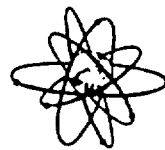


To: Seth Caplan

OCDE
ORGANISATION DE COOPÉRATION ET
DE DÉVELOPPEMENT ÉCONOMIQUES



OECD
ORGANISATION FOR ECONOMIC
CO-OPERATION AND DEVELOPMENT

AGENCE POUR L'ÉNERGIE NUCLÉAIRE/NUCLEAR ENERGY AGENCY

REFERENCE

38, boulevard Suchet
75016 PARIS
Tel 45 24 82 00

EN/S/ASDA

Paris, 19th June 1989

To: ALL MEMBERS OF THE NEA PERFORMANCE ASSESSMENT ADVISORY GROUP (PAAG)

Dear Colleague,

Re: Next PAAG-meeting

I would like to confirm that the next meeting of PAAG will be held on 16th-18th October 1989. This is directly following the Safety Assessment Symposium of which I include a draft programme for your information.

In addition to status reports on ongoing NEA performance assessment related activities the main focus of the next PAAG-meeting will be on reviewing the outcome of the Symposium with the aim of defining the most appropriate scope and content of PAAG activities over the next few years. Further details and an agenda for the meeting will be sent to you in due time.

I wish you a nice summer.

Sincerely,

Claes Thøgerström
Division of Radiation Protection
and Waste Management

Encl. Draft Symposium programme

cc. National Delegations to the OECD

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**SAFETY ASSESSMENT
OF RADIOACTIVE WASTE REPOSITORIES**

Paris, France
9th-13th October 1989

1st DRAFT PRELIMINARY PROGRAMME

A Symposium organised by
The COMMISSION OF EUROPEAN COMMUNITIES
The INTERNATIONAL ATOMIC ENERGY AGENCY
The OECD/NUCLEAR ENERGY AGENCY

in co-operation with the

COMMISSARIAT A L'ENERGIE ATOMIQUE
FRANCE

BACKGROUND

1

Approximately 10 years have passed since the first comprehensive long-term safety assessments of well-defined nuclear waste disposal systems appeared. During this period nuclear waste management programmes have been established in practically all countries using nuclear energy. Large resources are being devoted to repository system development, site investigation studies and safety assessments. Much progress has been made and according to present plans the process of licensing and implementation of high-level waste repositories is expected to start in some countries within about 10 years. For low- and medium-level waste there already exist operating disposal facilities in some countries and new repositories are being constructed in others.

Against this background, and recognising that the long-term safety of the disposal systems is a key-issue, the international organisations with an active programme in this field - CEC, IAEA, and OECD/ NEA - have found it timely to organise jointly an international symposium on "The Safety Assessment of Radioactive Waste Repositories". The aim is to give Member countries an opportunity, based upon current experiences, to summarize the state-of-the-art on this particularly important issue and to discuss possible future developments.

The Symposium will be of interest to those directly involved in carrying out or evaluating safety assessments of radioactive waste repositories and in conducting the associated research activities. It will also be of interest to those using the results as guidance for setting priorities in research programmes and waste disposal projects.

OBJECTIVES AND SCOPE

The Symposium will focus on the approaches and methodologies being used for assessing the post-closure safety of different disposal concepts for various types of radioactive waste, and the results of safety studies in repository development programmes. It will deal with the major elements of the safety assessments, i.e. scenario identification, near- and far-field modelling, dose calculations, sensitivity/uncertainty analysis and the overall integration and interpretation of the results. The Symposium will cover both deterministic and probabilistic modelling. Regulatory aspects and the overall quality assurance aspects of performance assessments, such as verification/validation of codes and models, will also be discussed.

The Symposium will cover near surface, deep geological and seabed disposal. It will not cover the assessment of disposal methods involving the deliberate or early release of radioactive materials into the environment.

STRUCTURE OF THE PROGRAMME

The programme will include six sessions with oral presentations and two sessions with topical discussions. Focus of the programme is on integrated overall assessments and on overviews of major items in safety assessments. Poster sessions are also being organised for submitted papers on specific scientific and technical issues within the scope of the meeting.

Session I is intended to provide a general overview and perspective on the subject of the meeting. It includes only invited papers.

Session II is concerned with overall safety assessments of actual repositories or disposal concepts. Priority has been given to papers dealing with the safety assessments of existing repositories, repositories under construction or well-defined concepts in repository development programmes.

Session III is devoted to the development of scenarios and the assessment of environmental changes and disruptive events. In addition to an invited overview of approaches to scenario analysis for repository safety assessment and presentations concerning long-term evolution of the environment, it also includes papers describing the application and results of scenario development or simulation techniques in several national performance assessment projects.

Session IV is an overview of the major issues in the modelling of release and transport of radionuclides from the waste to man. It consists of invited papers, dealing for example with source term modelling, near-field assessment, modelling of groundwater movements, modelling of nuclide migration and biosphere modelling. The intention is to provide an up to date review of the state of knowledge within such key-areas, to get an indication of possible remaining open issues and to try to summarize the present confidence in our understanding of these key-areas in the perspective of their overall importance for the safety.

Session V is dealing with probabilistic system assessments and uncertainty analysis. An invited paper will present achievements of the NEA Probabilistic System Assessment Codes (PSAC) User Group and another paper will discuss sources of error and uncertainty in the prediction of the geological behaviour of a nuclear

vaste repository. In addition there will be contributed papers on the use and development of probabilistic safety assessment techniques and systematic sensitivity/uncertainty studies.

Session VI will be concerned with the verification and validation of codes and models and the overall quality assurance of performance assessments. Following an invited presentation discussing the implications and problems of model validation for the safety assessment of radioactive waste repositories, results from several international verification and validation exercises (HYDROCOIN, INTRAVAL, CHEMVAL) will be presented. Another paper will discuss the degrees of assessment validation available from natural systems. In addition, there will be contributed papers on the use of quality assurance procedures for scientific codes and within overall assessments.

Two sessions for discussion of particular topics will be arranged during the meeting. The first one will deal with the question "Is it meaningful to make assessments for millions of years?" and the second topical session will deal with the question "In what way can assessments of the safety be based upon human judgement?". These sessions will include presentations of a few submitted papers related to the questions and participants will be encouraged to take active part in the subsequent discussions.

The Closing Session will try to summarize where we stand today in our ability to make reliable assessments of the safety of radioactive waste repositories. It will also be attempted to indicate where focus in future efforts should be in order to improve further the confidence in the results. Finally, the topic of the meeting will be put into a broader perspective through discussion of some aspects of radioactive waste disposal related to the nuclear energy issue as a whole and the overall context of environmental protection in general.

GENERAL INFORMATION

1. ORGANISATION

The Symposium is jointly organised by the OECD Nuclear Energy Agency, the Commission of the European Communities and the International Atomic Energy Agency, in co-operation with the French Commissariat à l'Énergie Atomique.

The Symposium has been planned by a technical Programme Committee consisting of S. Coplan (NRC, United States), J. Levi (CEA, France), C. McCombie/J. Hadermann (MAGRA/PSI, Switzerland), T. Papp (SKB, Sweden), B. Thompson (HMIP, United Kingdom), N. Cadelli (CEC, Brussels), G. Linsley (IAEA, Vienna), J.-P. Olivier and C. Thegerström (NEA, Paris).

2. SECRETARIAT

The addresses of the Secretariats are:

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The Administrative Secretariat of the meeting is provided by:

Mrs. M. Faure
OECD/NEA

Mrs. H. Prosser
IAEA, Conference Service
Section
Tel. 43 (222) 2360-1314

3. WORKING LANGUAGES

Working languages of the meeting will be English and French and, depending upon the need, Russian and Spanish.

Simultaneous interpretation may be provided between all the working languages if six weeks before the meeting it is seen from Participation forms received that these are required.

4. DISTRIBUTION OF DOCUMENTS

This preliminary programme of the Symposium will be sent to the participants before the meeting. The final programme, together with the preprints of papers made available by the Authors will be distributed at the time of registration in Paris.

5. PROCEEDINGS

The proceedings of the Symposium will be published by the OECD Nuclear Energy Agency as soon as possible after the Symposium. They will include all papers presented (provided they are available from the authors in due time for publishing), and a summary of the discussions.

6. LOCAL ARRANGEMENTS

The Symposium will be held at Salle de l'Union Internationale des Chemins de Fer, 14 rue Jean Rey, Paris 15ème, close to the CEA Headquarters and the Eiffel Tower.

Participants are expected to make their own arrangements for accommodation and travel. A list of hotels and a map of the area will be sent to participants together with the programme.

4

PROGRAMME OVERVIEW

TIME SESSION

Monday 9th October

08.30-09.30 Registration
09.30-10.00 OPENING OF THE SYMPOSIUM
10.00-12.30 I: OVERVIEW AND PERSPECTIVE
14.30-18.20 II: ASSESSMENTS OF ACTUAL
 REPOSITORIES OR DISPOSAL CONCEPT

Tuesday 10th October

09.00-12.25 II: continued
14.15-15.30 II: continued
16.00-18.00 TOPICAL SESSION: Is it meaningful
 to make safety assessments for
 millions of years?

Wednesday 11th October

09.00-13.00 III: SCENARIO DEVELOPMENT AND
 ASSESSMENT OF ENVIRONMENTAL
 CHANGES AND DISRUPTIVE EVENTS
15.00-18.10 IV: RELEASE AND TRANSPORT MODELLING

Thursday 12th October

09.00-13.00 IV: continued
15.00-17.10 V: PROBABILISTIC SYSTEM ASSES-
 SMENTS. UNCERTAINTY ANALYSIS
17.40-19.30 TOPICAL SESSION: In what way can
 assessments of the safety be based
 upon human judgement?

Friday 13th October

09.00-13.00 VI: VERIFICATION AND VALIDATION OF
 CODES AND MODELS. QUALITY
 ASSURANCE OF PERFORMANCE
 ASSESSMENTS

14.30-16.30 CLOSING SESSION

Posters will be exhibited in the hall from Tuesday to Friday.

5

PROGRAMME

Friday, 9th October

10 REGISTRATION

11 OPENING OF THE SYMPOSIUM

- . Dr. K. Uematsu, OECD/NEA
-
-
-

Session I

OVERVIEW AND PERSPECTIVE

Chairman:

10.00-12.30

ARE YOU SURE? PERFORMANCE ASSESSMENT BEYOND PROOF

R. Bernero (NRC, United States)

CAN THE SAME PRINCIPLES BE USED FOR THE MANAGEMENT OF RADIOACTIVE AND NON-RADIOACTIVE WASTE?

G. Bengtsson (SSI, Sweden)

SAFETY OBJECTIVES AND CRITERIA FOR WASTE DISPOSAL

H. Hill (NRPB, United Kingdom)

COMMENT EST PONDUE LA SURETE DES STOCKAGES DE DECHETS RADIOACTIFS

J. Lev, C. Izabel (CEA), Y. Kaluzny (Ministère de l'Industrie, France)

THE DEVELOPMENT AND STATUS OF PERFORMANCE ASSESSMENT IN RADIOACTIVE WASTE DISPOSAL

C. McCombie (Nagra, Switzerland), T. Papp (SKB, Sweden), S. Coplan (NRC, United States)

Lunch

SESSION II

SAFETY ASSESSMENTS OF ACTUAL REPOSITORIES OR DISPOSAL CONCEPTS

Chairmen:

14.30-16.10

6. ANALYSE DE SURETE DU CENTRE DE STOCKAGE DE L'AUBE
C. Izabel, S. Leveel (CEA/ANDRA, France)
7. DEVELOPMENT OF RADIOLOGICAL IMPACT ASSESSMENTS FOR THE DRIGG LOW-LEVEL RADIOACTIVE WASTE DISPOSAL SITE
T.G. Parker (BNFL, United Kingdom)
8. MODELS FOR PERFORMANCE ASSESSMENT OF ENGINEERED DISPOSAL FACILITY FOR SHALLOW-LAND DISPOSAL OF LOW-LEVEL RADIOACTIVE WASTES
H. Matsuzuru (JAERI), A. SUZUKI (Univ. of Tokyo, JAPAN)
9. SAFETY ASSESSMENT OF SHALLOW AND DEEP REPOSITORIES FOR RADIOACTIVE SOLID WASTE STORAGE/ DISPOSAL
R.C. Kastogi, P.K. Narayan, R.K. Mathur (Bhabha Atomic Research Centre, India)

Coffee

16.40-18.20

10. SAFETY ASSESSMENT OF SFR - A SWEDISH REPOSITORY FOR LOW AND INTERMEDIATE LEVEL RADIOACTIVE WASTE
J. Carlsson, H. Forsström, T. Papp (SKB, Sweden)
11. THE GERMAN WASTE REPOSITORY KONRAD
H.P. Berg, D. Ehrlich, H. Illi (PTB, Federal Republic of Germany)
12. METHODS FOR THE SAFETY ASSESSMENT OF A FINAL DISPOSAL OF LOW- AND INTERMEDIATE LEVEL WASTE IN AN ABANDONED ROCK SALT MINE
H.R. Ziegert (KKV "Bruno Leuschner", German Democratic Republic)
13. THE SAFETY ASSESSMENTS FOR THE CZECHOSLOVAK RADIOACTIVE WASTE DISPOSAL SYSTEM
Z. Dlouhy et al. (Nuclear Research Institute, CSSR)

Monday, 10th October

Session II continued
Chairmen:

09.00-10.40

- USE OF SAFETY ASSESSMENT FOR REPOSITORY SYSTEMS
DEVELOPMENT IN FINLAND
E.K. Peltonen, M. Nykyri (TVO, Finland)
- SAFETY ASSESSMENT OF HLW DISPOSAL IN SWITZERLAND:
LESSONS LEARNT
J. Nadermann et al. (Switzerland)
- ASSESSMENT OF THE CANADIAN NUCLEAR FUEL WASTE
DISPOSAL CONCEPT
K.V. Dormuth (AECL, Canada)
- PRELIMINARY POSTCLOSURE RISK ASSESSMENT WASTE
YUCCA MOUNTAIN, NEVADA CANDIDATE RADIOACTIVE
WASTE REPOSITORY SITE
P.G. Doctor et al. (PNL, United States)

Coffee

10-12.25

- PAGIS: PERFORMANCE ASSESSMENT OF GEOLOGICAL
ISOLATION SYSTEMS
N. Cadelli, F. Girardi, A. Saltelli (CEC)
- PERFORMANCE ASSESSMENTS FOR NUCLEAR WASTE
REPOSITORIES IN SALT DOMES: RESULTS AND
EXPERIENCES
R. Storck (GSF, Federal Republic of Germany)
- SAFETY EVALUATION OF DISPOSAL CONCEPTS IN
ROCKSALT
J. Prijs, ... (ECN, Netherlands)

Lunch

15.30 Chairmen:

- PRELIMINARY SAFETY ASSESSMENT OF A HLW REPOSITORY
IN A STRATIFORM ARGILLACEOUS FORMATION UNDERLYING
THE NUCLEAR SITE OF MOL-DESSEL IN BELGIUM
A. Bonne, J. Marivoet et al. (SCK/CN, Belgium)

- 22. RADIOLOGICAL ASSESSMENT OF DEEP GEOLOGICAL
DISPOSAL: WORK FOR UK NIREX Ltd.
D.R. Billington et al. (Harwell, United Kingdom)
- 23. RADIOLOGICAL ASSESSMENT OF THE CONSEQUENCES OF
THE DISPOSAL OF HIGH-LEVEL RADIOACTIVE WASTE IN
SUB-SEABED SEDIMENTS
C. de Marsily et al. (CEA, France)

Coffee

Topical Session

Is it meaningful to make safety assessments for
millions of years?

16.00-18.00 Chairmen:

- 24. TIME PERIOD OF CONCERN FOR LONG-TERM SAFETY
ASSESSMENT OF A GEOLOGICAL RADIOACTIVE WASTE
REPOSITORY
E. Merz, (KFA Jülich), K. Schifferstein (GSF,
Federal Republic of Germany)
- 25. THE DISPOSAL OF HIGH LEVEL WASTE AND THE NEED FOR
ASSESSING RADIOLOGICAL IMPACT IN THE FAR FUTURE
G. Johansson, C. Hågg (SSI, Sweden)

EXTENDED DISCUSSION

Wednesday, 11th October

SESSION III

SCENARIO DEVELOPMENT AND ASSESSMENT
OF ENVIRONMENTAL CHANGES AND DISRUPTIVE EVENTS

09.00-11.00 Chairmen:

- 26. A REVIEW OF APPROACHES TO SCENARIO ANALYSIS FOR
REPOSITORY SAFETY ASSESSMENT
D. Hodgkinson, T.J. Summelling (ECL, United
Kingdom)
- 27. LES SCENARIOS D'EVOLUTION A LONG TERME DE
L'ENVIRONNEMENT DES STOCKAGES : CHOIX ET METHODES
P. Peaudecerf, P.L. Blanc (BRGM, France)

7

8. TIME-DEPENDENT MODELLING ON ENVIRONMENTAL CHANGE: THE EFFECT OF QUATERNARY GLACIATIONS
G. Boulton (Grant Inst. of Geology, United Kingdom)
9. REVIEW OF SELECTED RADIONUCLIDE RELEASE SCENARIOS AND THEIR CONSEQUENCES FOR THE PLANNING OF HLW REPOSITORIES IN SALT FORMATIONS
Berest (France), Brevitz (GSF, Federal Republic of Germany)
10. ASSESSMENT OF THE RISKS ASSOCIATED WITH HUMAN INTRUSION AT RADIOACTIVE WASTE DISPOSAL SITES
C. Thegerström (NEA) et al.

Coffee

11.30-13.00

1. THE JOINT SKI/SKB SCENARIO DEVELOPMENT PROJECT
J. Andersson (SKI), T. Eng (SKB, Sweden)
2. SYSTEMATIC SCENARIO ANALYSIS FOR THE POST-CLOSURE ASSESSMENT OF THE CANADIAN CONCEPT FOR NUCLEAR FUEL WASTE DISPOSAL
W.E. Stephens, B.V. Goodwin (AECL, Canada)
3. DETERMINATION DES SCENARIOS A PREMIERE EN COMPTE DANS L'APPRECIATION DE LA SURETE D'UN SITE POUR LE STOCKAGE DES DECHETS RADIOACTIFS EN FORMATI N GEOLOGIQUE PROFONDE
C. Devillers, P. Escalier des Orres, A. Cernus (CEA, France)
4. PROBABILISTIC SIMULATION OF THE LONG-TERM EVOLUTION OF RADIOACTIVE WASTE DISPOSAL SITES
P. Ringrose et al. (Dames & Moore Int., United Kingdom)

Lunch

SESSION IV

RELEASE AND TRANSPORT MODELLING

13.00-16.10 Chairmen:

1. STATE OF KNOWLEDGE ON THE CORROSION BEHAVIOUR OF VITRIFIED WASTE MATRICES INTENDED FOR DISPOSAL IN A GEOLOGICAL REPOSITORY
E. Mouche (CEA, France)

36. STATUS IN MODELLING OF RADIONUCLIDE RELEASE FROM HIGH LEVEL WASTE GLASS AND SPENT FUEL
B. Cranbow, Max-Planck-Institut Berlin
37. SOURCE TERM MODELLING FOR THE DISPOSAL OF LOW AND INTERMEDIATE LEVEL WASTE
P. Tasker (Harwell, United Kingdom)

Coffee

16.40-18.10

38. OVERVIEW OF NEAR-FIELD PERFORMANCE ASSESSMENT MODELLING
N. Apte (PNL, United States)
39. HYDROLOGICAL MODELLING FOR THE SAFETY ASSESSMENT OF RADIOACTIVE WASTE DISPOSAL (to be confirmed)
40. MODELLING TRANSPORT OF RADIONUCLIDE IN THE GEOSPHERE: AN ASSESSMENT OF THE POTENTIAL ROLE OF THE CURRENTLY AVAILABLE MODELS
M.C. Cacas et al. (EMP, France)

Thursday, 12th October

SESSION IV CONTINUED

09.00-11.00 Chairmen:

41. ANALYTICAL METHODS FOR PREDICTING CONTAMINANT TRANSPORT
T.W. Pigford (LBL, United States)
42. RELEASE AND TRANSPORT MODELLING - SOME EXPERIENCES FROM THE SWEDISH PROGRAM
I. Meretnieks (KTH, Sweden)
43. GEOCHEMICAL AND CHEMICAL DATA AND MODELLING FOR THE SAFETY ASSESSMENT OF GEOLOGICAL DISPOSAL OF NUCLEAR WASTE
P. Sargent (AECL, Canada), I. McKinley (MAGRA, Switzerland)
44. MODELING OF COUPLED GEOCHEMICAL AND TRANSPORT PROCESSES: AN OVERVIEW
C.L. Carnahan (LBL, United States)

Coffee

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13.00

STATE OF THE ART ON MODELLING REPOSITORY PERFORMANCE IN SALT DOMES

A. Nies (GSF, Fed. Rep. of Germany)

GAS GENERATION AND GAS TRANSPORT (to be confirmed)

AN OVERVIEW OF BIOSPHERE MODELLING FOR THE ASSESSMENT OF SOLID WASTE DISPOSAL
G. Smith (ECL, United Kingdom)

LUNCH

SESSION V

PROBABILISTIC SYSTEM ASSESSMENTS UNCERTAINTY ANALYSIS

17.10 Chairmen:

THE OECD/NEA PROBABILISTIC SYSTEMS ASSESSMENT CODES (PSAC) USER GROUP: OBJECTIVES, ACHIEVEMENTS AND PROGRAMME OF ACTIVITIES
B. Thompson (BMIP, United Kingdom) et al.

SOURCES OF ERRORS AND UNCERTAINTY IN THE PREDICTION OF THE GEOLOGIC BEHAVIOUR OF A NUCLEAR WASTE REPOSITORY
G. de Marsily (EHP, France)

THE APPLICATION OF PROBABILISTIC RISK ANALYSIS TO THE RADIOLOGICAL ASSESSMENT OF UNDERGROUND DISPOSAL: A NEW TIME-DEPENDENT MONTE-CARLO SIMULATION CODE FOR THE PROBABILISTIC RISK ANALYSIS OF UNDERGROUND RADIOACTIVE WASTE DISPOSAL
(Title and author (UKDOE) to be confirmed)

DEVELOPMENT OF THE LISA CODE
A. Saltelli et al. (CEC Ispra, Italy)

ETUDE DE SENSIBILITE ET EVALUATION DES INCERTITUDES AFFECTANT LES CALCULS DECOMPLANT DE DECHETS ASSOCIES A UN STOCKAGE DE DECHETS NUCLEAIRES EN FORMATION GEOLOGIQUE PROLONGEE
A. Cernes et al. (CEA, France)

Coffee

TOPICAL SESSION

In what way can assessments of the safety be based upon human judgments?

17.40-19.30 Chairmen:

53. THE FORMAL USE OF EXPERT JUDGEMENTS IN PERFORMANCE ASSESSMENT OF RADIOACTIVE WASTE REPOSITORIES
I. THE GENERAL CONCEPT
II. SUGGESTED GUIDELINES
E.J. Bonano et al. (Sandia Nat. Lab., United States)

54. THE DEVELOPMENT OF AN OVERALL ASSESSMENT PROCEDURE INCORPORATING AN UNCERTAINTY AND BIAS AUDIT
H.C. Thorne, J-N Laurens (Electrovatt, United Kingdom)

55. THE USE OF EXPERT OPINION IN SPECIFYING INPUT DISTRIBUTIONS FOR RADIOLOGICAL PROBABILISTIC RISK
G.J. Dalrymple (BMIP, United Kingdom)

56. CONFIDENCE BUILDING - IS SCIENCE THE ONLY APPROACH?
K. Bragg (AECC, Canada)

Friday, 13th October

SESSION VI

VERIFICATION AND VALIDATION OF CODES AND MODELS. QUALITY ASSURANCE OF PERFORMANCE ASSESSMENTS

09.00-10.35 Chairmen:

57. A BROAD VIEW OF MODEL VALIDATION FOR THE SAFETY ASSESSMENT OF RADIOACTIVE WASTE REPOSITORIES
C. Tsang (LBL, United States)

58. HYDROCOIN - FINDINGS FROM LEVEL 2: MODEL VALIDATION
B. Grundfelt, B. Lindbom (Kemakta), K. Andersson (SKI, Sweden)

59. INTRAVAL AS AN INTEGRATED INTERNATIONAL EFFORT FOR GEOSPHERE MODEL VALIDATION - A STATUS REPORT
K. Andersson (SKI), E. Grundfelt, A. Larsson (Kemakta, Sweden)

60. **CHEMVAL - AN INTERNATIONAL RESEARCH INITIATIVE FOR THE VERIFICATION AND VALIDATION TESTING OF CHEMICAL SPECIATION AND CHEMICAL TRANSPORT COMPUTER PROGRAMS**
T.V. Broyd et al. (Atkins, United Kingdom)

Coffee

11.00-13.00

61. **DEGREES OF ASSESSMENT VALIDATION AVAILABLE FROM NATURAL SYSTEMS**
N. Chapman (BGS, United Kingdom), B. Côme (CEC)
62. **ON THE RELIABILITY OF PREDICTIONS OF GEOCHEMICAL RESPONSE - PROJECT COSA IN PERSPECTIVE**
B. Côme et al. (CEC)
63. **SOFTWARE TOOLS FOR THE QUALITY ASSURANCE OF SCIENTIFIC CODES USED IN NUCLEAR FUEL WASTE MANAGEMENT PROGRAMS**
T.I. Orea (Univ. of Ottawa), G. Sheng (McMaster Univ., Canada)
64. **QUALITY ASSURANCE FOR SAFETY ASSESSMENT OF RADIOACTIVE WASTE REPOSITORIES**
I.E. Hill et al. (Cedar Design Syst., United Kingdom)
65. "QA-paper" [title to be decided]
USDOE or USNRC

LUNCH

CLOSING SESSION

14.30-16.30 Chairman:

ASSESSING THE SAFETY OF RADIOACTIVE WASTE REPOSITORIES:

- WHAT HAVE WE LEARNT UP TO NOW?
- WHAT ARE THE REMAINING OPEN ISSUES?
- WHAT WILL BE THE FUTURE DIRECTIONS AND DEVELOPMENTS?

THE SAFETY OF RADIOACTIVE WASTE REPOSITORIES IN THE PERSPECTIVE OF THE NUCLEAR ENERGY ISSUE

THE SAFETY OF RADIOACTIVE WASTE REPOSITORIES IN THE PERSPECTIVE OF GLOBAL ENVIRONMENTAL PROTECTION

POSTERS

Posters will be exhibited in the hall outside the meeting room from tuesday to thursday. Reference to relevant posters will be done in connection to the oral sessions by the Chairmen or the Secretariat.

- P1 **PERFORMANCE ASSESSMENT AS A REGULATORY TOOL - AN INTEGRATED APPROACH**
K. Andersson (SKI, Sweden)
- P2 **IDENTIFICATION OF CALCULATION HIERARCHY AND INFORMATION FLOW FOR POSTCLOSURE PERFORMANCE ASSESSMENT OF A GEOLOGIC REPOSITORY**
R.I. Avci, A. Brandstetter, J.C. Cunnane (Battelle), A. Bindokas (USDOE, United States)
- P3 **PERFORMANCE ASSESSMENT FOR A L/ILW REPOSITORY IN MARL**
F. Van Dorp, C. McCombie, P. Zuidema (NAGRA, Switzerland)
- P4 **THE UK ASSESSMENT OF DISPOSAL OF INTERMEDIATE LEVEL WASTE IN CLAY FOR THE CEC PACOMA PROJECT**
S.F. Hobbs (NRPB), G. Dalrymple (Principia Mechanical), K. Vinters (Barvell), J-M Laurens (Electrovatt, United Kingdom)
- P5 **PACOMA - Granite**
CEA
- P6 **DETERMINISTIC PERFORMANCE ASSESSMENT OF A MEDIUM-LEVEL AND ALPHA-BEARING WASTE REPOSITORY IN CLAY**
J. Narivoet, Th. Zeevaert, A. Bonne (SCK, Belgium)
- P7 **PERFORMANCE ASSESSMENT OF CONFINEMENTS FOR MEDIUM-LEVEL AND ALPHA-CONTAMINATED WASTE (PACOMA): THE ROCK SALT OPTION**
R. Hirskeorn, H. Reusch (GSP, Federal Republic of Germany)
- P8 **PERFORMANCE ASSESSMENT EXPERIENCES AND OUTLOOKS FROM THE POINT OF VIEW OF MODELLERS AND SAFETY AUTHORITIES**
T. Vienn, S. Vuori (VTT), E. Roukela (Finland)
- P9 **AN OVERVIEW OF PERFORMANCE STUDY BY FMC FOR THE GEOLOGICAL ISOLATION OF HLW**
S. Masuda, H. Umeki (FMC), N. Sasaki, K. Idemitsu, Y. Yusa (Tokai Works, Japan)

16

- 11
- P10 THE SAFETY ASSESSMENT AS A NECESSARY PART OF THE LICENSING PROCEDURE OF THE RADIOACTIVE WASTE REPOSITORY IN THE GDR
D. Zappe, V. Körner (Staatliches Amt für Atomsicherheit, Berlin/DGR)
- P11 SAFETY ASSESSMENT OF INTERMEDIATE AND LOW LEVEL RADIOACTIVE WASTE DISPOSAL IN YUGOSLAVIA
V.J. Jelavic (Ize), D. Tankosic (Bechtel National), I. Pircas, A. Peric (IBK, Yugoslavia)
- P12 IMPLICATIONS OF ENVIRONMENTAL CHANGE FOR BIOSPHERE MODELLING: WORK FOR UK NIREX LTD
M.C. Thorne (Electrovatt, United Kingdom)
- P13 ENVIRONMENTAL CHANGE, DISRUPTIVE EVENTS AND HUMAN INTRUSION: MODELS USED AT MRPB
S.F. Hobbs, R. Klos, I. Barraclough, J. Martin, J. Davis (MRPB, United Kingdom)
- P14 SCENARIO "DEFAUT DE SCELLEMENT"
M. Alivier, J.M. Peres (CEA/ANDRA, France)
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