**NEA RWMC WORKSHOP ON DEVELOPING SAFETY CASES FOR VARIOUS RADIOACTIVE WASTE DISPOSAL FACILITIES**

**- *Needs and Challenges of RWMC Organisations***

**20-22 July 2022**

**Sheraton Bucharest Hotel**

**Bucharest, Romania**

**WORKSHOP PROGRAMME**

**DAY I
Wednesday 20 July 2022**

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| SESSION 1:OPENING OF THE WORKSHOP*Workshop Co-Chairs:Piet ZUIDEMA (EURAD)Lucy BAILEY (UK Nuclear Waste Services [former IGSC Chair])* |
| 08:30 | **1.1. Welcome Remarks***Hiroyuki UMEKI (RWMC Chair)**Rebecca TADESSE (Head of RWMD, NEA)**Mihaita GAINA (President ANDR, Romania)**Alice Mariana DIMA (Director ANDR, Romania)* * Background and objective of the workshop
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| **SESSION 2: EXPERIENCE AND ACCOMPLISHMENTS*****Session Chair:*** *Hiroyuki Umeki, (Japan, NUMO [RWMC Chair])* |
| 09:00 | **2.1. Guidance of radiation protection by ICRP***Eduardo GALLEGO (ICRP)* | Presentation  |
| 09:30 | **2.2. The Concept of Safety Case in the IAEA** *David BENNETT (IAEA)* * (DGR, intermediate-depth repositories, near-surface disposal facilities; graded approach);
 | Presentation   |
| 10:00 | **2.3. Overview of the Safety Case for DGR***Lucy BAILEY (UK, Nuclear Waste Services)* | Presentation  |
| 10:30 | **2.4. Overview of the Safety Case for LLWR** *Christepher McKENNEY (USA, NRC)*  | Presentation   |
| 11:00 | **2.5. Guidance of radiation protection by ICRP***Eduardo GALLEGO (ICRP)* | Presentation  |
| ***11:30*** | ***LUNCH BREAK*** *(1h30)****Poster Session (which will be available during the whole workshop)*** |
| **2.6. Progressive Development of Safety Case for Disposal Facilities** |
| 13:00 | **2.6.1. Safety Case in all Stages of DGR***Nicolas BRUYER (France, Andra)* | Presentation  |
| 13:30 | **2.6.2. Safety Case in the Concept Phase***Alice Mariana DIMA (Romania, ANDR)* | Presentation  |
| 14:00 | **2.6.3. Safety Case in the Operational Phase of LLWR***Ira STEFANOVA (Bulgaria, SERAW)* | Presentation  |
| ***14:30*** | ***COFFEE BREAK****(20 min**)* |
| **SESSION 3: SIMILARITIES AND DIFFERENCES IN DEVELOPING THE ELEMENTS IN SAFETY CASE***Sub-Sessions will be led by moderators* |
| **3.1. Long-Term Safety** ***Topics****: modelling, scenario development, uncertainty management****Moderator****: Klaus-Jürgen RÖHLIG (Professor, Germany, Clausthal University of Technology (TUC))* |
| 14:50 | **3.1.1. Piet ZUIDEMA** *(EURAD)* | Presentation |
| 15:00 | **3.1.2.**  **Jeong Hyoun YOON***(KINS/KORAD)* | Presentation |
| 15:10 | **3.1.3. Johan ANDERSSON***(Sweden, SKB)* | Presentation |
| 15:20 | **3.1.4. Claire TRONEL** *(France, Andra)* * (LLRW / shallow depth disposal)
 | Presentation |
| 15:30 | **3.1.5. Panel Discussion** |  |
| **3.2. Operational Safety** ***Topics****: how to improve technologies, keep track of waste inventory and continue to update safety case****Moderator****: Christepher McKENNEY (USA, NRC)* |
| 15:55 | **3.2.1. & 3.2.2. Ed GARZA** *(USA, DOE Carlsbad Field Office)** (WIPP Case)
 | Presentation  |
| 16:15 | **3.2.3. Peter MOLNAR** *(Hungary, PURAM)* | Presentation  |
| 16:25 | **3.2.4. Elena VICO DEL CERRO,** *(Spain, ENRESA)** (LLW and ILW)
 | Presentation  |
| 16:35 | **3.2.5. Claire TRONEL** *(France, Andra)*  | Presentation  |
| 16:45 | **3.2.6. Panel Discussion**  |  |
| **3.3. Safety Case Updates*****Topics****: how to update safety case before closure* ***Moderator****: Jean-Michel HOORELBEKE (France, Andra)* |
| 17:10 | **3.3.1. Tom PEAKE** *(USA, SPA)** (outcomes of the topical session in IGSC-21 meeting in 2019)
 | Presentation  |
| 17:20 | **3.3.2. Eva ANDERSSON** *(Sweden, SKB)** (recertification of the LLW and ILW repository – SFR)
 | Presentation  |
| 17:30 | **3.3.3. Lucy BAILEY** *(UK, Nuclear Waste Services)** (Research Support Office (RSO) support to the safety case)
 | Presentation  |
| 17:40 | **3.3.4. Thomas KAEMPFER** *(Switzerland, NAGRA)* | Presentation  |
| 17:50 | **3.3.5. Panel Discussion** |  |
| 18:15 | **Wrap-Up of Day I by Workshop Co-Chairs***Lucy BAILEY (UK, Nuclear Waste Services)** ***Key messages from Day-1 discussions based on the questions below:***
	+ What are the similarities and differences in developing safety case for various disposal facilities?
	+ What kind of information (database, models, methodologies, etc.) can be shared among facilities?
	+ What kind of outcomes can be shared between DGR and other types of disposal facilities?
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| ***18:25*** | ***END OF DAY I*** |
| 19:30 | **Dinner Hosted by Nuclear and Radioactive Waste Agency** *(Romania, ANDR)* |

**DAY II
Thursday 21 July 2022**

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| SESSION 3: SIMILARITIES AND DIFFERENCES IN DEVELOPING THE ELEMENTS IN SAFETY CASE*[CONTINUED]**Chair:Ulrich NOSECK (Germany, GRS)* |
| **3.4. Safety Case Updates** |
| 09:00 | **3.4.1. DGR***Alexander CARTER (NEA WP-IDKM Chair)* * (EGSSC and e-safety-case workshop)
 | Presentation  |
| 09:20 | **3.4.2. LLW/ILW Disposal***Axel LIEBSCHER (Germany, BGE)*  | Presentation  |
| **3.5. R&D Needs** |
| 09:40 | **3.5.1. DGR***Piet ZUIDEMA (EURAD)*  | Presentation  |
| 10:00 | **3.5.2. LLWR***Manuel CAPOUET (Belgium, ONDRAF/NIRAS)** (R&D open issues don’t prevent the construction/operation of a repository)
 | Presentation  |
| **3.6. Integration of Safety Arguments** |
| 10:20 | **3.6.1. DGR***Hiroyuki UMEKI (Japan, NUMO)* | Presentation  |
| 10:40 | **3.6.2. LLWR***Maria QUIRÓS (Spain, ENRESA)* | Presentation  |
| ***11:00*** | ***COFFEE BREAK****(20 min**)* |
| **3.7. Safety Case Communication**  |
| 11:20 | **3.7.1. DGR***Lucy BAILEY (UK, NWM Services)** (outcomes of joint IGSC/FSC activities)
 | Presentation  |
| 11:40 | **3.7.2. LLWR***Christepher McKENNEY (USA, NRC)* | Presentation  |
| ***12:00*** | ***LUNCH BREAK*** *(1h30)* |

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| SESSION 4: CHALLENGES AND FUTURE ACTIVITIES*Session Chairs: Rebecca TADESSE (Head of RWMD, NEA)Klaus-Jürgen RÖHLIG (Germany, TUC)* |
| 13:30 | **4.1. NEA***Hiroyuki UMEKI (RWMC Chair)** Unconventional waste (Being discussed in EGCUL)/outcomes of predisposal management
 | Presentation  |
| 13:55 | **4.2. EC***Piet ZUIDEMA (EURAD)* * Knowledge Management
 | Presentation   |
| 14:20 | **4.3. IAEA***David BENNETT (IAEA)** IAEA Guidance of safety case for near-surface facilities Management
 | Presentation  |
| 14:45 | **4.4. Group Discussion** *Vladimir LEBEDEV (RWMD, NEA)* * Introduction of the break-outs
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| 14:50 | **4.4. Break-out Group Discussion** |  |
| 16:40 | **4.5. Summary of Group Discussions and Proposal of Recommendations to RWMC** *Rebecca TADESSE and Klaus RÖHLIG (Session Co-Chairs)** Summary of each group discussions (6 minutes per group):

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| * Group 1
 | * Group 5
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| * Group 2
 | * Group 6
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| * Group 3
 | * Group 7
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| * Group 4
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| ***17:10*** | ***COFFEE BREAK*** *(20min)****Poster Session (which COFF be available during the whole workshop)*** |
| 17:30 | **Findings and Recommendation to the RWMC***Piet ZUIDEMA & Lucy BAILEY (Workshop Co-Chairs)* |  |
| 17:35 | **Discussion** |  |
| 17:55 | **Final Remarks** |  |
| ***18:00*** | ***WORKSHOP ADJOURN*** |

**DAY III
Friday 22 July 2022**

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| SITE VISIT: HORIA HULUBEI NATIONAL INSTITUTE FOR R&D IN PHYSICS AND NUCLEAR ENGINEERING (IFIN-HH)*Site from Magurele,Reactorului st, no. 30, Ilfov county* |
| 09:00 | **General Presentation of the National Institute of Physics and Nuclear Engineering Horia Hulubei IFIN-HH Site** * Introduction presentation
 | Presentation  |
| 09:30 | **Presentation of the National Repository for Low and Intermediate Level Institutional Radioactive Waste, Baita-Bihor from IFIN-HH**  | Presentation  |
| 10:00 | **Presentation of the** **Radioactive Waste Treatment Plant from IFIN-HH** | Presentation  |
| 10:30 | **Predisposal management of Radioactive Waste that not complying the Waste Acceptance Criteria to be disposed of** | Presentation  |
| 11:00 | **Lessons Learned from decommissioning the** **nuclear research reactor VVR-S from IFIN-HH released from nuclear regulatory control since July 2020 and preparatory activities for decommissioning radiological installation Soviet type Cyclotron U-120** | Presentation  |
| **SITE VISIT** ***Start Time:*** *11h30****End Time:*** *13h30 (max. 14h00)* |
| 11:30 | **Visit of the Radioactive Waste Treatment Plant from IFIN-HH;**  |  |
| 13:00 | **Visit of the former nuclear research reactor VVR-S decommissioned with implementation immediate dismantling strategy** |
| ***13:30*** | ***END OF SITE VISIT*** |

**PROVISIONAL LIST OF PARTICIPANTS**

**BELGIUM**

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| **CAPOUET, Manuel***Expert in long-term safety assessment*ONDRAF/NIRAS |

**BULGARIA**

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**CZECH REPUBLIC**

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**FINLAND**

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**FRANCE**

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**GERMANY**

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**HUNGARY**

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**JAPAN**

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**NORWAY**

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**SPAIN**

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**SWEDEN**

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**UNITED STATES**

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**UNITED ARAB EMIRATES (UAE)**

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**EURAD**

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**THE NUCLEAR ENERGY AGENCY (NEA)**

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