***NEA RWMC Workshop on Developing Safety Cases for Various Radioactive Waste Disposal Facilities***

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

**20-22 July 2022**

Venue: Sheraton Bucharest Hotel

Bucharest, Romania

**DAY 1, 20 July 2022**

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| Session 1: Opening of Workshop  Workshop Co-Chairs:  Piet ZUIDEMA, EURAD  Lucy BAILEY, UK Nuclear Waste Services (former IGSC Chair) | | | |
| 8:30 |  | 1.1 Welcome remarks  *Hiroyuki UMEKI, RWMC Chair, NUMO, Japan*  *William D. MAGWOOD, IV, NEA Director-General* *Mihaita GAINA, President ANDR, Romania*  *Alice Mariana DIMA, Director ANDR, Romania*   * *Background and objectives of this workshop* |  |
| **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(DGR, intermediate-depth repositories, near-surface disposal facilities; graded approach)*Gerard BRUNO, IAEA* | 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, US NRC* | Presentation |
| **11:00** |  | 2.5 Regulatory activities for safety cases in all stages*Jaakko LEINO, Finland STUK* | Presentation |
| **11:30** |  | *LUNCH (1 h 30 min)**Poster Session (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 Nuclear and Radioactive Waste Agency (ANDR)* | Presentation |
| **14:00** |  | 2.6.3. Safety case in the operational phase of LLWR *TBD* | Presentation |
| **14:30** |  | *BREAK (20 min)* |  |
| **Session 3: Similarities and Differences in Developing the Elements in Safety Case** | | | |
| 3.1. Long-term safety Topics: modelling, scenario development, uncertainty management  **Moderator**: Klaus-Jürgen RÖHLIG, Professor, Clausthal University of Technology (TUC), Germany | | | |
| 14:50 |  | *3.1.1. Piet ZUIDEMA, EURAD* | Presentation |
| 15:00 |  | *3.1.2. Dr YOON, Korea KINS/KORAD* | Presentation |
| 15:10 |  | *3.1.3. Johan ANDERSON, Sweden SKB, – DGR* | Presentation |
| 15:20 |  | *3.1.4. Claire TRONEL (co-writer Virginie WASSELIN), 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, US NRC, USA | | | |
| **15:55** |  | *3.2.1+3.2.2. Ed GARZA, US Carlsbad Field Laboratory (WIPP case)* | Presentation |
| **16:15** |  | *3.2.3. Amy HUNTINGTON, UK LLWR* | Presentation |
| **16:25** |  | *3.2.4. Elena VICO DEL CERRO, Spain ENRESA* (LLW and ILW) | Presentation |
| **16:35** |  | *3.2.5. Claire TRONEL (co-writers Mathieu Laplanche/Sylvie Voinis), 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 | | | |
| **17:10** |  | *3.3.1. Tom PEAKE, US EPA*(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. Alexander CARTER, UK Nuclear Waste Services, TBC*(Digital 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 1 by the 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? |  |
| **18:25** |  | *END OF DAY 1* |  |
| **19:30** |  | Dinner hosted by Nuclear and Radioactive Waste Agency (ANDR), Romania |  |

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| DAY 2, 21 July 2022 | | | |
| **Session 3: Similarities and Differences in Developing the Elements in Safety Case**  **[CONTINUED]**  **Chair Ulrich NOSECK, GRS** | | | |
| **09:00** |  | Information and knowledge management3.4.1. DGR*Alexander CARTER, NEA WP-IDKM Chair. TBC*(EGSSC and e-safety-case workshop) | Presentation |
| **09:20** |  | 3.4.2. LLW/ILW disposal*TBD* | Presentation |
| **09:40** |  | 3.5 R&D needs3.5.1. 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 |
| **10:20** |  | 3.6 Integration of safety arguments3.6.1. DGR*Hiroyuki UMEKI. Japan NUMO* | Presentation |
| **10:40** |  | 3.6.2. LLWR*Maria QUIRÓS, Spain ENRESA* | Presentation |
| **11:00** |  | *BREAK (20 min)* |  |
| **11:20** |  | 3.7 Safety case communication3.7.1. DGR*David BRAZIER, NEA FSC/EA UK*(outcomes of joint IGSC/FSC activities) | Presentation |
| **11:40** |  | 3.7.2. LLWR*Christepher MCKENNEY, NRC US* | Presentation |
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| **12:00** |  | *LUNCH (1 hr 30 min)* |  |
| **Session 4: Challenges and Future Activities**  **Session Chairs: Rebecca Tadesse (Head of RWMD, NEA)**  **and Felix Altorfer** | | | |
| **13:30** |  | 4.1 NEAUnconventional waste (Being discussed in EGCUL)/outcomes of predisposal management workshop - *Hiroyuki UMEKI, RWMC Chair* | Presentation |
| **13:55** |  | 4.2 ECKnowledge management*Piet ZUIDEMA, EURAD* | Presentation |
| **14:20** |  | 4.3 IAEAIAEA Guidance of safety case for near-surface facilities - *Gerard BRUNO or David BENNET, IAEA* | Presentation |
| **14:45** |  | 4.4 Group discussionIntroduction of the breakouts after the “Break” *Vladimir LEBEDEV, NEA RWMD* |  |
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| **14:50** |  | 4.4 Group discussion- Break-out discussion |  |
| **16:40** |  | 4.5 Summary of group discussion and proposal of recommendations to RWMC –Rebecca TADESSE and Felix ALTORFERSummary of group discussion (6 min / group)  * + Group 1   + Group 2   + Group 3   + Group 4   + Group 5 |  |
| **17:10** |  | *BREAK* |  |
| **17:30** |  | Proposals of recommendations to the RWMC |  |
| **17:35** |  | Discussion |  |
| **17:55** |  | Final remarks |  |
| **18:00** |  | *WORKSHOP ADJOURN* |  |
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|  |  | **DAY 3, 22 July 2022** |  |
| *Site visit* ***Horia Hulubei National Institute for R&D in Physics and Nuclear Engineering (IFIN-HH)*** | | | |

***Draft Agenda***

***for the visit the IFIN-HH site from Magurele,***

***Reactorului st, no. 30, Ilfov county***

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| Site visit  Horia Hulubei National Institute for R&D in Physics and Nuclear Engineering (IFIN-HH) | | |
| 09:00-09:30 | General Presentation of the National Institute of Physics and Nuclear Engineering Horia Hulubei IFIN-HH site | Introduction presentation |
| 09:30-10:00 | Presentation of the National Repository for Low and Intermediate Level Institutional Radioactive Waste, Baita-Bihor from IFIN-HH | Presentation |
| 10:00-10:30 | Presentation of the Radioactive Waste Treatment Plant from IFIN-HH | Presentation |
| 10:30-11:00 | Predisposal management of Radioactive Waste that not complying the Waste Acceptance Criteria to be disposed of | Presentation |
| 11:00-11:30 | 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 |
| 11:30-13:00 | Visit of the Radioactive Waste Treatment Plant from IFIN-HH; | Visit |
| 13:00-13:20 | Visit of the former nuclear research reactor VVR-S decommissioned with implementation immediate dismantling strategy | Visit |

Please note: end time of the site visit: 13:30 max 14:00