ANNOUNCEMENT & CALL FOR PRESENTATIONS

IGD-TP 7th Exchange Forum

October 25-26th, 2016

Hotel Córdoba Centre, Córdoba, Spain

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Please send your proposal or your ideas to the Secretariat before **September 9th 2016** at the following address secretariat@igdtp.eu

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For over six years now European waste management organisations representing eleven different nations have been meeting three times per year to progress joint radioactive waste management and disposal RD&D. During this timeframe, the IGD-TP have implemented working groups which have discussed, initiated and in many cases now delivered technical projects aligned around our commonly agreed priorities which are documented in our published Strategic Research Agenda (SRA). In addition, the IGD-TP has also initiated organisational working groups on cross-cutting activities. To date, achievements of our platform include:

- Following up nine FP7 projects (totalling 61M€ - EC grant 28M€), four of which have successfully completed and been reported back to the community via previous exchange fora (PEBS, MODERN, FIRST-Nuclides and REDUPP);
- Launched four Horizon 2020 projects in EURATOM WP 2014-2015 (MODERN 2020, CEBAMA, MIND and JOPRAD, totalling 21.1M€ (EC grant 15.1M€);
- Developed a further six draft proposals for the EURATOM WP 2016-2017 call through collaborative discussions at and since EF6 and prioritised six for submission (THERAMIN, BEACON, DISCO, CHANCE, SAEXFUEL and TraCK).

The IGD-TP's seventh annual Exchange Forum will be themed around increasing the maturity of technology. It will be an opportunity to update members on the platform activities during 2016, inform the community on the outcomes of the recently completed BELBaR, LUCOEX and DOPAS projects and collectively explore the potential of future Joint Activities (through four subject specific working groups).

Furthermore, the Exchange Forum will also aim to summarise the future research needs as currently envisaged by WMOs, TSOs and Research Entities, and open the discussion up to the audience via a panel question and answer session.

This Exchange Forum will help in preparing for future projects, calls, and also initiate or increase interaction between research organizations, waste producers and waste management organizations.

To fulfil the above objectives, the Exchange Forum will last two days and will dedicate significant time for presentations and discussions in **four subject specific technical working groups**.

WG1: "Industrialisation and optimisation"

Nuclear waste repositories can only be developed in a staged iterative fashion. The objectives of developing repository design evolve in relation to the stage of the nuclear waste repository development. At early stages, e.g. prior to site selection, the aim of the design work is typically to develop concepts that have the potential to result in a safe repository. During a siting process the design work would need to show how a suitable design can be adapted to the available siting environments and potential host rocks as well as to provide guidance for the characterisation of the specific sites to be explored. When applying for a construction license the designs need to be further developed such that it can be demonstrated that the designs as adapted to the site will lead to safety and that the design can be realised in practice.

However, while a technically feasible reference design and layout is needed at this stage, detailed designs adapted to an industrialized process designed to fulfilling specific requirements on quality, cost and efficiency need still be developed. Also, the repository layout may need to be adapted to the local conditions found when constructing the repository at depth. Furthermore, since repositories typically will operate over several decades further optimisation of the design and operational procedures can be envisaged.

The objective of this working group is to explore the interest in sharing experiences on these matters, between programmes at different levels of maturity. The appetite in carrying out a collaborative project in this area will also be explored. The working group will solicit discussions and communications on the subject. We expect to share experiences from and practical approaches taken for nuclear waste programmes at different stages of development. An introductory presentation on the combined experiences from Finland (which has a construction license) and Sweden (which is in the process of potentially obtaining a constriction license) will be made.

WG2: "Canister Design"

Depending on the role of the engineered and natural barriers in the safety concept of a deep geological repository, disposal canisters provide containment of radionuclides during the operational phase as well as in the long term. This will lead to long canister lifetimes in many national programs, which in turn makes materials selection, design and manufacturing critical. The derivation and definition of a complete set of requirements for disposal canisters are of uppermost importance for an adequate design and manufacturing. Humidity and/or saline water will lead to corrosion and, as a consequence, to gas production. In addition, mechanical loads arising from the host rock, backfill, heat production or during transport, handling, retrieval or in case of accidents have to be taken into account. Coupling of chemical and mechanical degradation processes is also important.

At the end of the design process, the integrity of the disposal canister has to be demonstrated – first, by means of model calculations and eventually, by means of full-scale demonstration tests. Thus, a number of scientific and technical challenges have to be met. Several prototype disposal canisters, either copper- or steel-based, exist in advanced repository programs. Alternative canister designs and materials, such as coatings, may be a next development step that may save time and money, and provide the required safety functions while simplifying safety assessment, thus contributing to optimization.

Presentations of ideas or potential topics of interest in the area of canister concept development, including but not limited to lid and weld closure design, materials selection, and coating development are requested.

WG3: "High temperature clay interactions"

For disposal of HLW/SF, assessing the consequences of the heat produced from radioactive decay during operations and in the post-closure phase is important. The heat pulse might affect the long-term performance of clay engineered and/or natural barriers, with respect to fulfilling their safety functions.

In the short term, before radionuclide release is anticipated to occur, aspects related to heat induced host rock or buffer damage (chemical or physical) need to be evaluated when high temperatures are prevailing. These impacts become more significant with increased temperatures.

In several safety cases a maximum temperature of 100°C in the buffer has been formulated as an upper threshold, while in other safety cases it is conservatively assumed that part of the buffer will deteriorate partly due to thermal impacts. Being able to accommodate higher temperatures while ensuring similar safety standards would be beneficial with respect to: (i) disposing of higher enrichment/burn-up fuels, (ii) interim storage requirements, (iii) (re)packaging of the waste, (iv) reducing the total numbers of disposal canisters and (v) optimising tunnel and canister spacing.

Solid assessment of the impact of increased temperatures requires that the underlying scientific understanding at these higher temperatures is sufficiently established, which is currently not the case.

Presentations of ideas or potential topics of interest in the area of high temperature clay interactions are requested.

WG4: "Spent fuel characterization"

Characterisation of spent fuel (SF) is a crucial activity in the nuclear fuel cycle, needed to determine and understand a number of properties: for example, the decay power, the specific composition (inventory) of the irradiated fuel, neutron multiplicity and, radiation field to name a few important ones.

This Accurate characterisation makes it possible to choose the best way to manage, treat, condition and dispose of Spent Nuclear Fuel SF. Waste management organisations, research entities, and technical support organisations, safety authorities and international bodies, have, to some extent, complementary views and requirements for SNF characterization and related activities.

The principal aim of this working group is to develop and communicate the SPIRE (Spent fuel characterization Programme for the Implementation of geological repositories) initiative, which aims to develop the methods to determine the properties below to an acceptable uncertainty. The WG is also intended to be a cooperation platform between the IGD-TP and SNETP with focus on fuel characterisation needs, where also the features of a closed fuel cycle, such as the ones considered for generation III and IV reactors, are to be discussed. The remit of the group includes characterization standards and rules, techniques (D/MD), methodologies and tools focusing on:

- Characterisation techniques: neutrons and gammas, calorimetry, chemical methods, etc.
- Modelling codes;
- Fuel data: power history, burn-up, initial enrichment, cooling time, material properties etc.
- Decay power;
- Radionuclide inventory;
- Fissile material;
- Neutron multiplicity;
- Radioactive dose;
- Other relevant fuel properties (for example cladding properties).

Presentations of ideas or potential topics of interest in the area of SF characterisation are requested.

Registration & application form

Exchange Forum participants are strongly encouraged to express their interest in participating in the Working Groups by submitting presentations of ideas or potential topics for the Working Group sessions.

In order to register and/or submit a presentation, please fill in the **registration and application form** for the 7th IGD-TP Exchange Forum and send it to the Secretariat at **secretariat@igdtp.eu**.

With this form, you must specify to the Secretariat:

- if you intend to participate to the 7th IGD-TP Exchange Forum ;
- the working group you are interested to participating in ;
- if you intend to submit a presentation/proposal or ideas;

Deadlines

Abstracts for the working groups presentations should be submitted **before September 9, 2016.**
Note that abstracts should be related to the scope of the working groups.
Registrations will be open until **September 30, 2016.**

We remind you that the participation is free of charge, but registration of participants is mandatory.

Confirmation of registration for the 7th Exchange Forum will be issued September 30, 2016, along with the finalised agenda.

Venue

Hotel Córdoba Center
Avda. de la Libertad, 4 · 14006 – Córdoba
http://www.hotelescenter.es/en/hotel-cordoba-center/

HOTEL BOOKING IN CORDOBA

	Daily Prize (€)	***Deadline***	***Contact email***
CORDOBA CENTER	108,90	July 25	inscripcionesgsp@viajeseci.es
EXE CONQUISTADOR	84	August 25	reservas@execonquistador.com
NH AMISTAD	110,20	August 25	NHcollectionamistadcordoba@nh-hotels.com
AYRE CORDOBA	86,90	August 25	ventas.cordoba@ayrehoteles.com

A sufficient number of rooms have been blocked in these four hotels (4 star hotels). When making your booking please copy to inscripcionesgsp@viajeseci.es and indicate as reference: "Grupo Enresa para el evento Exchange Forum 7". Beyond the established deadline, the indicated prizes cannot longer be guaranteed.

7th Exchange Forum

October 25-26th 2016, Cordoba, Spain

Preliminary AGENDA

Tuesday 25th October 2016

8:30	Registration
9:00	**Opening Session** Welcome, opening remarks and meeting objectives IGD-TP Chair (M. Hammarström - SKB)
	Plenary Session1
9:30	**Key Note 1: National policy in Spain** P. Zuloaga (Enresa)
10:00	**Key Note 2: R&D activities in Ukraine towards geological disposal of radioactive waste** I. Shybetsky (Radioenvironmental Centre, Kiev)
10:30	*Coffee Break*
11:00	**Key Note 3: Update from the European Commission** C. Davies (EC)
11:30	**Discussion Panel 1: RD&D for the future** Future research needs arising from: • WMOs – F. Plas (Andra) • TSOs – C. Serres (IRSN) • Research Entities – C. Bruggeman (SCK-CEN)
12:15	**Audience questions to the panel** Panel: WMO (F. Plas, J. Andersson), TSO (C. Serres), RE (C. Bruggeman) and EC (C. Davies)
12:45	**Organisation of the parallel Sessions** - IGD-TP Secretariat
13:00	*Lunch*
	Parallel Sessions – Technical Working Groups Session
14:00	**Working Groups (part 1)** - Working Group Chair, Rapporteur and members
15:45	*Coffee Break*
16:00	**Working Groups (part 2)** - Working Group Chair, Rapporteur and members
17:30	**End of the day**

Wednesday 26th October 2016

Parallel Sessions – Technical Working Groups Session (Cont.)	
09:00	**Working Groups (part 3)** Discussion/conclusions from Working Group presentations Working Group Chair, Rapporteur and members
10:30	*Coffee Break*

Plenary Session 2		Working Group (part 4)	
11:00	**Key Note 4: Focus on less advanced programmes** Application and adaptation of mature geological disposal concepts to less advanced programmes J. Slovák (Surao)	11:00 - 13:00	**Session to prepare WG conclusion presentations** Working Group Rapporteur and Chair only (i.e. not the wider Working Group members)
11:45	**BELBaR end of project overview** P. Sellin (SKB)		
12:10	**LUCOEX end of project overview** E. Thurner (SKB)		
12:35	**DOPAS end of project overview** J. Hansen (Posiva)		
12:25	*Lunch*		

Plenary Session 3	
14:00 - 15:20	**Reports back from the Working Groups** - Working Group Rapporteurs
15:20 - 15:30	**Discussion on the findings of the Working Groups and proposed way forward** - All • Could a proposal be appropriate for a future call? • Could a proposal be consistent with JP ground rules?
15:30 - 16:00	**Conclusion and closing remarks** - M. Hammarström (SKB)
16:00	**Close of IGD-TP EF7** M. Hammarström (SKB) and P. Zuloaga (Enresa)

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Working Groups

Working group title		Chair / Rapporteur
WG1	**Industrialisation and optimisation**	J. Andersson (SKB) / J. Hansen (Posiva)
WG2	**Canister Design**	W. Bollingerfehr (DBE TEC)/ N. Diomidis (Nagra)
WG3	**High temperature clay interactions**	Irina Gaus (Nagra) / Klaus Wieczorek (GRS)
WG4	**Spent fuel characterization**	M. Sepielli (SNETP) /A. Sjöland (SKB)