monitoring objectives and strategies
- Development and demonstration of innovative monitoring technologies
- Development of a better understanding of the views of lay stakeholders on the nature and role of monitoring

A generic approach to the development of a monitoring programme, the **MoDeRn Monitoring Workflow** was developed. It is intended to provide Waste Management Organisations guidance on the development and implementation of a monitoring programme. Within the MoDeRn Project, **illustrative monitoring programmes** or **Case Studies** have been developed for the three main types of generic host rock types considered suitable for the geological disposal of radioactive waste. They demonstrated that monitoring programmes, based on a structured analysis of the features, events and processes considered in the operational and post-closure safety case, and addressing pre-closure information requirements laid down in regulations (e.g. to demonstrate reversibility) can be established.

The project included **research and technical development work**, focused on innovative monitoring technologies of engineered barrier system (EBS) and the repository near field, and this work has brought the technical readiness of a range of potential technologies, such as distributed monitoring using fiber optic sensors seismic, wireless transmissions, seismic, corrosion sensors and cracks detection, closer to what is required for deployment within repository projects.

Research was undertaken on lay stakeholder involvement in repository monitoring that was directed at a better understanding of views on the nature and role of monitoring in geological disposal monitoring and the governance of repository development and staged closure.

During the past 4 years, MoDeRn partners have set up a **reference framework** against which national programmes can be developed. See <http://www.modern-fp7.eu/>

By Nicolas Solente, Andra

EVENTS

Upcoming events

30 Sep - 1 Oct IPPA End Users Conference 2013

It will take place in Prague on Sep. 30 - Oct. 1, 2013. The focus will be on how public participation can support societal decision making and strengthen democratic institutions.

7-9 Oct. IAEA/NEA Safety Case Symposium

Organised in cooperation with the European Commission and the International Atomic Energy Agency, the 2nd International Safety Case Symposium will take place on 7-9 Oct., in Paris.

14-16 Oct. Euradwaste 2013

The 8th EC conference on the Management of Radioactive Waste, Community Policy and Research on Disposal, will take place 14-16 October 2013, in Vilnius, Lithuania.

29-30 Oct. IGD-TP 4th Exchange Forum (EF4)

The IGD-TP 4th Exchange Forum will take place on October 29-30 in Prague, Czech Republic.

4-5 Nov. EUROSAFE Forum

The EUROSAFE Forum 2013 will take place on 4-5 November 2013 in Cologne, Germany. It will mainly deal with "Safe disposal of nuclear waste".

12-13 Nov. InSOTEC Stakeholder Seminar

The 2nd InSOTEC Stakeholder Seminar will take place on 12-13 November 2013, in Berlin, Germany.

17-21 Nov. NESTet 2013 conference

NESTet organises the Nuclear Education and Training Conference, on 17-21 November 2013 in Madrid, Spain.

Past events

3rd NEWLANCER Regional Meeting in Ljubljana

The EC project **NEWLANCER**, coordinated by Dr Daniela Diaconu (INR, Romania) is aiming to evaluate the skills and current participation of new Member-States to Euratom programme and to create a more efficient cohesion in nuclear research.

The **3rd regional meeting**, hosted by ARAO in Slovenia, was specifically dedicated to Nuclear Waste Management. It offered to the New Member States participants the possibility to present current policy and programmes in their respective countries. The IGD-TP Secretariat presented its main objectives and achievement so far. In addition, the ways offered by the platform to engage waste management organisations, academics and research centres were discussed.

It appeared that **reinforcement of the links between IGD-TP and NEWLANCER** (or the following initiative ARCADIA) would be an efficient way to enrich the content of our activities and may better respond to the New Member States' needs.



Thus, the NEWLANCER coordinator participates to the specific actions carried out in the framework of the work package 2 of IGD-TP SecIGD2 Project. Finally the secretariat strongly encouraged all participants to attend in next Exchange Forum 4 and the Waste Management Organisations to join the Executive Group.

Daniela Diaconu, Newlancer coordinator

Save the date!

IGD-TP Manchester 2014 Geodisposal conference



The **IGD-TP Geodisposal 2014** is a new forum for researchers on the Strategic Research Programmes for the Implementation of Deep Geological Disposal of Radioactive Waste in Europe.

The conference is organised by NDA in the framework of the SecIGD2 project. It will be held on **24-26th June 2014** and will be hosted by the **University of Manchester**.

Objectives

The IGD-TP Geodisposal 2014 objectives are to (i) showcase the underpinning science, technology and stakeholder engagement in geological disposal and (ii) to engage the countries with less-advanced programmes and share best practice in geological disposal research and implementation.

Registration

The conference will be open to all with a small registration fee (limited financial support will be provided to academics and researchers from countries with less advanced programmes).

Registrations will be opened in October 2013.

Website www.meeting.co.uk/confercare/geodisposal2014

Contact geodisposal2014@manchester.ac.uk

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The University of Manchester
By R. Kowe and K. Morris, NDA

Past events

Nuclear 2013

Nuclear 2013 was hosted by the Institute for Nuclear Research in Mioveni, Romania on May 22-24, 2013. It intended to consolidate collaboration with academia, industry, operators and authorities in order to respond together to the major expectations at national, European and international level including its contribution to the low carbon energy, security of supply and competitiveness. Participants explored the research directions to be developed by EURATOM programme under H2020 and analysed to what extent they are addressing the nuclear fission needs.



IGD-TP Secretariat presented the IGD-TP organisation, its Deployment Plan (produced in July 2012) and the specific initiatives launched towards less advanced programmes.

Jacques Delay, Secretary General of IGD-TP

Director of publication: Ph. Lalieux, Chair IGD-TP. Editorial team:

Secretariat of IGD-TP: J. Delay, R. Kowe and M. Garcia

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