



Conclusions and Recommendations out of the EURADWASTE 2013 Conference

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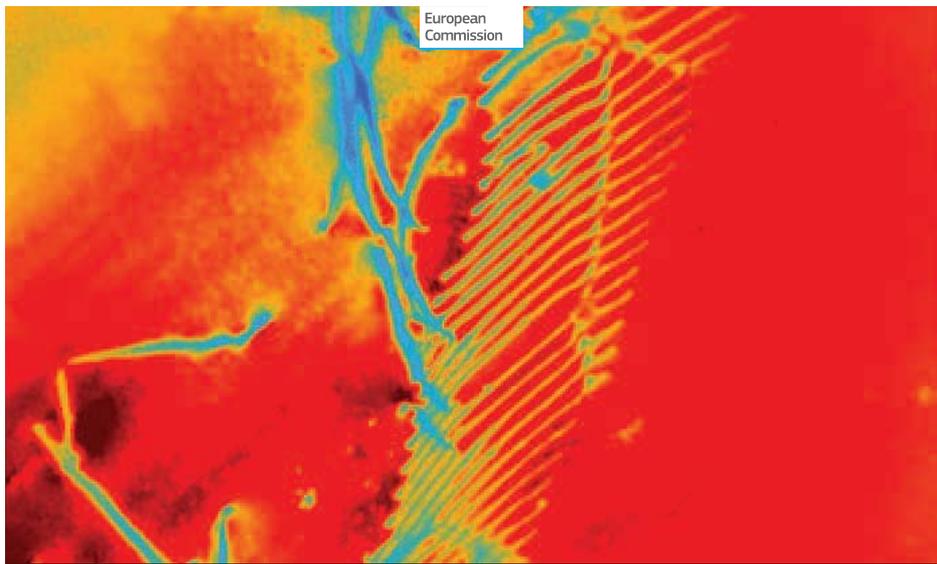
Bernd Grambow, Ecole des Mines, Université de Nantes



EURADWASTE 2013

Concluding PF7 EURATOM R&D programme on nuclear waste disposal

-> Moving to Horizon 2020 (2014-2020)



active Waste
Community Policy and Research on
Disposal

l, turbine hall, control room,
spent fuel pools, spent nuclear fuel storage facility, free-release measurement
facility and Solid Waste Management and Storage Facility.



-> Generate Report

“Conclusions and Recommendations (on R&D) out of the EURADWASTE 2013 Conference”

Objectives:

“.... summarize and visualize the recommendations in order to make them accessible for further use in structuring forthcoming R&D activities.

Different stakeholders can use the document for their respective purposes, such as:

- Individual Waste Management Organizations, TSO’s and R&D organizations in planning their own R&D activities,
- Individual actors and Networks when planning joint activities,
- DG RTD is planning the forthcoming EURATOM programming in the field of nuclear waste disposal,
- Different stakeholders, including Civil Society when analysing the status of R&D and the disposal Safety Case, and
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EURADWASTE 2013

Session I: Responsible and Safe Management of Spent Fuel and Radioactive Waste

EURATOM Waste Directive, ENSREG, ENEF, AEA, NEA

Session II: Decision making on Spent Fuel and Radioactive Waste Management

Policy, costs, public involvement, ..

Session III: Challenges in Geological Disposal: from policy to research and implementation

National Programme, Regulatory expectations, Public involvement, CMET

Session IV: EURATOM FP7 – Challenges in Science for Disposal: advances in phenomenology understanding of the source term & migration and performance assessment for the safety case

Session V: EURATOM FP7 – Challenges in repository technologies and construction: Engineering, Design, Demonstration and Monitoring

Joint conclusion – EURADWASTE '13 and FISA 2013.



EURADWASTE 2013

1. **Summary Report of Session I:** Mariano Molina Martín (Rapporteur), ENRESA, Spain
2. **Summary Report of Session II:** Christina Necheva (Rapporteur), European Commission, DG Energy
3. **Key Note, Session III,** Piet Zuidema, Lawrence Johnson, Nagra, Switzerland
4. **Summary Report of Session III:** Claudio Pescator (Rapporteur), OECD/NEA
5. **Session III: Summary Report of Panel 1,** Peter Wikberg (Chair), SKB, Sweden
6. **Key Note, Session IV,** Bernd Grambow, Ecole des Mines, Université de Nantes, France
7. **Synthesis and Summary of Session IV and Panel 2,** Pierre Toulhoat (Rapporteur), INERIS, France, Bernd Grambow (Chair)
8. **Key Note, Session V,** Juhani Vira, Posiva Oy, Finland
9. **Summary Report of Session V,** Juhani Vira (Chair), POSIVA, Finland, Juan Carlos Mayor (Rapporteur), ENRESA, Spain
10. **Summary report of the EURADWASTE '13 Conference,** Alan Hooper (General Rapporteur), Imperial College London, UK



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5. 
6. **All papers published in the conference proceedings** s,
7. **Synthesis and Summary of Session IV and Panel 2,** Pierre Toulhoat (Rapporteur), INERIS, France, Bernd Grambow (Chair)
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Report: Generation process

1. **Statements** from the different papers are **extracted and listed**.
2. Statements are then **grouped and structured** along with topical areas:
 - a. **Overriding Issues**
 - **Horizontal activities and impact on National Programmes**
 - **General Aspects and Guidance on R&D needs, including during different implementation phases**
 - b. **R&D / Scientific-technical development**
 - **General aspects and considerations**
 - **R&D / Scientific basis**
 - c. **Social sciences / Involvement of Stakeholders, including Civil Society**
 - d. **Competence Maintenance and Development through E&T, Joint R&D and Knowledge Transfer.**

Stepwise process -> recommendations in a **table** with **preliminary assessment** on how to proceed
(including information on if the topics have been dealt with in FP7 projects or is subject to IGD-TP Joint Activities or fall under activities of projects under review)

Table of Contents

Transparent presentation of the document generation process

1. Objectives
2. Overview
3. Purpose of the document
4. Summary of outcome (with Table 1)
5. Preliminary conclusions
6. Next steps

Annex I: On-going or planned forthcoming EURATOM nuclear waste disposal projects and lists of IDG-TP Joint Activities and SRA Key Topics

Annex II: Structuring grouped input and defining potential activities

Annex III: Grouping and structuring of recommendations from the different sessions, the keynotes, and session and panel summary documents

Annex IV: Summary of recommendations from the different sessions, the keynotes, and session and panel summary documents

Session 1, Responsible and safe management of spent fuel and radioactive waste

Session 2, Decision Making on Spent Fuel (SF) and Radioactive Waste (RW) Management

Session 3, Challenges in Geological Disposal Programmes: From Policy to Research and Implementation

Session 4, Challenges in Science for Disposal: Advances in Phenomenology Understanding of the Source Term & Migration and Performance Assessment for the Safety Case

Session 5, Challenges in Repository Technologies and Construction: Engineering, Design, Demonstration and Monitoring.

Joint Conclusions.

Annex V: Documents used for the analysis

No	Topic	Comments (Existing/on-going Activity/ Project, additional questions, outside the scope of the programme, establish a work group?, ..)
1	Overriding issues	
1.1 Horizontal R&D activities and networking, and their impact on National Programmes		
1.1.1	Identify and document different mechanisms for Less Advanced Programmes to benefit from more advanced ones, and provide recommendations on how implementation can be supported, for example by E&T, Joint R&D and Joint Programming.	Guide on R&D needs for programmes in different development stages under way from the IGD-TP secretariat. The Guide includes mechanisms for how MS's with less advanced programmes can benefit from more advanced ones. Further activities thus should wait for this outcome.
1.1.2	Analyse the potential for the option of joint activities (E&T, joint R&D ...) of the different types of actors, especially in view of the requirement for preserving the integrity of the regulatory function.	SITEX with respect to integrity of regulatory function/TSO's JOPRAD with respect to WMO's, TSO's and mandated R&D actors
1.1.3	Make a recommendation on how to organise a common understanding amongst implementers through analysis of the regulatory feedback. The possible contribution by the Commission could also be considered.	WG of Implementers?



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Corresponding narrative part of the document:

“There is the recommendation for a Guide on how Member States with less advanced programmes can benefit from more advanced ones. A Guide is on the way from the IGD-TP secretariat on R&D needs for different stages of National Programme development and implementation. This Guide is addressed in particular to Member States with less advanced programmes and thus also shows mechanisms for these programmes to benefit from more advanced ones. Consequently, decision of further activities should not be taken until this Guide is finalized and published.”

3	Social Sciences / Involvement of Stakeholders, including Civil Society	
3.1	<p>Two basic questions that are of key interest in order to structure future work and interpret results:</p> <ul style="list-style-type: none"> • Generate a list of terms for definition. The list needs to be communicated with the scientific-technical and socio-scientific expert community but also members of the public and civil society with an interest in contributing. • Partly related to terminology, who are “Stakeholder”, “Civil Society”, 	Assess in the light of the outcome of IPPA and
<p>Corresponding narrative part of the document:</p> <p><i>“With respect to involvement of stakeholders, several topics are identified, including (i) how to ensure common understanding through clear definition of terms, (ii) how to identify which groups have an interest in which type of involvement, (iii) how to involve different stakeholders without creating a bipolar relation against natural sciences, (iv) how can the interests of the involved groups be communicated, (v) how can their expectations be identified and met, and eventually (vi) how can the activities contribute to an enduring constructive partnership. Continued activities in this field would benefit greatly from clarification of these questions. For that purpose, the outcome of IPPA and INSOTEC serves a basis.”</i></p>		
	<p>and</p> <p>– how can a constructive and enduring partnership be developed with those groups essential for implementation of a long-term spent-fuel and radioactive waste management programme?</p> <p>In addition, investigate what the expectations are on R&D by different stakeholders, specifically non-scientific-technical ones / Civil Society.</p>	

Source Term and Near-Field

2.2.5

Possible mechanisms for mobilization of highly charged radionuclides in long-lived non-heat generating waste generated by ligand front

(For example in the case of medium level waste in presence of organics (bitumen degradation products, ISA...) solubility values can strongly increase and retention factors can decrease, asking for full solubility systems understanding including actinide complex formation with organic ligands from the waste, identification of a bounding hypothesis for solubility controlling phase, sorption of actinides on the repository rock in presence of organic matter". However, concentrations of organics will decrease at some distance from the waste due to transport constraints, and solubility values will drop. The exact position of this boundary maybe between some meters to tens of meters and can only be assessed by coupling transport and solubility assessment.)

Engineered barriers

2.2.9

Quantitative assessment of processes in the EBS during re-saturation, including the potential for being an obstacle for retrieval of the waste packages

(For example, void formation potentially over several thousands of years by hydrogen formation from canister corrosion, transfer of radionuclides along water films at surfaces, as well as reactivity of the non-saturated intermediate level waste)



Topics still under assessment (cont.)	
3	Social Sciences / Involvement of Stakeholders, including Civil Society
3.3	Analyse the status of Ethical questions, including identifying new ones that may not have been classified as such in the recent discourse (R&R, shared pre-disposal and disposal solutions, long-term storage and disposal implementation in view of different potential societal developments, and compensation for communities accepting critical facilities could be such topics). Especially if topics are identified that have not been analysed from an Ethical perspective, review and document the state-of-the-art and more recent topics.

Preliminary conclusions

“Recommendations from the EURADWASTE 2013 conference have been summarized and been subject to preliminary assessment.

So far the very preliminary assessment has verified that most topics are related to past or on-going activities and thus no immediate action is due.

Continued assessment by consulting the broader expert community is still required over the coming months.

No topic has been identified indicating that important processes have been overlooked or dealt with in an undue fashion.

Final conclusions will be given after completion of the assessment and publication of the document.”

Next steps

“The next step consists of review and assessment of the Table 1 and the comments concerning the way ahead, in particular in order to ensure that on-going activities are documented and parallel activities are not recommended.

For that purpose, authors of the summary papers, IGD-TP, SITEX and NEWLANCER consortia are asked for their input. In addition, coordinators of projects referred to are addressed.

The document is aimed for publication the first quarter of 2015.”



The positive preliminary conclusions makes the presentation lack sensation

Thanks for (nevertheless) listening

Questions?