

CENTER FOR NUCLEAR WASTE REGULATORY ANALYSES

TRIP REPORT

SUBJECT: (1) Meeting at the Offices of the Institut de Radioprotection et de Sûreté Nucléaire (IRSN) and visit to the location of the Agence Nationale pour la gestion des Déchets Radioactifs (ANDRA) Underground Laboratory at Bure in Eastern France

(2) Attendance at the 5th Meeting of Integration Group for the Safety Case (IGSC) of the Organisation for Economic Co-Operation and Development (OECD) Nuclear Energy Agency (NEA)
(20.06002.01.111.401)

DATE/PLACE: October 13–17, 2003, Paris, France

AUTHOR: Budhi Sagar

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TRIP REPORT

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(2) Attendance at the 5th Meeting of Integration Group for the Safety Case (IGSC) of the Organization for Economic Co-Operation and Development (OECD) Nuclear Energy Agency (NEA)

Dates of Travel and Countries/Organizations Visited

October 11–17, 2003, NEA offices in Paris, France. Prior to the IGSC meeting, the traveler visited the IRSN and visited the ANDRA Underground Laboratory at Bure in Eastern France.

Author, Title, and Agency Affiliation

Dr. Budhi Sagar, Technical Director, Center for Nuclear Waste Regulatory Analyses (CNWRA), San Antonio, Texas.

Sensitivity

Not Applicable

Background/Purpose

The IGSC is one of the three groups created by NEA Radioactive Waste Management Committee (RWMC); the other two being the Forum on Stakeholder Confidence (FSC) and the Working Party on Management of Materials from Decommissioning and Dismantling (WPDD). The U.S. Nuclear Regulatory Commission (NRC) has been involved in the RWMC and the three groups it established from their very beginning because of the direct relevance of the subject matter to the NRC mission. The purpose of this particular trip was to attend the 5th plenary meeting of the IGSC.

Prior to the IGSC meeting, I met with the staff of IRSN and also visited one of the potential sites for a French high-level repository where an underground research facility is under construction.

Abstract: Summary of Pertinent Points/Issues

During the meeting at the IRSN, its staff presented the ongoing research and technical assistance program in support of the French regulatory authority, Direction Générale de la Sûreté Nucléaire et de la Radioprotection (DGSNR), with respect to geologic repositories. By law in force at this time, the French implementer, ANDRA, is required to have at least two underground laboratories in two different parts of France before the government will make a decision on going ahead with detailed site characterization at one of the sites. The first

underground research facility is being built about 8 km from the small town (population 80) of Bure about 300 km east of Paris on the margin of the Paris basin and close to the Champagne district. Two shafts are being sunk, which will eventually penetrate the proposed repository horizon Callovo-Oxfordian, a stiff clay layer about 130 m thick at 500 m depth. Due to a fatal accident, shaft sinking was stopped for one year and so far has proceeded to 300 m. ANDRA is expected to update its "2001 Clay Formation Dossier" in 2005 and the French parliament is expected to debate and propose a path forward in 2006.

Mr. Antoine Claisse of IRSN, who spent a year at the CNWRA as part of a IRSN/CNWRA staff exchange, presented his detailed technical report. A hard copy of the report was obtained for review. The IRSN desire is to publish the report as a joint IRSN/CNWRA document. Because the report is focused on simulations of Yucca Mountain relative to alternate hydrogeological conceptual models, this report will be submitted to the NRC for their review and approval before any publication.

The French authority, DGSNR, has not yet promulgated its regulations. A debate is ongoing on how "risk-informed" these regulations should be.

The mechanics of continuing the staff exchange between the IRSN and CNWRA will be discussed by its Director General during his visit to the NRC.

The following are the points of interest from the IGSC meeting.

- The IGSC has a draft of its Safety Case Brochure ready for review. An earlier draft was reviewed at the CNWRA. The NRC staff should take a quick look at this last draft before it goes final. All comments must reach the NEA Secretariat by the end of November.
- The IGSC endorsed a proposal to hold a workshop on "Management of Uncertainty in Safety Case: Role of Risk" in Stockholm from February 2-4, 2004. The workshop is hosted by the Swedish Radiation Protection Institute (SSI). Abstracts are to be submitted by November 5, 2003. The traveler has been invited to present a paper and chair a working group on "Regulatory Requirements and Review of Uncertainty and Risk." In addition to a CNWRA staff, an NRC staff member consider attending the workshop and present the NRC work related to risk-informed regulatory review.
- The 2nd NEA-Engineered Barriers System Workshop was endorsed to be held in Las Vegas, Nevada, in September 2004. This workshop will focus on processes affecting the design and performance of engineered barriers, both the container and backfill. Dr. Vijay Jain of the CNWRA attended the first workshop held in Turku, Finland, August 2003. The NRC and CNWRA should consider participation in the 2nd workshop preferably with a paper that will provide regulatory perspective.

- The Sorption Project will finalize its report in February 2004. The NRC Office of Research and the CNWRA (as a part of technical assistance to the Division of Waste Management) participated actively in this project, which focused on validating sorption models for use in performance assessment. The NRC and CNWRA staff should plan to review the final report.

In other actions, the IGSC decided to work towards updating its 1992 document, "Geological Disposal of Radioactive Waste: Review of Developments in the Last Decade." The objective would be to bring the document up to the state-of-the-art to 2004 and publish it in 2005.

The next IGSC meeting will be held in Paris from November 3–5, 2004. The subject of the topical session for the next meeting will be on "Monitoring, including Performance Confirmation."

Discussion

The agenda of the IGSC meeting and list of decisions and main outcomes are attached. Significant discussions are summarized below.

REGULAR BUSINESS

Peter Flavelle (Canadian Nuclear Safety Commission) summarized the main accomplishments of the NEA group "Forum for Stakeholder Confidence (FSC)." In 2003, the FSC produced several documents of interest: (i) Outreach Activities in NEA Member Countries, (ii) Analysis of Lessons Learnt by Regulators, (iii) Review of Stepwise Decision Making, and Overall Lessons Learnt. Through its meetings and workshops, the FSC has developed recommendations for public outreach activities: (i) respect the role of each actor, including politicians; it is not up to engineers and researchers to decide; (ii) sufficient resources should be allocated to outreach consultation which should discuss "real" alternatives; and (iii) the stakeholders should be involved early and often and they should be provided real possibility to influence key decisions. Proceedings of a topical session held in May 2003 on Stakeholder Involvement Tools: Criteria for Selection and Evaluation should become available in 2004. The FSC is initiating a new project on "Media Interactions."

Federico Mompean (NEA) provided a status report on the Thermochemical Database Project (TDB). Fifteen organizations participated in Phase II of the TDB. The update on inorganic U, Am, Tc, Np, and Pu became available on October 19, 2003; data on inorganic Se is expected to be available in the first half of 2004, and on inorganic Zr and organic ligands with U, Np, Pu, Am, Tc, Se, Ni, and Zr in the second half of 2004. A 4-year, third-phase of TDB will be initiated in February 2003 with the same objectives and same organization as Phase II. This time, the elements under consideration will be Th, Fe, Mo, and Sn. Some interest was expressed in obtaining new data by conducting experiments. Abe van Luik invited expressions of interest in setting up joint experiments since the US Department of Energy was actively considering funding such work.

The objective of the Sorption Project is to demonstrate the applicability of different chemical thermodynamic modeling approaches to support the selection of sorption parameters for

workshops is expected to be a document on "how EBS design is developed, justified, and implemented in the context of the safety case." The first workshop held in Turku in Finland was focused on design requirements and constraints. Dr. Vijay Jain from the CNWRA attended this workshop and details of this workshop can be obtained from him. The second workshop to be hosted by Sandia National Laboratories and the DOE will include three topics: (i) thermal management and analysis, (ii) alteration of non-metallic barriers and evolution of solution chemistry, and (iii) radionuclide release and transport. Workshop 3 will focus on Role of Performance Assessment and Process Models, while the fourth and last workshop will have Design Confirmation and Demonstration as its topic.

Klaus-Jürgen Röhlig (GRS—Germany) provided a summary of the first workshop organized by the AMIGO group. This is a follow on project to the completed GEOTRAP project. The objectives of AMIGO include activities towards understanding and enhancing the state-of-the-art for representation of the geosphere in the safety case. Participants in the project are from academic, industrial (e.g., oil and gas), regulatory, and implementer organizations. The first workshop was hosted by Nagra, HSK, and the University of Bern and held at Mont Terri, Switzerland on June 6, 2003. Session 1 was devoted to the safety case for the Opalinus clay, Session 2 comprised of keynote presentations by experts from outside of the waste program, and Session 3 included presentations from various high-level waste programs. There was no participation from the USA; there was some complaints about the DOE disapproving the attendance of one of its staff at the last minute. The workshop emphasized the role of interdisciplinary teams and use of innovative technology in site characterization and analyses such as 3-D seismic methods, and Geographic Information System (GIS). Workshop proceedings will be available by end of 2003. The second AMIGO workshop will be hosted by Ontario Power in Canada and will be held in 2005.

Abe van Luik (DOE—USA) briefed the group on the status of the IGSC Brochure on Safety Case. This brochure discusses in simple language the various elements that constitute the documentation of a safety case and describe the general considerations that apply to presentation of a safety case. A draft of the brochure has been provided to IGSC members for review; comments are due to the NEA secretariate by the end of November 2003. The revised document will be presented to the RWMC for its approval in their March 2004 meeting.

Phil Metcalf (IAEA) presented the main points of the latest draft of the IAEA—WASSC Safety Standards for Geologic Disposal. Various drafts of this standard have been reviewed at the NRC and the CNWRA.

Björn Dverstorp (SSI—Sweden) explained the proposal on holding a workshop on "Management of Uncertainty in Safety Cases: The Role of Risk." The objective of the workshop is to achieve a common understanding of alternative approaches to characterization and evaluation of uncertainties and risk. Representatives of both the regulatory and implementing organizations are expected to participate. Approaches for risk-informed decision making, technical approaches for risk characterization, and potential for further methodology development will be the focus of the workshop. SSI will host the workshop in Stockholm on February 2–4, 2004.

Jan Marivoet (CEN/SCK—Belgium) discussed the ongoing NEA work on Impacts of Advanced Nuclear Fuel Cycle Options on waste management policies. The scope of this work is to analyze a range of future fuel cycle options from the perspective of their impact on waste management and on repository specifications. An expert group with members belonging to 11 countries, including a member from the USA, will conduct the study. The expert group will prepare material flow sheets (mass, composition, radiotoxicity) for 9 fuel cycles, estimate amount and nature of wastes, and study economic factors. A report will be published by the end of 2004. Results of the study will be presented at the 8th Partitioning and Transmutation Information Exchange Meeting to be held in Las Vegas from November 9–11, 2004.

V. Nys (AVN-Belgium) discussed the IAEA "Application of Safety Assessment Methodology for Near Surface Waste Disposal Facilities ASAM)" project. This project has a regulatory review working group that is developing guidance for regulatory reviewers. Some features of this regulatory guidance are very similar to the review procedures in the Yucca Mountain Review Plan.

COUNTRY REPORTS

Belgium: In early 2003, the Belgian government enacted a law that aims at gradually phasing out the use of nuclear energy after 2015. According to this law, the existing nuclear power plants will stop operation after 40 years of production (i.e., 2015 for the first plant that went into service in 1974 and 2025 for the last one). Two clay host rocks are being studied for a repository: the Boom clay at Mol/Dessel and Leper clay at Doel. Based on the SAFIR-2 report and its peer review, NIRAS-ONDRAF, the agency responsible for construction of a repository, is developing its 2004–2008 R&D program. It has also initiated an intensive interaction with the regulator, the Federal Agency for Nuclear Control (FANC) and its technical control body, AVN to obtain feed back with respect to its proposed R&D work.

Canada: According to the Nuclear Fuel Waste Act that was passed in June 2002, the waste generators have established a Nuclear Waste Management Organization (NWMO). By November 15, 2005, the NWMO must submit to the government a study setting out its proposed approach for long-term management of nuclear waste. At least three alternatives must be considered in the study: geologic disposal in the Canadian Shield, storage at nuclear reactors, and centralized surface storage. A decision by the government with respect to NWMO recommendation is expected in 2006. The AECL is currently developing decommissioning plans for its 20 year old underground research laboratory (URL) at Pinawa in the Canadian Shield. The Canadian Nuclear Safety Commission (CNSC) has revised its Draft Regulatory Guide P-290, Managing Radioactive Waste and will submit it for approval to the seven member full Commission in November 2003. The CNSC has also produced the first Canadian National Report for the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management.

Czech Republic: The Radioactive Waste Authority (RAWRA) initiated surface-based characterization activities on six sites in September 2003. In addition, RAWRA is conducting an optimization study to develop criteria for site selection based on transport considerations, constructability, and disposal safety.

Finland: Excavation of an underground rock characterization facility called ONKALO is scheduled to begin in the summer of 2004 at the Olkiluoto site. This facility is expected to have 8500 m of tunnel at a depth of 420 m. Posiva aims to submit an application for the construction permit around 2010 and an application for operation around 2020. The operational life period of the repository is estimated to be 90 years. Regulatory guide YVL 8.5 on operational safety of encapsulation and disposal facilities was published in early 2003. The Finnish regulator STUK completed its review of Posiva's alternative designs for the encapsulation facilities.

France: A regulatory body for nuclear safety and radiation protection, the Direction Générale de la Sûreté Nucléaire et de la Radioprotection (DGSNR) has been created. This body reports to the Ministry of Industry and Environment for nuclear issues and to the Ministry of Health for radiation issues. The DGSNR has authority over all civil nuclear activities including transportation. The Institute for Radiological Protection and Nuclear Safety (IRSN) was created by a decree on February 13, 2002. Its role is to provide expert advice and conduct research. The construction of an underground test facility in a clay formation at 500 m near Bure in eastern France was delayed a year due to a fatal mining accident in May 2002 but construction has resumed now. ANDRA is looking for a suitable second site in granite for constructing similar facilities. In 2006, based on global evaluation report of the two sites, the government may propose a new law to guide further work.

Germany: Abandoning nuclear energy is an essential part in the reorientation of the German energy policy. According to an agreement between the government and the utilities, the residual electricity volumes to be produced by 19 nuclear power plants currently in operation cannot exceed 2,623.30 TWh, which amounts to an average life time of 32 years for the reactors. Reprocessing of spent fuel will end as soon as possible but at least by 2005, interim storage facilities will be built at reactor sites to minimize transportation, and the underground exploration of the salt dome at Gorleben will be interrupted for at least three years. The federal government would like to construct one facility for all types of radioactive wastes by 2030.

Hungary: According to Act No. CXVI of 1996, the government has created an organization, the Public Agency for Radioactive Waste Management (PURAM) for disposal of HLW; spent fuel is not considered waste under the Hungarian law. The Hungarian Atomic Energy Authority (HAEA) will manage the financing of all work. The Boda Claystone site was determined to have a leading position after screening of sites for a high-level waste repository was completed in 2003.

Japan: The Nuclear Waste Management Organization (NUMO) was established as the implementing organization on October 18, 2000. NUMO will be responsible for site selection, demonstration of disposal technology, development of a license application, construction, operation, and closure of the repository. In December 2002, NUMO sent 3239 information packages to municipalities to solicit volunteer preliminary investigation areas (PIA). No

response to this solicitation has been received so far. The Japan Nuclear Fuel Cycle Development Institute (JNC) continues to conduct research and development activities including experiments at two underground facilities at Mizunami (crystalline rock) and Horonobe (sedimentary rock). Basic studies are being conducted at experimental facilities at Tokai.

Italy: Italy has closed down its four nuclear power stations but it still has to dispose of its legacy wastes (about 200 cubic meters of HLW and spent fuel). The policy of the Italian government is to decommission all nuclear power stations and all other nuclear installations, including experimental facilities. The property of all nuclear power stations has already been transferred to a new government owned company called SOGIN. Within a year, the parliament is expected to issue a decree detailing the management of HLW.

Korea: In Korea, 17 power units are currently in operation and 4 are under construction. Nuclear power represents 28 percent of the nation's electric power production. A centralized spent fuel facility will be built by 2016. Since 1997, the Korean Atomic Energy Research Institute (KAERI) has been conducting a 10-year, 3-phase research program to develop a repository concept suited to the Korean conditions. A repository concept will be recommended to the government in 2007. A peer review of KAERI research was organized by the IAEA; Dr. Sagar (CNWRA) was a member of this review team.

Spain: The first Spanish national report to meet the requirements of article 32 of the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management was published in May 2003. Decisions with respect to management of spent fuel have been postponed to 2010. A non-site specific global performance assessment study for the clay medium will be completed in early 2004 and a similar previous study on granite will be revised by the end of 2003. ENRESA is preparing a research and development plan to cover the period from 2004–2008, which will include its plan to participate in the 6th R&D framework of the European Union.

Sweden: Site investigations are continuing at the Östhammar and Öskarshamn sites. The SKI performed field audits of SKB hydrogeology, geochemistry, and geology site characterization work at Östhammar (Forsmark) site in April–June 2003. The SSB plans to produce preliminary safety evaluations for both sites in 2004–2005. A license application for construction authorization is planned to be submitted in 2008. In 2006, the SKB plans to submit a license application to start building an encapsulation plant so that such a plant will be available when the repository is able to receive waste. Both applications will contain an evaluation of long-term safety, which are being called SR-Site and SR-Can. The SSI plans to finalize a draft guidance document on its waste disposal regulations in 2004.

Switzerland: The Swiss Parliament passed a new law by which the veto power accorded the municipalities with respect to location of a repository has been taken away. According to the new law, the federal government will have the power to make the final decision on the location of a repository. Also, two referenda related to moratorium on and phasing out of nuclear power were defeated by a significant majority. A license for operation of storage facilities of HLW was issued to utility-owned ZWILAG in 2000, which is now functioning. This has relaxed the time

pressure for construction of a repository. NAGRA had abandoned its plans for the Wellenberg site after a negative vote from the municipality on September 22, 2002. Nagra completed its report on a disposal feasibility in Opalinus clay and submitted it to the federal government on December 20, 2002, for review. A decision from the Federal Council is expected by 2006. In the mean time, disposal within the framework of a multinational project will continue to be an option.

United Kingdom: A Committee on Radioactive Waste Management (CoRWM) is being setup to review options for waste management and recommend a strategy to the UK government by the end of 2005. A draft nuclear sites bill, which provides for the establishment of a new Nuclear Decommissioning Authority, was published on 24th June 2003. The UK government is also considering making NIREX independent of the industry and bring it under its control. Currently, the environmental agency, which is responsible for regulating the disposal of nuclear waste, is reviewing British Nuclear Fuel Limited's post-closure safety case for a low level waste facility at Drigg.

USA—Yucca Mountain: The DOE is preparing to submit a license application in December 2004. To prepare for this major action, the DOE Office of Civilian Radioactive Waste Management has undergone a major reorganization in which an Office of Repository Development has been created in Las Vegas while an Office of Strategy and Program Development has been created in Washington, DC. A strategy document for safety assessment that will be incorporated in the license application has been developed. The NRC has published the final draft of its Yucca Mountain Review Plan, which provides guidance to its staff regarding review of any license application. The DOE and the NRC are engaged in pre-licensing consultations to resolve the main technical issues.

TOPICAL SESSION

The subject of the topical session was "Observations regarding the safety case in recent peer reviews on safety assessment studies." The objective of the session was to assess the usefulness of the international peer reviews organized by NEA and IAEA when requested by an implementor or a regulator. Members of the international review team (IRT) are not paid for their time but all other incidental expenses such as for travel and the production of the review report are paid for by the organization requesting the review.

Arnaud Grevoz (Andra—France) spoke about the lessons learned from the peer review of its Dossier 2001 Argile report. The Dossier 2001 report documents the feasibility of clay medium (taking data from the Bure underground research laboratory) for disposal of long-lived waste. An updated version of this report (to be called Dossier 2005) and another similar report on the granite medium will provide information to the French Parliament for its debate and decision about the next step in the national program in 2006. The IRT recommended that sufficient information should be included in the next update of Dossier 2001 so that it can stand alone and that it should be tailored to the needs of different audiences. The IRT also commented that the new methodology for scenario analysis (called the analysis and modeling of system evolution or

APSS and qualitative safety assessment or AQS) needs further development and comparison with the established features, events, and processes (FEP) methodology.

Abe van Luik (DOE—USA) said that the DOE has accepted the recommendations of the peer review conducted in 2000. A document titled "Yucca Mountain Story" is in preparation for broad distribution to scientific/educated lay reader. This document is being written at the "Scientific American" level. Following other recommendations, the TSPA—License Application will include explicit statements about confidence in analyses and models. He said that the detailed guidance provided in the NRC Yucca Mountain Review Plan was helpful in guiding the development of the license application. The term "safety case" favored by the NEA, however will not be used much in the License Application as this term is not used in the applicable regulation (i.e., 10 CFR Part 63).

P. De Preter (NIRAS-ONDRAF—Belgium) discussed the impacts of the NEA peer review of SAFIR 2 on future programs. The peer review report was submitted to the responsible minister of the Belgian government in August 2003, an official reaction is awaited. The review focused on long-term safety assessment and R&D program to address remaining uncertainties. The review pointed out that while Boom clay is the main barrier, NIRAS-ONDRAF should analyze the engineered barriers also. The IRT also suggested that a balance needs to be struck between realism and capability to support safety through robust (e.g., conservative) models. Also, some of the novel methods such as the use of safety function and complementary safety indicators need to be explained better. The IRT recommended that a regulatory framework should be developed in which context the safety could be judged. The next major milestone is the development of an environmental impact statement in 2008.

Jürg Schneider (Nagra—Switzerland) provided an overview of Project Entsorgungsnachweis (disposal feasibility). The project report has been submitted to the Swiss regulator (HSK), the federal government, and the German-Swiss Commission (the proposed site is located in Zürcher Weinland, close to the German-Swiss border). The NEA has been requested to conduct a peer review. The government decision on the next step is expected in late 2005. The safety assessment concludes that there is no obviously better location for the repository than in Opalinus clay and Nagra has proposed to the federal government that future R&D efforts focus on this site.

Allan Hedin (SKB—Sweden) explained the features of the SR-CAN which is a safety assessment that would be included in SKB's license application for construction of an encapsulation plant. This license application will be submitted in 2006, while an application for the construction of a repository is anticipated to be submitted in 2008. Initial site investigations at Östhammar and Oskarshamn will be completed in 2005 and detailed investigations on one of the sites up to 2008. The SR-CAN project will assess the safety of the KBS-3 design concept as applied to the above mentioned sites. Complete safety assessment will be conducted using all the site information available up to 2005. An interim report will be produced in 2004 to facilitate a dialogue with the SSI and SKB.

Alan Hooper (Nirex—UK) summarized the discussion to conclude that peer reviews generally helped the programs to guide further developments and to provide input to decision makers. The technical comments are generally related to realism in the safety case, appropriateness of formalism used to deal with uncertainties, capabilities to handle coupled processes and appropriate documentation.

The next IGSC meeting will be held at the NEA from November 3–5, 2004. The topical session in this meeting will deal with monitoring during the preclosure period.

Pending Actions/Planned Next Steps for NRC

No policy issues for Commissioner's attention were identified during the trip. There are, however, topics that need management attention. These are:

- whether one or more NRC staff should review the Safety Case Brochure. A copy was transmitted to NRC (Janet Schlueter and Tim McCartin) via email. Comments are due to NEA by the end of November.
- whether the report by the sorption forum to be available in February 2004 should be reviewed (at a minimum, CNWRA staff will review, as they are participating in the modeling exercise).
- whether NRC and CNWRA staff should participate in the following workshops:
 - AMIGO 2nd workshop (subject to be decided) in Canada in 2005, hosted by Ontario Power who will have an opportunity to present the Canadian safety case, if any (recommend participation).
 - EBS workshop on Role of Performance Assessment and Process Models in Las Vegas in September 2004; participation by a CNWRA staff member is planned in fiscal year 2004 CNWRA Operations Plans.
 - The workshop on "Management of Uncertainty in Safety Case: The Role of Risk" on February 2–4, 2004. Dr. Sagar agreed to help the organizers develop the program for this workshop. The organizers have requested a presentation on the regulatory perspective on risk and have asked Sagar to chair a session. Recommend that a NRC staff member consider participation.

Points for Commission Consideration/Items of Interest

No issues for Commission consideration were identified during this trip.

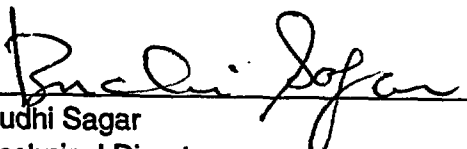
"On the Margins"

None.

Attachments

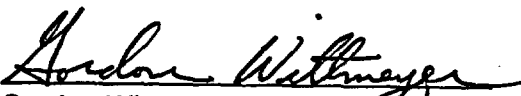
A copy of the agenda and list of decisions and main outcomes are attached.

SIGNATURES:



Budhi Sagar
Technical Director

11-4-2003
Date

CONCURRENCE:


Gordon Wittmeyer, Manager
Performance Assessment

11/4/2003
Date


Wesley Patrick
President

11/4/2003
Date

**NUCLEAR ENERGY AGENCY
RADIOACTIVE WASTE MANAGEMENT COMMITTEE**

Integration Group for the Safety Case (IGSC)

Final Agenda for the 5th Meeting of the IGSC

Paris, 15 - 17 October

Cancelled and replaced the provisional agenda of 23/09/2003, NEA/RWM/IGSC(2003)10.

JT00151148

Document complet disponible sur OLIS dans son format d'origine
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The fifth meeting of the Integration Group for the Safety Case (IGSC) will be held on:

15-17 October 2003
in Meeting Room 3
OECD
Chateau de la Muette
2, rue André-Pascal
75016 Paris

The meeting will be chaired by Mr. Abe Van Luik and it will start at 9 a.m. on the first day. It is scheduled to end at 12:00 on the last day.

English will be the working language.

The contact person, for arrangements and practical questions, is:

Sheila O'Sullivan
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Delegates participating are advised that the security arrangements in force at the building include the obligation to present an identity document bearing a photograph. This document will be requested at the time of issuing Delegates' cards for the meeting on first entry to the building.

REMARK:

In the first column of the agenda, the following letters indicate the status of each Item:

"I" signifies: Information to the IGSC, no decision to be achieved

"D" signifies: Decisions to be achieved at the end of the IGSC meeting

"R" signifies: Recommendations to be made by the IGSC

DAY 1 - Wednesday 15 October 2003
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9:00 1 Opening (20 min)

1.1 Welcome
Introduction of new delegates
A. van Luik, Secretariat

D 1.2. Adoption of the Agenda **NEA/RWM/IGSC(2003)10**
Objectives of the meeting
A. van Luik, Secretariat

D 1.3 Approval of the Summary Record of the **NEA/RWM/IGSC(2003)1**
Fourth Meeting of the IGSC

9:20 2 Reports on NEA and RWMC Activities

R/D 2.1 NEA groups (NDC, WPDD and FSC) (45 min)
Each group will give a 15min -presentation on:
1. Emphasising points of interest to the IGSC
2. The potential collaboration with the IGSC: on which issue?
NDC: J. Marivoet **NDC: NEA/NDC(2003)5**
<http://www.nea.fr/html/pt/iempt8/index.html>
FSC: P. Flavelle **FSC: NEA/RWM/FSC(2003)4**
(also available as NEA publication)
NEA/RWM/FSC(2003)2/REV1
WPDD: C. Pescatore

10:05 2.2 Peer Reviews (15 min) **ANDRA 2001: NEA report (**
I Quick updates, detailed lessons learnt under item 4 **French and English versions)**
ANDRA 2001: Feedbacks **available on NEA Website**
OPALINUS Clay: Status **Opalinus Clay: on going**
Organization's Representatives

10:20 Coffee break

10:50	3	Status Report on Co-operations Projects	
D			
D	3.1	FEP Data Base (5min) 1. Status and how to proceed for its updating? <i>T. Sumerling</i>	
I & R	3.2	TDB Project (15 Min) Status of Phase II and III <i>F. Mompean</i>	Room Document
D	3.3	Sorption Project (10min) Results of the benchmarking. Status of the report <i>To be nominated</i>	OVHs
R	3.4	Clay Club (30min) Report from the 13th meeting FEPCAT and Catalogue (D): how to organise feedback regarding the utilisation of these databases by PA <i>P. Lalieux</i>	FEPCAT: report being published, NEA/RWM/CLAYCLUB(2003)3
12:00		Lunch	
13:30	4	Topical Session	
		<ul style="list-style-type: none"> • Observations regarding the safety case in recent Peer Reviews on Safety Assessment Studies. Final Safety Case Brochure discussion and approval. <i>Questions to be answered:</i> <ul style="list-style-type: none"> - Impact of the peer review in terms of confirming the need to focus on some scientific items, of documentation, ... - Emerging issues from the recent safety cases in terms of improving the integration of sciences in a safety case - Emerging issues in the view of making a "safety case" as defined in the brochure - Main comments on the brochure 	
		Introduction: Objective of the TS, Introductory statement Speakers will have 25 minutes including 5 minutes for discussion after each presentation <i>Chairman: Abe van Luik</i> <i>Rapporteur: Alan Hooper</i>	
13:40	4.1	DOE-YUCCA MOUNTAIN; TSPA <i>A. van Luik</i>	

	4.2	ONDRAF: SAFIR 2 Report and future steps <i>P. de Preter</i>	
	4.3	ANDRA: Dossier 2001 Argile and future steps <i>A. Grevoz</i>	
15:20		<i>Coffee break</i>	
15:40	4.4	SKB: Planning report for safety assessment <i>A. Hedin</i>	Technical report TR-03-08
	4.5	Nagra: Opalinus Clay safety report <i>J. Schneider</i>	Technical report NTB 02-05
	4.6	ISAM/ASAM project <i>V. Nyes</i>	
I	4.7	IAEN/NEA collaboration on safety requirements (20 min) 20 mn presentation on How to support RWMC e.g. common subgroup (safety ad-hoc group + RWMC bureau?) <i>Ph. Metcalf</i>	Draft
R	4.8	Safety case brochure (20min) Status, organization of the review schedule <i>Abe van Luik</i>	NEA/RWM/IGSC(2003)11/PROV
	4.9	Roundup Session Lessons learnt from the Topical Session Discussion and Messages, including follow on, to be delivered to the RWMC <i>Abe van Luik, Alan Hooper</i>	
17:20		<i>Adjourn</i>	

DAY 2 – Thursday 16 October 2003

9.00	4	Topical Session (continued) Conclusions <i>Abe van Luik /Alan Hooper</i>	
9:00	5	Reports from Countries and International Organisations on matters of interest to the IGSC (1st Presentation) I One report per country. Five minutes each. Oral presentations supported by a written text to be made available to all IGSC participants <i>National Representatives</i>	Individual countries' texts
10:30		Coffee Break	
10:50	6	Status Reports on IGSC Technical Activities	
I & R	6.1	Geosphere Stability (30 min) Programme of the workshop, key issues; status of registrations <i>P. Lalieux</i>	NEA/RWM/IGSC(2003)3
I	6.2	EBS series of workshops (40 min) 1. Key outcomes of the TURKU Workshop 2. Foundation document and next workshop; need for approval <i>Hiroyuki Umeki / Alan Hooper</i>	EC-NEA State-of-the art report EC-NEA proceedings of the Oxford Workshop of 2002 NEA/RWM/IGSC(2003)5 (outcomes of the Turku Workshop)
I/R	6.3	AMIGO (30 min) 1. Key outcomes of the 1 st Workshop 2. Next workshop <i>K. Roehlig</i>	NEA/RWM/IGSC(2003)6/PROV
12:30		Lunch	

14:30	7	Status Reports on IGSC Core Activities	
D	7.1	Handling of Time Scales (30min) 1. Brochure based on the proceedings of the workshop for a wider audience agreement? Usefulness of this type of brochure in the perspective of the openness of the IGSC to the public? A Need for other Wk. or conferences? 2. Agreement on the programme of work: relevance of the issues, support from the organisations? Usefulness of a questionnaire /Answers ?same format as IPAG <i>P. de Preter</i>	1. NEA/RWM/IGSC(2003)9 2. OVHs
R	7.2	Management of uncertainty: The role of risk (30min) 1. Remind of the provisional programme: relevance of the issues, a need for some clarification? 2. Status of registrations? Need for remind? 3. Working group/ key issues <i>B. Dverstorp</i>	NEA/RWM/IGSC(2003)12/PROV
15:30		Coffee break	
16:00	2	The NEA and the RWM (continued) Progress to date <i>H. Riotte</i>	NEA/RWM(2003)13 and NEA/RWM(2003)6 NEA/RWM/RF(2003)2
	5	Country Reports (continued)	
17:30		Adjourn	

DAY 3 - Friday 17 October 2003

9:00	8	IGSC Foundation and programme of work (40min) a) Emerging issues vis-à-vis topical session b) Lessons learnt from the past three years. Foundation/programme of work c) Updating of the NEA document "Geological Disposal of radioactive waste: Review of development in the past decade <i>Chairman/ NEA Secretariat</i>	NEA/RWM/IGSC (2003)8 NEA/RWM/1999(6)
R& D			
	D	9	Next Meeting: date and location (10min)
		10	IGSC Web site (10min) <i>NEA secretariat</i>
10:00	11	Other business: <ul style="list-style-type: none"> • International conference;8-10 December 2003, Stockholm • Use and Performance of concrete in NPP Fuel Cycles Facilities, Workshop March 2004 	http://www.congrex.se/sth-conf-03/
10:30			<i>Coffee break</i>
11:00	12	Closure of the meeting and synthesis of decisions <i>A. van Luik</i>	
	D		
12:00		Adjourn END OF MEETING	

ITEM	IGSC ACTIONS AT THE 5 th IGSC MEETING	SUPPORT DOCUMENT	SCHEDULE
Item 1. Opening	<input type="checkbox"/> Information	<input type="checkbox"/> NEA/RWM/IGSC (2003)10 <input type="checkbox"/> NEA/RWM(2003)5 <input type="checkbox"/> NEA/RWM(2003)7	<input type="checkbox"/> By early October <input type="checkbox"/> Available on NEA Website/ delegates area <input type="checkbox"/> Available on NEA Website/ delegates area ¹
Item 2.1 RWM activities	<input type="checkbox"/> Information	<input type="checkbox"/> NEA/RWM(2003)13 <input type="checkbox"/> NEA/RWM/RF(2003)2	<input type="checkbox"/> Available on NEA Website/ delegates area <input type="checkbox"/> Available on NEA Website/ delegates area
Item 2.2 Other NEA groups <input type="checkbox"/> NDC expert groups on P&T <input type="checkbox"/> WPDD <input type="checkbox"/> FSC	<input type="checkbox"/> Points of interest to IGSC and recommendations	<input type="checkbox"/> NEA/NDC(2003)5 and http://www.nea.fr/html/pt/iempt8/index.html <input type="checkbox"/> OVHs <input type="checkbox"/> NEA/RW/FSC(2003)4 see also NEA publication	<input type="checkbox"/> Available on Website <input type="checkbox"/> Distributed at the meeting <input type="checkbox"/> http://www.nea.fr/html/pub/webpubs/#rwm
Item 3.1 FEP data base	<input type="checkbox"/> way how to update	<input type="checkbox"/> OVHs	<input type="checkbox"/> At the meeting
Item 3.2 TDB Project	<input type="checkbox"/> Recommendations on phase III	<input type="checkbox"/> OVHs	<input type="checkbox"/> At the meeting
Item 3.3 Sorption project	<input type="checkbox"/> Information	<input type="checkbox"/> OVHs	<input type="checkbox"/> At the meeting
Item 3.4 Clay Club	<input type="checkbox"/> Organisation of the utilisation of FEPCAT	<input type="checkbox"/> OVHs <input type="checkbox"/> NEA/RWM/CLAYCLUB (2003)3	<input type="checkbox"/> At the meeting <input type="checkbox"/> Available on NEA Website/ delegates area
Item 4 Topical session on safety case <input type="checkbox"/> Recent initiatives <input type="checkbox"/> IAEA/NEA safety requirements <input type="checkbox"/> Safety case brochure	<input type="checkbox"/> information <input type="checkbox"/> recommendations <input type="checkbox"/> Approval of the brochure	<input type="checkbox"/> OVHs <input type="checkbox"/> Draft of the report <input type="checkbox"/> NEA/RWM/IGSC(2003)11/PROV	<input type="checkbox"/> After the meeting under requests by members <input type="checkbox"/> Sent by e-mail on 29/04/2003 <input type="checkbox"/> By 11 th October
Item 5: Country reports	<input type="checkbox"/> Information	<input type="checkbox"/> OVHs if needed	<input type="checkbox"/> At the meeting
Item 6.1AMIGO	<input type="checkbox"/> Recommendations for next amigo workshop	<input type="checkbox"/> NEA/RWM/IGSC(2003)3 <input type="checkbox"/> OVHs	<input type="checkbox"/> Available on NEA Website/ delegates area + distributed at the meeting
Item 6.3 EBS project	<input type="checkbox"/> Approval of the foundation document <input type="checkbox"/> Recommendation for next workshop workshop,	<input type="checkbox"/> NEA/RWM/IGSC(2003)13 <input type="checkbox"/> EC-NEA State of the art report <input type="checkbox"/> EC-NEA proceedings-Oxford 2002	<input type="checkbox"/> Available on website <input type="checkbox"/> http://www.nea.fr/html/pub/ret.cgi?div=RWM <input type="checkbox"/> http://www.nea.fr/html/pub/ret.cgi?div=RWM

1. NEA Website/ delegates area: <http://www.nea.fr/documents/2003/rwm/>

ITEM	IGSC ACTIONS AT THE 5 TH IGSC MEETING	SUPPORT DOCUMENT	SCHEDULE
Item 6.4 Geosphere stability	<input type="checkbox"/> Recommendations on the first workshop	<input type="checkbox"/> NEA/RWM/IGSC(2003)6/PROV	<input type="checkbox"/> Available on NEA Website/ delegates area
Item 7.1 Handling of timescales	<input type="checkbox"/> Approval of the brochure <input type="checkbox"/> Recommendations on programme of work	<input type="checkbox"/> NEA/RWM/IGSC(2003)9	<input type="checkbox"/> Available on NEA Website/delegates area
Item 7.2 Management of Uncertainty: the role of risk	<input type="checkbox"/> Recommendations for the workshop	<input type="checkbox"/> NEA/RWM/IGSC(2003)12/PROV	<input type="checkbox"/> Available on NEA Website/ delegates area
Item 8 IGSC foundation document	<input type="checkbox"/> Approval <input type="checkbox"/> Prioritisation of activities- emerging issues	<input type="checkbox"/> NEA/RWM/IGSC (2003)8 <input type="checkbox"/> NEA/RWM(1999)6	<input type="checkbox"/> Available on NEA Website/ delegates area

Outcomes of the 5th IGSC meeting

Planning of actions

OVERVIEW

■ Closed to the end activities:

- TDB phase II most of NEA reports by mid 2004
- Sorption NEA report in 2004
- FEP data base version 2.0 beginning 2004
- Clay club : FEPCAT, catalogue of characteristics publications by beginning 2004
- Safety brochure : publication mid 2004, final comments see further
- Handling of timescales brochure : publication by mid 2004, ask for final agreement see further

■ On going activities:

- AMIGO: waiting for the provisional programme
- EBS : Foundation to be approved
- Geosphere stability : venue of the *Working Group* WK on 9-11 December 2003, Braunschweig
- Management of uncertainty in a safety case : venue of a WK on 2-4 Feb 2004, Sweden ; need for comments on the provisional programme

■ Starting activities:

- Handling of timescales ad-hoc group : programme of work

■ NEA other groups :

- NDC, WPDD, FSC, RWM-RF , except from WPDD,IGSC representatives
- Continue to be aware of these activities , look at reports and inform at the plenary session on key issues of interest
- RWMC-RF : table distributed at the meeting, should members didn't yet fill it out, not to forget to send it by 24 October

IGSC activities –co projects :

■ FEP Date Base:

- contract placed in 2002
- objective is version 2.0 (public and professional) within 3 additional data (SKI encyclopaedia, BENIPA and FEPCAT)
- Comments(a few) from users have been ^{taken} collected into account , most of comments concern the improvement to facilitate the use and the adding of additional data
- version 2 planned to be ready by early 2004
- consensus on valuable product, need an updating regularly when significant new data , progresses are observed
- At each IGSC meeting status of progresses will be checked (CG responsible)
- before inserting FEPCAT a need for a more in depth mapping

■ TDB project :

- Acknowledgement on the high quality assurance of the data.
- IGSC endorsed continuation of the TDB work
- Phase III :
 - 4 years duration from 1 Feb 03
 - In view of prioritisation on studied elements, First year will focus on exploratory phase
 - priority one: exploration by 1 or 2 experts to see the need for going in a depth review =>decision by the MB in Feb 04
 - New participants are still welcome
 - E-mail to Abe for potential co-operative experiments

■ SORPTION Project:

- IGSC was informed on a proposed schedule in view of the finalisation of the report (proposal date Feb 04)
- IGSC waiting for confirmation of this schedule
- A need to fix the deadline for the publication

CLAY CLUB

- I IGSC acknowledged quality of work made by Clay Club
- I FEPCAT : need for feedback by users by mid 04
- I Catalogue : a need for agreement/disagreement on non updated data from UK, US, ^{Canada} CND, I by mid November 03; IGSC agrees that unapproved data will not be published
The secretariat will send the e-mail within the current data
- I IGSC will be informed on the status of the proposal regarding the 'natural tracers' by mid April 04

I 5th IGSC Topical session

- I Outcomes presented by Alan' Hooper, a copy of OVHs ^{overhand} will be sent to IGSC

I Proceedings GD document :

- short synthesis prepared by Alan Hooper, Abe van Luik and Sylvie Voinis , to be reviewed by speakers
- no written contribution needed
- paper version of the OVHs will be included
- Deadline : by the next RWMC meeting of March 04

IGSC TECHNICAL ACTIVITIES :

■ Geosphere stability NEA RWM IGSC 2003-6

- Workshop in Braunschweig on 9-11 December 2003
- most of participants are registered
- *Program Committee* PC/ SG members of AMIGO are welcome e. g OPG which *Ontario Power* will be the host of AMIGO 2
- additional posters are welcome , a place for host organisation presentation

■ AMIGO

- Workshop of June 2003/outcomes
 - success of the workshop
 - benefit of presentations by host organisation, benefit of keynote presentations from other sides
 - national presentations need to *try?* take care of the stage where they are
 - need to encourage posters and to increase duration of WG
 - proceedings under preparation ,
- Amigo 2, 2005, Canada, host OPG:
 - most favour issue on extrapolation of history to the future
 - will not focus on crystalline
 - SC in January , outcomes of geosphere stability WK used as input,
 - The IGSC CG should be aware of the potential overlap

■ NEA-EC EBS :

- Foundation : NEA RWM IGSC 13
 - IGSC full support on the project
 - Comments in particular in view of clarification by End of October
 - Funding of workshops through registrations fees

- | Reporting : extended abstracts , good way to go
- | Updating of the state-of-the-art report by the SG as an end-product of the project after the series

■ TURKU workshop, August 2003, Finland:

- | very helpful practicalities from Posiva Oy : CDROM of all presentations within WG at the end of the workshop
- | novel process used in the Workshop : feedback from participants , to be actioned
- | proceedings under preparation

■ Second workshop , September 2004, Las Vegas , USA:

- | ON Processes issues
- | Programme to be prepared by the PC (members to be nominated by the SG) — Participation?

IGSC CORE ACTIVITIES :

■ Safety case brochure NEA RWM IGSC 2003 11 prov

■ First feedback indicates approval in principle :

- | a lot of progresses made
- | closed to the end
- | consistency to check with other international reports
- | adequate illustrations/examples to find or confirm

■ Actions in view of its publication :

| Comments to be sent to NEA secretariat by end of November:

- Word version will be sent to all IGSC next week
- Comments expected by using track changes
- Final version approved by the ad-hoc group
- Submission then to the RWMC BUR which will decide on follow on by the RMWC

■ Management of uncertainty in safety case :role of the risk :

| 2-4 Feb 04, Stockholm, Sweden, Host SSI, NEA RWM IGSC 2003 12 prov

| By 14 November: Comments to be sent in view of the PC meeting of 18th November, e.g need to stay focused on the safety case when preparing the final programme

| By 5 November: deadline for abstracts

| By 15 December: deadline for registration

■ Handling of timescales :

■ Brochure NEA RWM IGSC 2003 9

- | Objective : summary of the TS Wk to make it more readable
- | Final comments by End of October in view of publication by end of 2003
- | To be sent after that to the RWMC BUR for an approval

| Programme of work:

- | Main objective :
 - | Making a clear link with the safety case
 - | Clarifying the definition of time frames
 - | Analysing if there is a room for improvement
- | A lot of progresses since 1st IPAG => aim is to see which progresses were made including the time scales,
- | Updating of the ' geological disposal of radioactive waste: review of developments in the last decade 'should start by checking what was changed since 1999, it will be a separate task led by the secretariat
- | Final product by end 2005
- | Contact person not directly involved to be nominated by IGSC , it should be IGSC but need confirmation
- | Questionnaire tested by mid 2004 and then presented at the next IGSC / answers expected early 2005 ,
- | by looking to the answers it could be decided to go through two ad hoc groups to address other issues than timescales,

■ IGSC Foundation / programme of work :

Next IGSC :

Paris, First week of November 2004 from 3 to 5 November

Next Topical Session:

Proposal : Monitoring with different levels :
Retrievability from the monitoring point of view ,
Technical aspects, Strategy(e.), expectations from regulators, from stakeholders, Implication on the safety case e,g how it influences

- Good support from IGSC : potential presentations from US (YM, WIPP), France, Belgium, Switzerland....
- EC project network on monitoring should be an input
- Closely link to the EBS project and its outcomes should be an input of the project
- But need to focus more on monitoring side than on how you retrieve.
- A proposal will be sent and ask for suggestions by end 2003