



# Key Topics in Deep Geological Disposal

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**Cologne, 24 – 26 September**

**CONFERENCE PROGRAMME**

WEDNESDAY (24 SEPTEMBER)

## Conference Committees

### **Local Organizing Committee:**

W. Bollingerfehr, DBE-TECHNOLOGY GmbH  
J. Mönig, Gesellschaft für Anlagen- und Reaktorsicherheit (GRS) mbH  
K. Fischer-Appelt, Gesellschaft für Anlagen- und Reaktorsicherheit (GRS) mbH  
K.-J. Röhlig, TU-Clausthal  
D. Gallego Carrera, Universität Stuttgart  
S. Fanghänel, Karlsruher Institut für Technologie (KIT)  
H. Geckeis, Karlsruher Institut für Technologie (KIT)

### **International Scientific Committee:**

L. Bailey (UK)  
A. Bergmans (Belgium)  
C. Davies (EU)  
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W. Steininger (Germany)  
G. Sundqvist (Norway)  
A. Van Luik (USA)  
P. Van Marcke (Belgium)  
F.-P. Weiß (Germany)  
P. Wikberg (Sweden)  
P. Zuidema (Switzerland)  
N. Medyantsev (Russia)

### **Conference Secretary:**

F&U confirm  
Ms Ogarit Uhlmann MSc  
Permoserstr. 15  
04318 Leipzig  
Germany  
Phone: +49 341 235 2264  
Fax: +49 341 235 2782  
Email: [daef2014@fu-confirm.de](mailto:daef2014@fu-confirm.de)

### **Scientific Secretary:**

Dr. Susanne Fanghänel  
Institut für Nukleare Entsorgung (INE)  
Hermann-von-Helmholtz-Platz 1  
76344 Eggenstein-Leopoldshafen  
Germany  
Phone: +49 721 608 25452  
Email: [daef@ine.kit.edu](mailto:daef@ine.kit.edu)

# Background

Safe disposal of radioactive waste and spent nuclear fuel is considered to be a major challenge for present and following generations irrespective of the current and future scenarios for the use of nuclear power in different countries.

International efforts are underway towards the implementation of repositories notably for highly radioactive waste: 58 countries signed the Joint Convention of September 1997 on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management, committing themselves “to take the appropriate steps to aim to avoid imposing undue burdens on future generations”. In July 2011, the EU published their Council directive 2011/70/Euratom forcing EU member states to establish programmes and schedules for the safe disposal of radioactive waste. The European technology platform IGD TP (Implementing Geological Disposal of Radioactive Waste Technology Platform) clearly expresses its vision “that 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”. While some geological disposal programmes in countries such as Finland, Sweden, France and Switzerland are quite advanced, other states decided to reconsider and re-start their projects (e.g. UK, USA and Germany). Yet, the development of a widely accepted concept for repository development which combines all relevant sociotechnical criteria within a stepwise implementation approach remains a challenge for interdisciplinary research.

Considering the time scales of many decades required to implement a repository from conceptualization via initiating the site selection process to repository closure, it is obvious that science and technologies related to nuclear waste disposal have to be developed further.

The international conference “Key topics in deep geological disposal” will set a focus on the following topics:

- 1. Repository concepts in different host rocks and safety analyses**
- 2. A. Governance und public involvement**  
**B. Sociotechnical challenges and interdisciplinarity**
- 3. Safety aspects of repository operation**
- 4. Construction of technical barriers and**
- 5. Scientific aspects of the nuclear waste disposal safety case**
- 6. Siting Strategies**

The conference will provide an adequate forum for fruitful scientific exchange and a valuable instrument for further improving multilateral co-operation for mutual benefit. The programme will consist of invited and contributed presentations, conference language will be English.

## **Conference organizers:**

The German association for repository research (DAEF) represents leading research organisations active in radioactive waste disposal research. The aim of this association is to contribute to the safe disposal of radioactive waste, to develop research and to offer respective fact based information.

## Timeline

|   |                            |
|---|----------------------------|
| Deadline for Abstract submission:         | 24 April 2014              |
| Notification of acceptance:               | End of May 2014            |
| Deadline for early bird payment:          | 31 July 2014               |
| Final Programme:                          | July 2014                  |
| Welcome Reception at Gürzenich Weinkeller | 24 September 2014, 19:00 h |
| Conference:                               | 25 September 2014          |

## Accommodation

Details and information on accommodation is online at: <http://www.daef2014.org>

## Registration fees for payment before 31 July 2014

|  |       |
|--|-------|
| Full admission:  | € 300 |
| Students ( <i>please send proof to conference secretary</i> ): | € 150 |

## Registration fees for payment after 31 July 2014

|  |       |
|--|-------|
| Full admission:  | € 350 |
| Students ( <i>please send proof to conference secretary</i> ): | € 200 |

## Registration fees include:

Welcome reception; Attendance of technical sessions;  
Buffet style dinner during the evening poster session; coffee breaks; conference material

## Location

The conference will take place in the Gürzenich Köln, a wonderful representational building in the heart of Cologne, which was first opened in 1447. It is fronted by a classic late Gothic façade. The interior was developed in the style of the fifties. In 1997, the building underwent a complete renovation with the objective of combining its historical architecture with state-of-the-art event technology in an exclusive event centre.

Köln (Cologne) is the city of the dome: The cathedral is the famous landmark of the city and one of the greatest European masterpieces of gothic architecture and was declared a UNESCO world heritage. The city founded by the Romans has a more than 2000 year old history and is one of the economic and cultural centres of international importance in Germany – and famous for its traditional carnival.

## Getting to the venue

Cologne has an outstanding traffic infrastructure with an excellent public transport network. Motorways lead to Cologne from every direction and a main station is served by 1,200 trains daily. Two international airports are located nearby – Cologne-Bonn and Düsseldorf – and direct InterCity Express-trains connect to Frankfurt Airport.

**WEDNESDAY (24 SEPTEMBER)**

## **Programme**

17:00    **REGISTRATION**

19:00    **ICEBREAKER**

## THURSDAY (25 SEPTEMBER)

07:30 Registration – Conference office opens

08:15 Welcome

### SESSION 1 REPOSITORY CONCEPTS IN DIFFERENT HOST ROCKS

*Chairs: P. Wikberg (Sweden) and P. Zuidema (Switzerland)*

08:30 CIGÉO PROJECT: THE FRENCH DEEP GEOLOGICAL REPOSITORY PROJECT IN CLAY HOST ROCK **S1-01**  
*J.-M. Hoorelbeke, O. Ozanam (invited) (France)*

09:00 PRELIMINARY SAFETY ANALYSIS OF THE GORLEBEN SITE **S1-02**  
*K. Fischer-Appelt, G. Bracke, J. Larue, I. Kock, T. Beuth (Germany)*

09:30 DISPOSAL OF RADIOACTIVE WASTE IN SWEDISH CRYSTALLINE ROCKS **S1-03**  
*C. Greis Dahlberg, P. Wikberg (Sweden)*

09:50 REPOSITORY DESIGNS AND TECHNICAL SOLUTIONS WITH A VIEW TO RETRIEVABILITY AND SAFETY REQUIREMENTS CURRENTLY EFFECTIVE IN GERMANY **S1-04**  
*P. Herold, W. Bollingerfehr, S. Dörr, W. Filbert (Germany)*

10:10 COFFEE BREAK

### SESSION 2 SCIENTIFIC ASPECTS OF THE NUCLEAR WASTE DISPOSAL SAFETY CASE (PART I)

*Chairs: J. Mönig (Germany) and T. Fanghänel (EU)*

10:40 THE ROLE OF SAFETY ANALYSES IN SITE SELECTION: SOME PERSONAL OBSERVATIONS BASED ON THE EXPERIENCE FROM THE SWISS SITE SELECTION PROCESS **S2-01**  
*P. Zuidema (invited) (Switzerland)*

11:10 HYDROCARBONS IN THE HAUPTSALZ FORMATION OF THE GORLEBEN SALT DOME – CONTENT, DISTRIBUTION AND ORIGIN **S2-02**  
*M. Pusch, J. Hammer, C. Ostertag-Henning (Germany)*

11:30 CURRENT STATE OF KNOWLEDGE ON LONG TERM BEHAVIOR OF HIGHLY ACTIVE WASTE FORMS **S2-03**  
*V. Metz, E. González-Robles, K. Dardenne, J. Rothe, M. Altmaier, B. Kienzler, H. Geckeis (Germany)*

11:50 THE LONG-TERM DURABILITY OF LOW ALKALI CEMENTS: EVIDENCE FROM NEW NATURAL ANALOGUE SITES IN EUROPE AND NORTH AFRICA **S2-04**  
*W.R. Alexander, H.M. Laine, H. Khoury (Switzerland)*

12:10 SIMULATION OF DENSITY-DRIVEN FLOW IN HETEROGENEOUS AND FRACTURED POROUS MEDIA **S2-05**  
*A. Grillo, D. Logashenko, S. Stichel, G. Wittum (Germany)*

12:30 LUNCH BREAK

## THURSDAY (25 SEPTEMBER)

### SESSION 3 GOVERNANCE AND PUBLIC INVOLVEMENT

Chairs: *P. Krütli (Switzerland) and A. Grunwald (Germany)*

- 14:00 IMPLEMENTING GEOLOGICAL DISPOSAL: A LONG-TERM GOVERNANCE CHALLENGE **S3-01**  
*A. Bergmans (invited) (Belgium)*
- 14:30 CONSENSUS SHAPING AND SAFE SPACE PUBLIC PARTICIPATION PROCESSES **S3-02**  
*K. Andersson (Sweden)*
- 14:50 INSTALLATION OF A RADIOACTIVE WASTE DISPOSAL FACILITY: THE NECESSITY OF BUILDING UP DURABLE LINKS BETWEEN THE GENERAL PUBLIC AND RADIOACTIVE WASTE – FEEDBACK FROM EXPERIENCE IN FRANCE **S3-03**  
*D. Delort, A. Comte, S. Farin (France)*
- 15:10 THE SWISS APPROACH TO FINDING COMPROMISES IN NUCLEAR WASTE GOVERNANCE **S3-04**  
*S. Kuppler, A. Grunwald (Germany)*
- 15:30 SAME, SAME BUT DIFFERENT **S3-05**  
A COMPARATIVE PERSPECTIVE ON PARTICIPATION AND ACCEPTANCE IN SITING PROCEDURES IN FRANCE, SWEDEN AND FINLAND  
*M.R. Di Nucci, A.M. Isidoro Losada, A. Brunnengräber (Germany)*
- 15:50 COFFEE BREAK

### SESSION 4 SOCIOTECHNICAL CHALLENGES AND INTERDISCIPLINARITY

Chairs: *A. Bergmans (Belgium) and C. Davies (EU)*

- 16:10 SOCIAL DIMENSIONS OF NUCLEAR WASTE DISPOSAL **S4-01**  
*A. Grunwald (invited) (Germany)*
- 16:40 INCLUSIVE EXPERTISE IN A SITE-SELECTION PROCESS – EXPERIENCE, SOME LESSONS AND REFLECTIONS BEYOND BOUNDARIES **S4-02**  
*T. Flüeler (Switzerland)*
- 17:00 THE CHALLENGE OF INTERDISCIPLINARITY: FIRST STEPS TOWARDS A JOINT WORKING APPROACH - THE ENTRIA PROJECT **S4-03**  
*K.-J. Röhlig, P. Hocke, U. Smeddinck, C. Walther (Germany)*
- 17:30 REFLECTING SOCIO-TECHNICAL COMBINATIONS IN RADIOACTIVE WASTE MANAGEMENT – RESULTS FROM THE INSOTEC EUROPEAN RESEARCH PROJECT **S4-04**  
*B. Kallenbach-Herbert, A. Bergmans, M. Martell, J. Schröder (Germany)*
- 17:50 NUCLEAR WASTE AND HAZARDOUS WASTE IN THE PUBLIC PERCEPTION **S4-05**  
*P. Krütli, R. Seidl, M. Stauffacher (Switzerland)*
- 18:10 BREAK

## THURSDAY (25 SEPTEMBER)

### SESSION 5 POSTER SESSION (19:00 – 22:00)

Incl. Dinner buffet

#### 1 REPOSITORY CONCEPTS IN DIFFERENT HOST ROCKS AND SAFETY ANALYSES

- P1-01** DESIGN AND OPTIMIZATION OF A HLW-REPOSITORY IN SALT FORMATIONS – RESULTS OF THE PRELIMINARY SAFETY ANALYSIS FOR THE GORLEBEN SITE (VSG)  
*W. Bollingerfehr, W. Filbert, P. Herold, S. Dörr, C. Lerch (Germany)*
- P1-02** A THERMODYNAMIC REFERENCE DATABASE FOR NUCLEAR WASTE DISPOSAL  
*V. Brendler, M. Altmaier, H. Moog, W. Voigt, S. Wilhelm (Germany)*
- P1-03** WASTE CLASSIFICATION AND CHOISE OF GEOLOGICAL REPOSITORY CONCEPT: UKRAINIAN CASE  
*V. Shestopalov, J. Krone, I. Shybetskyi (Ukraine)*
- P1-04** GEOLOGICAL AND GEOTECHNICAL LIMITATIONS OF RADIOACTIVE WASTE RETRIEVABILITY IN GEOLOGIC DISPOSALS  
*J. Stahlmann, R.L. Vargas, V. Mintzlaff, A.-K. Treidler (Germany)*

#### 2 PUBLIC INVOLVEMENT AND PARTICIPATION (2A GOVERNANCE UND PUBLIC INVOLVEMENT“ / 2B SOCIOTECHNICAL CHALLENGES AND INTERDISCIPLINARITY)

- P2-01** MULTI LEVEL GOVERNANCE-PERSPECTIVE ON MANAGEMENT OF NUCLEAR WASTE DISPOSAL. A COMPARATIVE ANALYSIS  
*A. Brunnengräber, D. Häfner (Germany)*
- P2-02** OPINIONS AND SOCIAL VALUES RELATED TO THE DISPOSAL OF NUCLEAR WASTE IN SWITZERLAND  
*R. Seidl, A. Stefanelli (Switzerland)*
- P2-03** NUCLEAR WASTE AND HAZARDOUS WASTE IN THE PUBLIC PERCEPTION  
*P. Krüttli, R. Seidl, M. Stauffacher (Switzerland)*

#### 3 ASPECTS OF REPOSITORY OPERATION

- P3-01** INDEPENDENT MONITORING OF A RELEASE FROM THE WASTE ISOLATION PILOT PLANT IN NEW MEXICO, USA: RESULTS AND PURPOSE  
*P. Thakur, S. Ballard (USA)*

#### 4 CONSTRUCTION OF TECHNICAL BARRIERS

- P4-01** THE SEALING OF EXCAVATION DAMAGED ZONES IN SALT FORMATIONS USING SODIUM SILICATE SOLUTIONS  
*H.-J. Engelhardt, H. Schmidt, L. von Borstel (Germany)*
- P4-02** CLAY MODIFIED CRUSHED SALT FOR SHAFT SEALING ELEMENTS – MATERIAL OPTIMIZATION AND EVALUATION IN FIELD TESTS  
*U. Glaubach, M. Hofmann, M. Gruner, W. Kudla (Germany)*



## THURSDAY (25 SEPTEMBER)

- P4-03**      PROBABILISTIC METHODS AS A TOOL AIDING DIMENSIONING DRIFT AND SHAFT SEALS FOR A REPOSITORY IN ROCK SALT  
*K.-J. Röhlig, E. Plischke, X. Li (Germany)*
- P4-04**      THERMAL LOADING OF BENTONITE: IMPACT ON HYDROMECHANICS AND PERMEABILITY  
*S.G. Zihms, J. Harrington (UK)*

### 5 ALL SCIENTIFIC ASPECTS OF THE NUCLEAR WASTE DISPOSAL SAFETY CASE

- P5-01**      RADIONUCLIDE SOLUBILITY CONTROL BY SOLID SOLUTIONS  
*F. Brandt, M. Klinkenberg, V. Vinograd, K. Rozov, D. Bosbach (Germany)*
- P5-02**      BARRIER FUNCTION OF A CORRODING IRON BASED CONTAINER  
*H. Geckeis, T. Rabung, J. Lützenkirchen, N. Finck, M. Rothmeier, L. Radulescu (Germany)*
- P5-03**      MECHANICAL PROPERTIES, MINERALOGICAL COMPOSITION, AND MICRO FABRIC OF OPALINUS CLAY – SANDY AND SHALY FACIES (MONT TERRI, SWITZERLAND)  
*A. Kaufhold, W. Gräsle, I. Plischke (Germany)*
- P5-04**      EVOLUTION OF CEMENT BASED MATERIALS IN A REPOSITORY FOR RADIOACTIVE WASTE AND THEIR CHEMICAL BARRIER FUNCTION  
*B. Kienzler, V. Metz, M. Schlieker, E. Bohnert (Germany)*
- P5-05**      IRON CORROSION IN CONCENTRATED SALINE SOLUTIONS AT T AND P CONDITIONS IN HIGH-LEVEL RADIOACTIVE WASTE ROCK REPOSITORIES: A THERMODYNAMIC STUDY  
*A.G. Muñoz, H.C. Moog (Germany)*
- P5-06**      SPECIATION OF NEPTUNIUM AFTER DIFFUSION IN OPALINUS CLAY  
*T. Reich, S. Amayri, J. Drebert, D.R. Fröhlich, D. Grolimund, U. Kaplan, J. Rosemann (Germany)*
- P5-07**      EVOLUTION OF THE BENTONITE BARRIER UNDER GLACIAL MELTWATER INTRUSION CONDITIONS  
*T. Schäfer, I. Blechschmidt, M. Bouby, S. Büchner, J. Brendlé, G. Darbha, J. Flügge, H. Geckeis, R. Götz, W. Hauser, S. Heck, F. Huber, T. Kupcik, M. Lagos, A. Martin, U. Noseck (Germany)*
- P5-08**      MONITORING IN THE POST-CLOSURE PHASE: DEVELOPMENT OF WIRELESS TECHNIQUES FOR DATA TRANSMISSION FROM THE REPOSITORY TO THE SURFACE  
*T.J. Schröder, E. Rosca-Bocancea, J. Hart (The Netherlands)*
- P5-09**      STUDY OF THE INFLUENCE OF HYDROGEOLOGICAL CONDITIONS IN THE UPPER AQUIFER SYSTEM ON RADIONUCLIDE MIGRATION FROM A DEEP GEOLOGICAL REPOSITORY USING A 2D GROUNDWATER FLOW AND TRANSPORT MODEL  
*V. Shestopalov, A. Bohuslavskyy, I. Shybetskyi (Ukraine)*
- P5-10**      A CONTRIBUTION FROM FUNDAMENTAL AND APPLIED TECHNETIUM CHEMISTRY TO THE NUCLEAR WASTE DISPOSAL SAFETY CASE  
*Y. Totskiy, E. Yalcintas, F. Huber, X. Gaona, T. Schäfer, M. Altmaier, S. Kalmykov, H. Geckeis (Germany)*
- P5-11**      THE CORRELATION BETWEEN SELENIUM ADSORPTION AND THE MINERAL AND CHEMICAL COMPOSITION OF TAIWAN LOCAL GRANITE SAMPLES  
*T.H. Wang, C.-L. Chiang, C.-F. Wang (Taiwan)*

## THURSDAY (25 SEPTEMBER)

- P5-12** SELF-SEALING OF EXCAVATION INDUCED FRACTURES IN CLAY HOST ROCK  
*C.-L. Zhang (Germany)*
- P5-13** CRITICAL EVALUATION OF GERMAN REGULATORY SPECIFICATIONS FOR CALCULATING RADIOLOGICAL EXPOSURE  
*C. König, C. Walther, U. Smeddinck (Germany)*
- P5-14** AN INTRODUCTION TO THE TRANSPORT PROPERTIES RESEARCH LABORATORY AT THE BRITISH GEOLOGICAL SURVEY AND ITS 50+ YEARS EXPERIENCE IN GEOLOGICAL DISPOSAL RESEARCH  
*S.G. Zihms, R.P. Shaw, J.F. Harrington, R.J. Cuss, C.C. Graham, A. Wiseall, F. McEvoy (UK)*
- P5-15** CHARACTERIZATION OF HYDRAULIC CONNECTIONS BETWEEN MINE SHAFT AND CAPROCK BASED ON TIME SERIES ANALYSIS OF WATER LEVEL CHANGES FOR THE FLOODED ASSE I SALT MINE IN NORTHERN GERMANY  
*R. Brauchler, R. Mettier, P. Schulte, J. F. Führböter (Switzerland)*
- P5-16** PREPARATION AND ESTIMATION OF THERMODYNAMIC PROPERTIES OF FE(II)-, CO(II)-, NI(II)- AND ZR(IV)-CONTAINING LAYERED DOUBLE HYDROXIDES  
*K. Rozov, H. Curtius, D. Bosbach (Germany)*
- P5-17** MICROORGANISMS IN POTENTIAL HOST ROCKS FOR GEOLOGICAL DISPOSAL OF NUCLEAR WASTE AND THEIR INTERACTIONS WITH RADIONUCLIDES  
*A. Cherkouk, M. Liebe, L. Lütke, H. Moll, T. Stumpf (Germany)*
- P5-18** COLLABORATION OF THE DUTCH RESEARCH PROGRAM FOR RADIOACTIVE WASTE DISPOSAL (OPERA) AND TU DELFT  
*D.M. Bykov, J.L. Kloosterman, E.A.C. Neeft, E.V. Verhoef (the Netherlands)*

## FRIDAY (26 SEPTEMBER)

08:00 Registration – Conference office opens

### SESSION 6 CONSTRUCTION OF TECHNICAL BARRIERS

*Chairs: W. Minkley (Germany) and W. Hund (Germany)*

- 08:30 THE DOPAS FULL-SCALE DEMONSTRATION OF PLUGS AND SEALS PROJECT AND RELATED GRS NATIONAL RD&D PROGRAMMES – A RETROSPECTIVE VIEW ON 24-MONTHS OF INVESTIGATION **S6-01**  
*O. Czaikowski, T. Meyer, R. Mieke (Germany)*
- 08:50 DESIGN AND PROOF OF FUNCTION OF A CLOSURE SYSTEM FOR AN HLW-REPOSITORY IN ROCK SALT – RESULTS OF THE PRELIMINARY SAFETY ANALYSIS FOR THE GORLEBEN SITE (VSG) **S6-02**  
*N. Müller-Hoeppe, M. Breustedt, D. Buhmann, O. Czaikowski, H.-J. Engelhardt, H.-J. Herbert, K. Wieczorek, J. Wolf (Germany)*
- 09:10 FEBEX-DP – DISMANTLING THE “FULL-SCALE ENGINEERED BARRIER EXPERIMENT” AFTER 18 YEARS OF OPERATION AT THE GRIMSEL TEST SITE, SWITZERLAND **S6-03**  
*F. Kober, I. Gaus (Switzerland)*

## FRIDAY (26 SEPTEMBER)

### SESSION 7 SITING STRATEGIES

Chairs: *M. Sailer (Germany) and W. Steininger (Germany)*

- 09:40 VERSI: A METHOD FOR THE QUANTITATIVE COMPARISON OF REPOSITORY SYSTEMS **S7-01**  
*T.U. Kämpfer, A. Rübel, G. Resele, J. Mönig (Switzerland)*
- 10:00 GEOLOGICAL BOUNDARY CONDITIONS FOR A SAFETY DEMONSTRATION AND VERIFICATION CONCEPT FOR A HLW REPOSITORY IN CLAYSTONE IN GERMANY – ANSICHT **S7-02**  
*L. Stark, A. Bebiolka, J. Gerardi, J. Hammer, S. Jahn, M. Jobmann, S. Keller, T. Kühnlenz, A. Lommerzheim, J. Maßmann, A. Meleshyn, S. Mrugalla, T. Nowak, L. Ptock, K. Reinhold, A. Rübel, J. Sönneke, J. Wolf (Germany)*
- 10:20 THE DEVELOPMENT OF ROCK SUITABILITY CLASSIFICATION STRATEGIES IN THE FINNISH SPENT NUCLEAR FUEL DISPOSAL PROGRAMME **S7-03**  
*P. Hellä, A. Hagros, I. Aaltonen, P. Kosunen, J. Mattila (Finland)*
- 10:40 COFFEE BREAK

### SESSION 8 SCIENTIFIC ASPECTS OF THE NUCLEAR WASTE DISPOSAL SAFETY CASE (PART II)

Chairs: *L. Bailey (UK) and B. Kienzler (Germany)*

- 11:00 APPLICATION OF FUNDAMENTAL AQUATIC CHEMISTRY TO THE SAFETY CASE AND THE ROLE OF THERMODYNAMIC REFERENCE DATA BASES **S8-01**  
*M. Altmaier, X. Gaona, D. Fellhauer, H. Geckeis (Germany)*
- 11:20 ASSESSMENT OF THE LONG-TERM SAFETY FOR SFR **S8-02**  
*C. Greis Dahlberg, F. Vahlund (Sweden)*
- 11:40 IN-SITU EXPERIMENTS TO INVESTIGATE ROCK MATRIX RETENTION PROPERTIES IN ONKALO, OLKILUOTO, FINLAND **S8-03**  
*M. Voutilainen, A. Poteri, K. Helariutta, M. Siitari-Kauppi, P. Andersson, J. Byegård, K. Nilsson, M. Skålberg, P. Kekäläinen, J. Timonen, P. Pitkänen, K. Kemppainen, J. Liimatainen, A. Hautojärvi, L. Koskinen (Finland)*
- 12:00 STUDIES ON SPENT NUCLEAR FUEL EVOLUTION DURING STORAGE **S8-04**  
*V.V. Rondinella, T.A.G. Wiss, D. Papaioannou, R. Nasyrow (EU)*
- 12:20 CORROSION OF SPENT FUELS FROM RESEARCH AND PROTOTYPE REACTORS UNDER CONDITIONS RELEVANT TO GEOLOGICAL DISPOSAL **S8-05**  
*H. Curtius, D. Bosbach, G. Deissmann (Germany)*
- 12:40 LUNCH BREAK

## FRIDAY (26 SEPTEMBER)

### SESSION 9 SAFETY ASPECTS OF REPOSITORY OPERATION

*Chairs: A. Van Luik (USA) and N. Medyantsev (Russia)*

|       |   |              |
|-------|---|--------------|
| 14:00 | THE WASTE ISOLATION PILOT PLANT: PERMANENT ISOLATION OF DEFENSE TRANSURANIC WASTE IN DEEP GEOLOGIC SALT – A NATIONAL SOLUTION AND INTERNATIONAL MODEL<br><i>A. Van Luik, J. Franco (invited) (USA)</i>  | <b>S9-01</b> |
| 14:30 | DEEP GEOLOGICAL REPOSITORIES – SAFE OPERATION & LONG-TERM SAFETY IN THE PRISM OF REVERSIBILITY<br><i>C. Espivent, M. Tichauer (France)</i>  | <b>S9-02</b> |
| 14:50 | TEN YEARS OF EXPERIENCE IN TECHNOLOGY DEVELOPMENT... WHAT USE FOR THE CIGÉO PROJECT?<br><i>J.-M. Bosgiraud, D. Delort (France)</i>  | <b>S9-03</b> |
| 15:10 | LESSONS LEARNED IN DEMONSTRATION PROJECTS REGARDING OPERATIONAL SAFETY DURING FINAL DISPOSAL OF VITRIFIED WASTE AND SPENT FUEL<br><i>W. Filbert, P. Herold (Germany)</i>  | <b>S9-04</b> |
| 15:30 | GEOSAF PART II – DEMONSTRATION OF THE OPERATIONAL AND LONG-TERM SAFETY OF GEOLOGICAL DISPOSAL FACILITIES FOR RADIOACTIVE WASTE – IAEA INTERNATIONAL INTERCOMPARISON AND HARMONISATION PROJECT<br><i>Y. Kumano, G. Bruno, M. Tichauer, B. Hedberg (IAEA)</i> | <b>S9-05</b> |
| 15:50 | CLOSING   |              |
| 16:00 | END   |              |