

Unclassified

NEA/RWM(2012)1

Organisation de Coopération et de Développement Économiques
Organisation for Economic Co-operation and Development

15-Mar-2012

English - Or. English

NUCLEAR ENERGY AGENCY
RADIOACTIVE WASTE MANAGEMENT COMMITTEE

NEA/RWM(2012)1
Unclassified

WORKING PARTIES ACHIEVEMENTS AND PLANS

This document supports item 7 of the draft agenda of the 45th Session of the RWMC.

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JT03317923

Complete document available on OLIS in its original format

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FORUM ON STAKEHOLDER CONFIDENCE

INTRODUCTION

The integration of wider socio-political considerations is a major challenge for all waste management programmes. The RWM provides a forum for information exchange in this area that also allows for exchange of views with relevant stakeholders. The Forum on Stakeholder Confidence is composed of nominees from NEA Member countries with responsibility, overview, and/or experience in the field of stakeholder interaction and confidence. The FSC meets at least once per year, typically alternating between two meeting formats. Regular (annual) FSC meetings focus on information exchange among the members and in-depth discussion of specific topics. National workshops and community visits, hosted by a member institution, allow for interaction with a broader range of stakeholders in the national context, on topics of concern to the stakeholders. These workshops provide FSC members with an opportunity to view the inner workings of waste-management programmes, the methods they have employed for stakeholder interactions, the successes and failures they have had. At workshops, involved stakeholders express directly their own views about their experience of participation in decision-making.

Reference documents

Strategic document: <http://www.nea.fr/html/rwm/docs/2001/rwm-fsc2001-2-rev2.pdf>

FSC Phase-3 Programme of work (2010 and beyond): NEA/RWM/FSC(2010)1

Mandate: NEA/RWM(2005)13/REV2 (updated 8 January 2010)

Core Group Members

The FSC chairperson is Janet Kotra (US NRC). Core Group members include: Jo-Ann Facella (NWMO), Sébastien Farin (ANDRA), Mariano Molina (ENRESA), and Jay Redgrove (UK NDA).

HIGHLIGHTS 2011

- The 8th FSC National Workshop and Community Visit entitled “Actual Implementation of a Spent Nuclear Fuel Repository: Seizing Opportunities” was held in Gimo, Sweden, 4-6 May 2011. The invitation was extended to local stakeholders in several FSC countries and their input was reflected in the final programme (questions for discussion by round tables). Ninety participants representing a total of 13 countries participated in the workshop.
- The 12th FSC regular meeting took place 13-15 September 2011. It was structured around the development of the “FSC Glossary” and included joint reflections on the Sweden workshop and on the Japanese post-Fukushima situation, as well as topical discussions on Reversibility and Retrievability, on Anticipating Change and Preparing for the Future, on Models for Early Involvement, on Transparency: Why and How?, on Linking National and Regional/Local Levels in a Siting Process. Discussed were new studies on siting, potential definitions of what constitutes “willing consent” by communities, and new flyers, e.g., on the symbolic dimension of radioactive waste management. The update of a 2003 study with the Regulators’ Forum on the “Evolving Role and Image of the Regulator” was also reviewed.

ACTIVITIES AND ACCOMPLISHMENTS SINCE RWMC-44 (MARCH 2011)

Activities and Projects

- **Meeting of the FSC**

The 12th FSC regular meeting took place 13-15 September 2011. It was structured around the development of the “FSC Glossary” and included joint reflections on the Sweden workshop and on the Japanese post-Fukushima situation, as well as topical discussions on Reversibility and Retrievability, on Anticipating Change and Preparing for the Future, on Models for Early Involvement, on Transparency: Why and How?, on Linking National and Regional/Local Levels in a Siting Process. Discussed were new studies on siting, potential definitions of what constitutes “willing consent” by communities, and new flyers, e.g., on the symbolic dimension of radioactive waste management. The update of a 2003 study with the Regulators’ Forum on the “Evolving Role and Image of the Regulator” was also reviewed.

- **Reflections on the Sweden Workshop**

The 8th FSC National Workshop and Community Visit entitled “Actual Implementation of a Spent Nuclear Fuel Repository: Seizing Opportunities” was held in Gimo, Sweden, 4-6 May 2011. The invitation was extended to local stakeholders in several FSC countries and their input was reflected in the final programme, in the questions for discussion by round tables. Ninety participants representing a total of 13 countries participated in the workshop.

Future directions of work for the Swedish and open questions after the workshop include:

- Environmental Impact Assessment: was it appropriate that the developer led this work, or is there a risk that they steered the process too much? Their steering is written into EU law but this questioning might be developed further.
- Who is the most appropriate actor to be responsible for knowledge transfer over the long term? An international body, whereas local ones wish to be very much involved?
- Who should take part in various stages of the process? Is different participation appropriate in different stages? Do we have to rethink it now for the licensing period?

Two topics that interest stakeholders particularly could be investigated by the FSC: (1) Memory keeping – who, how? (2) Monitoring and societal confidence building. The FSC noted an opportunity here for co-operating with the RWMC project on the Preservation of Records, Knowledge and Memory Across Generations (RK&M), and with the NEA Secretariat and IGSC who have taken the initiative to co-operate in organising the EU MoDeRn final conference (March 2013).

- **FSC Glossary of Terms**

The Glossary is a compendium of concepts important to the FSC, explaining their emergence in FSC work and their basis in member practices. It is intended to help long-time members consolidate their understanding as much as to help new members come up to speed and to inform the general community at large. New chapters were added in the past year. The FSC-12 meeting checked each chapter against new information uncovered in topical discussions.

- **Reversibility and Retrievability (Topical discussion under PoW theme 1 “Link Between RD&D and Stakeholder Confidence”)**

At the FSC-12 meeting the topical discussion on Reversibility and Retrievability (R&R) included presentations on R&R project of the NEA and on the learning by Andra in this area. The FSC had presented a paper on this topic at the Reims conference (Dec. 2010). The final statement of the conference “R&R are not design goals, but attributes of a process that can help facilitate the journey to the goal of safe, socially-accepted ultimate disposal” was found to be in harmony with the FSC learning and approach.

- **Anticipating and preparing for the future (Topical discussion under several FSC themes)**

Presentations were heard on civic engagement and social networking, on technological decision making and social networking, on expectations of energy trends, on adapting to change as an organizational goal. The Social Media topic was found to be of special interest and it was decided to incorporate it as a new topic in the FSC future programme of work.

- **Models for Early Involvement (Exploratory discussion under several FSC PoW themes)**

Input from several countries was reported and analyzed. The Secretariat will draft an introduction to show what a new FSC document on “Early involvement” would look like, taking account of the sensibilities expressed. Members will indicate if they already have studies or documents on the subject that the FSC members could augment from an international perspective.

- **Transparency: Why and How? (Topical discussion under PoW Theme 2)**

A discussion took place based on the FSC glossary entry on transparency. It proves difficult to find consensus on the meaning of “transparency” and it was suggested that the FSC should investigate how stakeholders feel or think about organisations’ being transparent and identify their expectations. A study or survey could be undertaken to understand stakeholders’ particular requirements, by asking local, regional, national actors, implementers and regulators what are the features of transparency.

- **Linking National and Regional/Local Levels in a Siting Process (Topical discussion under PoW themes 4 and 5)**

There were presentations on the findings of the BRC in the United States and on the most significant political decisions on RWM awaited in each member country. Multi-level governance should be an abiding theme of the FSC but it was noticed that country context should be predominant in the analysis. The FSC should follow developments on this issue and look at how meaningful “control” of RWM can be shared across governance levels. The FSC was pleased with the approval by the RWMC of the collective statement on “National Commitment – Regional/Local Confidence), which was prepared with FSC support.

- **Secretariat-sponsored studies on siting and on what constitutes “willing community” (PoW theme 5)**

The FSC has an ongoing interest in siting and in building sustainable relationships among the various actors and stakeholders in RWM. To support this activity, the Secretariat commissioned a report regarding best practice and supporting theory in the siting of radioactive waste management installations. These studies aimed at including the most pertinent and up-to-date scholarly references in this area and at building on the FSC presentation by the NEA secretariat to the US Blue Ribbon Commission (Sept. 2010). Prof. Jenkins-Smith produced those studies. He is Acting Director at the Center for Risk and Hazard Management, University of Oklahoma (USA) and has published extensively on nuclear waste management policy and on siting issues, and directs research on the same topics. The two studies will be posted on the FSC web page.

The FSC can deepen this topic by looking at the survey barometers used by members to measure understanding, acceptance, and quality of life in local contexts, the use of such measures in the process, and evaluation.

- **Symbolic Dimension and FSC Knowledge Consolidation and Transfer (Pow themes 6 and 7)**

Each entry in the FSC glossary of concepts and terms specifically addresses the symbolic dimension associated with that entry. This topic is thus truly cross-cutting in the FSC PoW.

The FSC discussed new flyers on transparency and the symbolic dimension of radioactive waste management and discussed the update of the 2003 brochure on the “evolving image and role of the regulator”.

- **Publications and Documents**

- A “seed paper” was developed at the request of the RWMC to help structure thinking for the ICGR, Toronto, October 2012; it reviews main lessons learned by the FSC in the area of “National Commitment, Regional and Local Confidence”. It is published in 2012 as a Collective Statement of the RWMC.
- The FSC produced a new flyer on the “Symbolic Dimension of Radioactive Waste Management” (see above) available on the FSC homepage www.oecd-nea.org/fsc.

Outreach, Presentation and Stocktaking

- Plenary presentation on “Socially functional processes to manage the safe disposal of nuclear waste” at the Stockholm Spring Talks (May 2011).
- Invited talks by the Secretariat at the EU Parliament and in the Italian National Debate on Nuclear incorporated FSC lessons.
- A 3-hour lecture was delivered at the University of Versailles on the lessons learnt by the FSC in the area of risk governance.

MAJOR AREAS OF ACTIVITY FORESEEN IN 2012 – 2013

Activities and Projects

- Continued development and publication of the “FSC Glossary”.
- Flyers on “Stakeholder Involvement Techniques” and “Transparency” will be finalised and released
- Updating the FSC PoW to reflect FSC-12 findings and also the RWMC Strategic document of 2012
- Updating of the FSC Strategic document
- Undertaking new studies upon further decision by the FSC Core Group
- 12th FSC meeting with topical sessions on the main FSC PoW themes
- Organisation of 9th FSC workshop in the Czech Republic. The workshop on “Deliberating together on geological repository siting – Expectations and challenges in the Czech Republic” takes place under the auspices of the Minister for Trade and Industry of the Czech Republic

Knowledge Consolidation and Transfer

- ***Publications Expected***

- Proceedings of topical sessions and workshop.
- Flyers on “Stakeholder Involvement Techniques” and “Transparency”.
- FSC Glossary examining major concepts considered by the FSC since its inception.
- Siting and “willing consent” studies.

- ***Outreach, presentation and stocktaking***

- Plenary presentation at ICGR 2012.
- Participate in and support (as needed) RWMC projects on Preservation of RK&M Across Generations, and RWMC-RF initiatives.

INTEGRATION GROUP FOR THE SAFETY CASE (IGSC)

INTRODUCTION

The IGSC serves as the main technical advisory body to the RWMC on deep geological disposal of long-lived and high-level radioactive waste. The focus of its work is on methodologies and strategies for characterising and evaluating disposal sites as well as on repository design and safety assessment aspects for various waste types. The work activities of the IGSC promote pooling of resources, sharing and synthesis of understanding and experience, and communication of findings to varied audiences.

The programme of work reflects two major directions for the IGSC in the coming years. The first is a renewed emphasis on the technical and methodological issues at the heart of the safety case (i.e., safety assessment), as there have been significant advances. The second theme is the integration of long-term safety imperatives with operational and engineering considerations, which are of immediate concern as programmes approach licensing and construction phases of repository development. The PoW also emphasises increased coordination by IGSC with the main RWMC and its working bodies.

Reference Documents

IGSC Foundation Document:	NEA/RWM/IGSC(2000)10
IGSC Programme of Work 2011-2013:	NEA/RWM/IGSC(2011)1/PROV
Update of IGSC Activities and Accomplishments:	NEA/RWM/IGSC (2010)7
IGSC Mandate:	NEA/RWMC/IGSC(2010)6

IGSC Chair and Core Group Members (as of IGSC-13)

IGSC chairperson is Klaus-Jürgen RÖHLIG (TU Clausthal, Germany). Members of the Core Group are: Fabrice BOISSIER (ANDRA), Paul GIERSEWSKI (NWMO). Allan HEDIN (SKB), Doug ILETT (UKEA), Hiroyuki UMEKI (JAEA), Abe VAN LUIK (USDOE/WIPP).

HIGHLIGHTS

- IGSC-13 Meeting (Oct. 2011, Paris): Topical session on gas migration. Next IGSC meeting (IGSC-14) has been scheduled for Oct 8-10, 2012. Topical session on uncertainty analysis
- Clay Club held an international workshop on Microscopic Observations and Imaging Techniques for Clays, on September 6-8, 2011, at Karlsruhe Institute of Technology, Germany.
- Joint RF / IGSC workshop on “Preparing for Construction and Operation of Geological Repositories – Challenges to the Regulator and the Implementer” held on Jan 25-27, 2012.

ACTIVITIES AND ACCOMPLISHMENTS SINCE RWMC-44 (MARCH 2011)

Activities and Projects

- **Meeting of the IGSC-13**

IGSC-13 was held on 18-20 October at NEA, Issy-les-Moulineaux, France.

The topic of the IGSC-13 Topical Session was on “gas migration”. It was agreed that the topical session task group will prepare an initial position paper based on the key discussions during the session. The IGSC core group will review and present the position paper in IGSC-14 as well as at FORGE 2013 conference. Based on this position paper as well as FORGE outcomes, the IGSC also agreed to consider the development of a flyer and/or a brochure on the topic of gas migration.

- **Safety Case Brochure**

The IGSC is updating the safety case brochure to reflect what has been learned since it was first published in 2004. The intent of the safety case brochure is to provide guidance to programmes that are planning to develop their safety case. It is anticipated that the brochure update will be complete in 2012.

- **Safety Case Symposium**

The Safety Case Symposium is currently planned for October 2013 and will be followed by a shortened IGSC annual meeting (IGSC-15). It is planned that the 3-day symposium will replace the topical session of IGSC-15 and the annual meeting will be covered in 2 days; both events will be held at the OECD Conference Centre. A preliminary agenda of the symposium was discussed at IGSC-13 and a symposium flyer is currently being prepared by the programme committee.

- **IGD-TP**

The Implementing Geological Disposal of Radioactive Waste Technology Platform (IGD-TP) of the European Commission is to provide a framework for stakeholders to define research and development priorities. The technology platform also plays a key role in ensuring adequate research is performed on areas with important industrial relevance. A Strategic Research Agenda (SRA) has been developed and issued in July 2011. A Deployment Plan has also been developed and presented at the 2nd exchange forum held on Nov 29, 2011.

The IGSC stays abreast with the work of this EC project to co-ordinate its own activities.

- **MoDeRn**

IGSC in this 4-year EC project (started in 2009) with an objective of providing a reference framework for developing and implementing monitoring activities in a geological repository will end in March 2013. An expert stakeholder workshop was held in Oxford, UK on May 4-5, 2011 and their 5th internal project workshop was held in Prague on Jun 7-8, 2011. Two reports - (i) The National Monitoring Contexts – Summary Report; and (ii) A Technical Requirement Report have been published in 2011. The project closure conference is currently planned for March 19-21, 2013. It is planned that the NEA will arrange a rapporteur to support the conference and by associating with the IGSC, the rapporteur will, based on the conference results, develop a 2-4 page flyer to summarize key monitoring issues on geological disposal,

- **FORGE**

IGSC co-operates in the EC FORGE project that has been initiated to address key gas migration issues in repository performance assessment. Gases which may be produced in a repository include (i) hydrogen from metal corrosion, (ii) radiolytic hydrogen from the radiolysis of water; (iii) radon from the radioactive decay of some waste and/or (iv) carbon dioxide and methane from

biodegradable wastes. The FORGE project, started in 2009, addresses the gas migration issues through a series of laboratory and field-scale experiments, including the development of methods for up-scaling allowing the optimization of concepts through detailed scenario analysis. A project closure scientific conference is currently scheduled for Feb 5-7, 2013. The NEA will arrange a rapporteur to support the conference and by associating with the IGSC, the rapporteur will develop a 2-4 page flyer to summarize the gas migration issues based on the conference proceedings. Final conference papers will be published as a Geological Society Special Publication after March 2013.

- **Belgian Safety Case Review**

ONDRAF/NIRAS, in preparing their license application for their surface disposal of low and medium-level short lived waste in Dessel, has requested (also agreed by the Belgian Minister) the NEA RWMC to conduct a peer review of their safety case. The IGSC is assisting the RWMC in this peer review and will focus on the long-term safety strategy as well as their long-term safety assessment methodology and results. The introductory seminar will be held on Dec 19-20, 2011 in Brussels and the review week has been planned for April-May 2012 timeframe. The review is expected to complete in July 2012.

- **Engineered Barriers Systems (EBS) Project**

The overall EBS project, jointly sponsored by the NEA and the European Commission (EC), was designed to develop greater understanding of how to achieve the necessary integration for the successful design, testing, modelling and performance assessment of EBS for deep underground disposal of radioactive waste. The series of workshops addressed in sequence the various stages of the design and optimisation cycle for EBS.

A 2-page flyer has been prepared and is being published.

- **Expert Group on Assay Data of Spent Nuclear Fuel (EGADSNF)**

The Expert Group on Assay Data of Spent Nuclear Fuel was set up (in Dec 2006) to systematically obtain and document new isotopic composition data from Post-Irradiation Examination (PIE). The group held their 2011 annual meeting EGADSNF-5 on Sept 13-14 in London to discuss project related details as well as their new mandate. The extended mandate for the EGADSNF focuses on the development of a new framework for the spent fuel isotopic composition database (SFCOMPO) and also a complete evaluation of assay data besides compilation and archiving primary experimental data. The current SFCOMPO is inadequate as the existing data only cover a limited number of isotopes. Future activities to improve the SFCOMPO will be planned for. The State-of-the-Art Report on spent fuel assay data which includes data requirements from waste management has been published.

- **AMIGO Project**

The AMIGO project (Approaches and Methods for Integrating Geologic Information in the Safety Case) is a series of workshops focused on collection and integration of geologic information (e.g., geophysical, hydrogeological, geochemical, structural) into PA models and the overall Safety Case. The AMIGO project was launched to better understand the state-of-the-art in collecting and integrating all types of geologic information in the safety case.

A 2-page flyer on the topic of geosciences and the safety case for geological disposal is being prepared.

- **IGSC Cross-cutting Issues: Workshop on Cementitious Materials**

An ad-hoc series of technical workshops on the theme of “cross-cutting issues” was approved as follow-up to the IGSC projects on EBS and geoscience (AMIGO and geosphere stability) and as a natural extension in terms of integrating their outcomes.

The report summarizing the results of the cementitious materials workshops is being prepared for publication.

- **Review of Methodologies for Safety Assessment (MeSA)**

Since 1991, when the last significant NEA document on the topic of safety assessment methods brochure, “Radioactive Waste Disposal: Review of Safety Assessment Methods” had been published, the context and application of safety assessment have evolved considerably – notably with the development of the broader “safety case” concept and with the further development (and, in some cases, peer review) of national safety cases. Although specific aspects of safety assessment have been addressed in international projects, it has been found timely to conduct a comprehensive review of progress over the last decades and a new project was started by IGSC in 2008.

The final MeSA report is currently being prepared for publication.

IGSC submitted a paper to “Probabilistic Safety Assessment and Management (PSAM/ESREL)” in June 2011. The paper has been accepted and will be presented at the June 25-29, 2012 conference in Helsinki, Finland.

- **Clay Club**

The Clay Club held an international workshop on microscopic observations and imaging techniques for clays in Karlsruhe, Germany on Sept 6-8, 2011, followed by the annual meeting (Sept 8-9, 2011). The workshop consisted of 4 sessions with over 100 participants. The proceedings of the workshop will be published in 2012.

The 5th international meeting on clays has been scheduled for Oct 22-25, 2012 and will be held in Montpellier, France on the topic of “Natural and Engineered Barriers for Radioactive Waste Confinement”. The annual meeting CC-22 is scheduled for Oct 25, 2012, following the 5th clay conference.

The Clay Club also plans to hold a joint workshop with Clay Mineral Society in 2015 with an objective of sharing further development of microscopic observation modelling technique and integration.

- **FEP Database**

The IGSC noted that the current NEA FEP report and the international FEP list are outdated and do not reflect recent experience in performance assessments. A FEP task group has therefore been formed to resolve the issue and to lead a questionnaire to collect opinions of members. Based on the collected responses, the task group proposed 4 tasks at the IGSC-13 meeting: (i) to update the project-specific FEP (PFEP) list by gathering information from national programmes and projects; (ii) develop a NEA FEP database which will comprise the existing set of international FEP (IFEP) and several sets of PFEPs; (iii) review and update the NEA generic FEP list; (iv) create a NEA FEP web page. The proposed tasks have been accepted by the IGSC and members have expressed their interest in supporting the proposed actions. A consultant has been selected to carry out the proposed work tasks in 2012-2013.

- **Scenarios**

The Scenario project was initiated to review the tools and methods used to describe a repository evolution. The project aims at identifying commonalities (i.e. possible evolutions of the disposal system) and weaknesses of models attributed to unknown or less known mechanisms. A task group has been formed to further develop the derivation of scenarios using safety functions. A questionnaire will be prepared for interested organizations to response and a scenario development workshop will be held in early 2013.

- **Indicators**

A questionnaire on indicators was conducted in Feb 2010 and a status report has been drafted. This report has the purpose of increasing awareness and understanding of the potential applications of complementary indicators in safety case. Guidance on the possible use of indicators is also provided. The report is currently being reviewed by the IGSC members and a task group meeting is scheduled for January 2012 to finalize the report. It is anticipated that the status report will be published in March 2012.

- **Sorption Project**

The Phase III for the Sorption Project has been underway since November 2007, with 12 participating organisations, to produce a Guideline Document which addresses thermodynamic sorption model development and the use of such models building a safety case. Since 2008 a Technical Direction Team has been contracted to undertake the main drafting task, together with the appointment of other experts to provide specific inputs and to undertake review tasks. The final report is in print.

- **TDB Project**

A new phase – Phase IV – entered into force in 2008, comprising a continuation and extension of the Iron review, a review of thermodynamics of species and compounds of Molybdenum, and a revision of the auxiliary data. These three reviews have all been started. An initiation report on cement phases is under preparation. Also being prepared is a “white paper” on the proposal for a report on the application of the Pitzer model to high ionic strength systems.

- **Salt Club**

Salt rock has been considered as a candidate host rock because of its favourable characteristics supporting the safe development of a repository. Specifically, salt rock has extremely low permeability / hydraulic conductivity which isolates the emplaced waste from near surface groundwater. Other positive attributes of salt rock include its high thermal conductivity, self-healing properties to reduce potential radionuclide pathways and its predictable geology.

The behaviour of rock salt under thermal and mechanical loads as well as under high doses of radiation is well understood. To continue developing a repository in salt rock, fundamental issues related to safety, regulatory / public/ political acceptance and costs need to be addressed. Four countries, Germany, Poland, the Netherlands, and the US, are considering rock salt as potential host rock and formed a Salt Club for a three-year trial duration. A Steering Group has been formed and initial work has been proposed. The first leadership council for the Salt Club will be led by Germany. A “salt compendium” is currently being prepared and will be provided to IGSC and RWMC for review in 2012.

- **URL brochure**

The RWMC published a brochure describing the role of underground research laboratories (URLs) in nuclear waste disposal programmes in 2001. A substantial amount of work has since been performed in the past decade in various URL programmes. The document is currently being updated by the Secretariat to cover the latest URL experience and activities. The draft brochure has been reviewed by the IGSC and other URL experts. The various aspects that need to be considered when developing a URL are also discussed in the revised brochure. The revision is anticipated to be complete in Q2-Q3, 2012.

- **Organisational Issues In Safety Cases**

The structure and operations of an organization affects stakeholder confidence and the development of the safety case. Activities on organizational issues are initiated to develop tools for assessing the

strengths and weaknesses of an organization so as to increase confidence. The task group has since developed a preliminary argumentation model (AM). To facilitate further development of the AM, a tool called “SCARAB” has also been posted on an access restricted web page for interested IGSC members to provide input for further discussions.

Outreach, Presentation and Stocktaking

- The IGSC ‘Fact Sheet on the Safety Case’ has been published. The fact sheet explains the concept and major elements of a safety case.
- Participated in Clay Club workshop and project annual meeting to foster knowledge transfer from related disciplines and other industrial applications.
- IGSC contributions to the reversibility and retrievability project as well as input on emerging issues for the RWMC-RF (especially regarding very long timescales).
- IGSC participation in the NEA Nuclear Science Committee’s Expert Group on Assay Data of Spent Fuel, in order to ensure that radionuclides of interest for waste disposal can be considered for inclusion in future databases and testing programmes.

MAJOR AREAS OF ACTIVITY FORESEEN IN 2012 – 2013

Activities and Projects

- **Update the Safety Case brochure**

An initial revision of the Safety Case brochure has been prepared and the IGSC core group is performing a preliminary review. The document will be further reviewed / commented by the IGSC members after the core group review(s).

- **Update to the FEPs Database**

The FEP task group will carry out the proposed actions and report progress at the next IGSC meeting (IGSC-14).

- **Scenarios**

The Scenario task group will prepare a questionnaire to seek views of member organizations and also to plan/ organize a Scenario development workshop in early 2013.

- **Joint RF/IGSC workshop**

A joint IGSC-RF workshop on “Preparing for construction and operation of geological repositories : Challenges to the regulator and the implementer was held on January 25-27,2012. Proceedings of the workshop will be published in mid 2012.

- **Safety Case Symposium**

The task group will form a program committee to continue the preparation of the symposium.

- **Organisational Issues In Safety Cases**

The task group will continue the development of the argumentation model in 2012.

- **Clay Club Workshop**

The Clay Club is preparing for the 5th international meeting on clays on the topic of “Natural and Engineered Barriers for Radioactive Waste Confinement” . .

- **Belgian Safety Case Review**

The peer review will begin in December 2011 and anticipate to complete the review process in July 2012. A review report documenting all review findings will be published in 2012.

- **Salt Club**

The Salt Club steering group will organize leadership council meeting to further discuss initial work activities as proposed during IGSC-13. A “salt compendium” is also being prepared by the steering group. A project kick-off meeting to discuss further details of work activities is scheduled for April 2012.

- **The 14th Meeting of the IGSC is scheduled for October 8-10, 2012.**

Knowledge Consolidation and Transfer

- ***Publications Expected in 2012***

- Synthesis report on Cementitious Materials in Safety Cases for Geological Repositories.
- Methodologies for Safety Assessment (MeSA) report.
- Update the 2004 brochure on the safety case.
- Update the 2001 URL brochure
- Report on safety indicators.
- Sorption Project Report
- 3 flyers on the following topics: (i) engineered barrier systems; (ii) geosciences and the safety case for geological disposal; and (iii) geosphere stability.

- ***Outreach, presentation and stocktaking***

- The safety case flyer serves as the model for an on-going series of flyers. Flyers under development include (a) Geosphere stability; (b) Engineered barrier systems (EBS); and (c) geosciences and the safety case for geological disposal.
- Continue participation in EG on Assay Data of SF.
- Continue monitoring of the TDB project.
- Participate in, and support (as needed), RWMC project on reversibility and retrievability, 2nd RWMC-RF workshop, other RWMC-RF initiatives (i.e., on very long timescales).
- Coordination with the EC on FORGE (gas migration), MoDeRN (monitoring technology) and IGD-TP projects. Evaluate possibility for co-organised workshops and international conferences in the 2012-2013 timeframe.
- Publication of the Clay Club workshop proceedings on “Microscopic Observations and Imaging Techniques for Clays”.

WORKING PARTY ON MANAGEMENT OF MATERIALS FROM DECOMMISSIONING AND DISMANTLING (WPDD)

INTRODUCTION

The WPDD serves as the main technical advisory body to the RWMC on decommissioning of nuclear facilities. The focus of its work is on methodologies and strategies for the analysis of decommissioning policy, strategy and regulation, including the related issues of management of materials, release of buildings and sites from regulatory control and associated cost estimation and funding. Beyond policy and strategy considerations, the WPDD also reviews practical considerations for implementation such as techniques for characterisation of materials, for decontamination and for dismantling.

The NEA Co-operative Programme for the Exchange of Scientific and Technical Information Concerning Nuclear Installation Decommissioning Projects (CPD) is a joint undertaking under Article 5 of the NEA Statute. It is independent from the WPDD, working under its own Agreement which ensures confidentiality of the information exchanged. The current 5-year Agreement expires end of December 2013.

Reference Documents

WPDD Mandate (extended until 2013)

NEA/RWM/WPDD(2010)9

The CPD is a Joint Undertaking under article 5a of the NEA statute, based on an Agreement between participants. The current Agreement covers the period 01 January 2009 - 31 December 2013. The Agreement may be extended thereafter for such further periods of time as are agreed by the Participants.
(Not available on OLIS)

Core Group Members

WPDD chairperson is Juan-Luis SANTIAGO (ENRESA, Spain). Members of the Core Group are: Melanie Brownridge (NDA, UK), Henrik EFRAIMSSON (SSM, Sweden), Rateb ABU-EID (US-NRC, USA), Doug METCALFE (NRC, Canada), Jean-Guy NOKHAMZON (CEA, France), Bernd REHS (BfS, Germany) and Ivo TRIPPUTI (SOGIN, Italy).

CPD Management Board

CPD chairperson is Ivo TRIPPUTI (SOGIN, Italy). Members of the Bureau are: Jan CARLSSON (SKB, Sweden), Guy COLLARD (SCK-CEN, Belgium) and Jean-Guy NOKHAMZON (CEA/DEN/DADN, France).

HIGHLIGHTS

- The WPDD-12 Annual Meeting was held at the NEA, and comprised a special seminar commemorating the 10th anniversary of the WPDD and a topical session on “Radiological Characterisation and Decommissioning”.
- The DCEG held its 4th plenary meeting in Luxembourg, on 15th and 16th of June, 2011.

- CPD Report on Decontamination and Dismantling of Radioactive Concrete Structures, Report on Remote Handling Techniques in Decommissioning, and Report on CPD - Twenty-five Years of Progress – The Last Five Years : 2006 through 2010, have been published.
- The responsibility of the CPD Project on Research Reactor R2/R2-0 Decommissioning has been transferred from STUDSVIK NUCLEAR AB to AB SWAFO, Sweden.

ACTIVITIES AND ACCOMPLISHMENTS SINCE RWMC-44 (MARCH 2011)

Activities and Projects

- **Meeting of the WPDD**

The WPDD held its 12th meeting on 15th – 17th November 2011 at the NEA, which comprised also a one-day seminar commemorating the 10th anniversary of the WPDD and a topical session on ‘Radiological Characterisation and Decommissioning’.

- **International Structure for Decommissioning Costing – ISDC** (previous Standardised List of Items for Costing Purposes -The Yellow Book)

A project to provide an update to the NEA document Nuclear Decommissioning: A Proposed Standardised List of Items for Costing Purposes (“The Yellow Book”), began in 2009 and was completed in 2011. The project was a collaborative effort between the NEA, the IAEA and the European Commission (DG-ENER). The deliverable from the project presents an updated version of the standardised cost structure first published in 1999 and includes an associated Users’ Manual which gives general guidance on developing a cost estimate for decommissioning a nuclear facility and, in particular, on using the standardised cost structure. It is intended that the cost structure laid out in the new “International Structure for Decommissioning Costing (ISDC)” will lend itself to greater harmonisation of cost reporting, and will facilitate easier comparison and better understanding of different cost estimates.

- **Management of Large Components from Decommissioning**

The Report describes a recent national experience, identifies key drivers influencing a decision making on the management of large components from decommissioning or maintenance, main relevant actors in the process, and gives an overview of relevant issues concerning large components management, their dependences and overall optimisation. It proposes a grid to assess all phases of waste management and to compare different available options. Necessity of early involvement of all stakeholders in discussion and decision making process is highlighted.

The Report also provides examples of removal of large components successfully performed in several countries.

- **Information on D&D Activities Internationally**

To facilitate information exchange amongst professionals, an updated version of the Map of International Activities on Decommissioning and Dismantling has been published. This document is being maintained as an information reference on ongoing international activities addressing decommissioning issues. The 2011 updated version has been finalized and released.

- **The NEA Co-operative Programme for the Exchange of Scientific and Technical Information Concerning Nuclear Installation Decommissioning Projects (CPD)**

In 2011 the Studsvik Nuclear AB’s CPD project has been transferred to a new company, AB SWAFO, Sweden. The Technical Advisory Group (TAG), through which the programme’s technical and scientific exchanges take place, met twice during 2011: in Policoro (Italy) and in Karlsruhe,

Germany (WAK and MZFR). Meetings in 2012 are scheduled to take place in Spain (ENRESA) and in the USA.

The work of the two groups of the TAG, Task Group on Decontamination and Dismantling of Concrete Structures and Task Group on Remote Handling Techniques has been completed and relevant reports issued, as well as a CPD 25 Year Report.

Knowledge Consolidation and Transfer

• *Publications and Documents*

- Decontamination and Dismantling of Radioactive Concrete Structures – A Report of the NEA CPD - English, 142 pages, NEA/RWM/R(2011)1
- Remote Handling Techniques in Decommissioning – A Report of the NEA CPD – English, 106 pages, NEA/RWM/R(2011)2
- ***International Structure for Decommissioning Costing (ISDC) - a technical report prepared by the WPDD*** – English, 200 pages. OECD 2012, ISBN 978-92-64-99173-6.
- Management of Large Components from Decommissioning - a technical report prepared by the WPDD, in print
- A Map of International Activities on Decommissioning and Dismantling; NEA/RWM/WPDD(2012)3; OECD, Paris, 2012 [unclassified]

• *Outreach, Presentation and Stocktaking*

- The NEA Co-operative Programme on Decommissioning - Twenty-five Years of Progress – The Last Five Years : 2006 through 2010 – English, 157 pages, NEA/RWM/R(2011)3
- ICEM-2011. The 14th International Conference on Environmental Remediation and Radioactive Waste Management (ICEM-2011) took place in Reims on 25-29 September, 2011. A special session was held on lessons learned from 25 years of decommissioning work at the OECD/NEA.

MAJOR AREAS OF ACTIVITY FORESEEN IN 2012 – 2013

Activities and Projects

• *Report on Cost Control Survey in Decommissioning and Decommissioning Cost Control Guide*

Within a Decommissioning Cost Estimating Group (DCEG) activities a Report on Cost Control Survey in Decommissioning is being commented, which aimed to identify how cost and schedule controls were being used in decommissioning projects and whether such controls were successfully improving project performance in terms of budget and schedule limitations. Outputs of the survey will be reflected in the Decommissioning Cost Control Guide, which will provide a structured system for implementing cost and schedule controls for managing decommissioning projects, and will address training programs for implementation, establishing Baseline Cost and Schedules, actual project cost and schedule feedback, performance indicators, and change control.

• *Trends in R&D for Decommissioning*

A Task Group on R&D Needs for Decommissioning was established following the WPDD-10 annual meeting in November 2009. This group is undertaking a study aimed at defining the elements of a decommissioning project which have the greatest potential for future improvement through R&D and/or innovation and to outline associated R&D projects which should be considered for

future funding by governments or by the decommissioning industry. A topical session was held at WPDD-11 meeting in Washington DC. The group's work progressed producing basic elements of the final study. A final report will be issued and group's work completed in 2012.

- **Radiological Characterization and Decommissioning**

After formal establishing of the task group, issue a questionnaire and preliminary evaluation of its responses, and organising a topical session at the WPDD-12 in 2011, the group will organise a Workshop on Radiological Characterisation for Decommissioning at Studsvik (Sweden), and continue to work on the draft report. Synergies with the R&D Task Group will be sought, as well as with the CPD Task Group on Site Remediation.

- **The NEA Co-operative Programme for the Exchange of Scientific and Technical Information Concerning Nuclear Installation Decommissioning Projects (CPD)**

Meetings of the Technical Advisory Group (TAG), through which the programme's technical and scientific exchanges take place, are scheduled to take place in 2012 in Spain (ENRESA) and in the USA.

- **WPDD-13**

The 13th annual meeting of the WPDD will be held in November 2012. The Topical Session will address the issue of Site Remediation.

Knowledge Consolidation and Transfer

- ***Publications Expected in 2012***

- Report on Cost Control Survey in Decommissioning - a technical report prepared by the WPDD
- Decommissioning Cost Control Guide - a technical report prepared by the WPDD