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ORGANISATION FOR ECONOMIC
CO-OPERATION AND DEVELOPMENT

RESTRICTED

Paris, drafted: 30th March 1987

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STEERING COMMITTEE FOR NUCLEAR ENERGY
RADIOACTIVE WASTE MANAGEMENT COMMITTEE

Rpt. located
in OCL

Report of the Second Meeting
of the NEA Performance Assessment Advisory Group (PAAG)
16th-18th March 1987

The second meeting of PAAG was held in Paris from 16th to 18th March. A detailed report is given in the record below. The most pertinent points to be mentioned from the meeting are:

- * Participation from Member countries has been further increased and in its present composition PAAG combines high competence and broad overview in performance assessment matters to guide the RWMC in its programme.
- * The first day of the meeting was devoted to information exchange on recent developments within the performance assessment area in Member countries and at NEA.
- * Proposals to increase resources devoted to computer codes and data bases in the radioactive waste management area at the NEA Data Bank were discussed. Noting that the NEA Data Bank already actively supports a number of well-established projects within NEA, such as the ISIRS, the TDB and the work of the PSAC User Group, PAAG strongly supported the proposals to provide increased support from the NEA Data Bank in these and related areas.
- * Questions related to the identification and selection of scenarios for performance assessments of nuclear waste disposal were considered by PAAG to be a high priority area. It endorsed the proposal to review in depth the present experiences and to discuss further, within a small working group, a set of important issues on scenarios. To collect basic information a questionnaire has been set up and will be sent to the Member countries. A progress report from the working group and a draft review report will provide the background for a one-day topical session on scenarios in conjunction with the next meeting of PAAG.

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- * The organization of a workshop on near-field assessment was discussed. PAAG agreed to focus the workshop on near-field assessments of repositories for low- and intermediate level waste.
- * PAAG took note of the present activities within the PSAC User Group and endorsed its plans for future intercomparison exercises.
- * PAAG noted also the progress made on the Thermochemical Data Base (TDB) and recognised the need to provide at national level a more official and greater financial support to the specialists involved in the evaluation of the Data Base. PAAG agreed to propose that this role could be played by the ISIRS Executive Committee, with appropriate adjustments in its composition to reflect this broader mandate.
- * Based on a report of preliminary conclusions from the NEA Workshop on Uncertainty Analysis for System Performance Assessments recently held in Seattle, PAAG discussed with great interest the subject of uncertainties. It was concluded that particularly the conceptual uncertainties would have to be considered in more detail. Decisions would be taken at the next PAAG meeting before which the proceedings of the workshop in Seattle will be available.
- * PAAG agreed to recommend to the RWMC that OECD/NEA sponsor the International Alligator Rivers Analogue Project. The AAEC, US NRC, UK DOE and JAERI are prepared to provide funding for this project. No other NEA initiatives in the area of natural analogues were considered necessary for the moment, as these are covered by a group organised by the CEC.
- * Among other issues discussed by PAAG were:
 - methods and procedures to assign research priorities
 - how to transmit results of performance assessments to the public
 - operational safety of nuclear waste repositories
 - quality assurance.

These would be taken up later on in the work of PAAG.

Performance Assessment Advisory Group (PAAG)

Summary record of the Second Meeting held at OECD, Paris
16th-18th March 1987Present:

Mr. Hardy, Australia
Mr. Marivoet, Belgium
Mr. Bragg, Canada
Mrs. Wuschke, Canada
Mr. Storck, Federal Republic of Germany
Mr. Vieno, Finland
Mr. Peltonen, Finland
Mr. Lewi, France
Mr. Van Kote, France
Mr. Gera, Italy
Mr. Mishima, Japan
Mr. Muraoka, Japan
Mr. Andersson, Sweden
Mr. Papp, Sweden (Chairman)
Mr. Hadermann, Switzerland
Mr. McCombie, Switzerland
Mr. Zurkinden, Switzerland
Mr. Grimwood, United Kingdom
Mr. Hogdkinson, United Kingdom
Mr. Thompson, United Kingdom
Mr. Coplan, United States
Mr. Liebetrau, United States
Mr. Cranwell, United States
Mr. Turner, United States
Mr. Cadelli, CEC
Mr. Sartori, NEA Data Bank
Mr. Wanner, NEA Data Bank
Mr. Olivier, NEA
Mr. Carlyle, NEA
Mr. Chamney, NEA
Mr. Ruegger, NEA
Mr. Thegerström, NEA

Item 1: Opening of the meeting

1. The meeting was opened by Mr. Olivier who welcomed participants to this second meeting of the NEA Performance Assessment Advisory Group (PAAG). He noted with satisfaction the interest of Member countries in the group as manifested by the level of participation to this meeting. He expressed his confidence in that the group would be able to have constructive discussions and to work effectively in spite of the large size of the group. He then invited the chairman of PAAG, Mr. Papp to take over the meeting.

2. Mr. Papp recalled that this was the second meeting of PAAG, noting that PAAG's own proposals were now being initiated and developed. He welcomed all the participants and in particular those who participated for the first time, namely:

- Mr. Hardy from Australia
- Mr. Bragg from AECB, Canada
- Mrs Wuschke from AECL, Canada, replacing Mr. Wikjord at this meeting
- Mr. Storck from F.R.G.
- Mr. Peltonen, Finland
- Mr. Gera, Italy
- Mr. Mishima, Japan
- Mr. Coplan, US NRC as official US representative and Mr. Liebetrau, Mr. Cranwell and Mr. Turner, participating as observers for US DOE, US NRC and the US Defense Waste Program respectively.

Item 2: Approval of the Agenda

3. The Chairman referred to the agenda given in PAAG/DOC(87)1 and called on Mr. Thegerström to briefly explain the contents. He said that there were three main purposes of this meeting:

- information exchange between PAAG members on recent developments in the performance assessment area within their Member countries (Item 5 on the agenda)
- information update on NEA activities in performance assessment related areas and in other areas (item 6 on the agenda)
- presentation and discussion of proposed PAAG activities (item 7 - item 13 on the agenda).

Emphasis should be on the discussion of new activities and it was proposed that the meeting be planned so that items up to and including item 6 be covered during the first day. The agenda was adopted in full.

Item 3: Approval of the minutes of the first meeting of PAAG

4. Comments had been received from Dr. Cadelli, CEC and the following amendments should be introduced in SEN/RWM(86)4:

On page 10, item 17, substitute lines 5 to 7 with: "site specific assessment for repositories in clay, granite, salt and the sub-seabed are being carried out. Reference sites were chosen and the selection was based for each option (Mol, Auriat, Gorleben and GME) on the availability of a maximum of information on the site and the host rock. Variant sites were also added"....

Substitute last line with: "assessment of intermediate level and alpha bearing waste called PACOMA".

By that the minutes of the first meeting of PAAG were approved.

Item 4: Comments on PAAG activities at the last meeting of the radioactive waste management committee (RWMC)

5. The Chairman briefly related the discussion of PAAG matters at the last RWMC meeting with special reference to paragraphs 7, 13, 15, 16 and 17 in SEN/RWM(86)6. Thus he recalled that the Committee had expressed great interest in PAAG and that it had endorsed its terms of reference underlining the need to report to the Committee on suggested initiatives indicating their order of priority. To reflect this, the following addition is introduced in the terms of reference of PAAG [SEN/RWM(86)4, page 2]:

v) report regularly to the RWMC on proposed initiatives by PAAG.

6. The Chairman further recalled that the RWMC had agreed that Australia should be invited to the next PAAG meeting. He also referred to item 11 on the agenda, where Mr. Hardy would inform PAAG on the Australian proposal for an OECD/NEA sponsored international project on natural analogue studies at Alligator Rivers.

Item 5: Recent developments in Member countries

7. Participants briefly updated PAAG on developments since last meeting in the area of performance assessment in their respective country or organisation. Since most of the presentations were supported by written contributions that were distributed during the meeting, the content of the presentations are not related in these minutes. A list of all written material is attached in appendix 2 and further copies can be obtained from the NEA Secretariat.

Item 6: Progress of NEA activities in performance assessments and related areas

8. Mr. Thegerström made a brief introduction to this item recalling that further discussion of the future activities related to databases and codes would be held under item 7. Item 6 was thus intended mainly as an information update on the NEA activities, while item 7 would deal with the question of how to maintain and develop some of these activities to the best benefit of Member countries.

9. Mr. Ruegger gave a brief update of developments within the ISIRS project [3] [15]. He mentioned that all data submitted to date have been loaded into the data base, which now contains data relative to 2600 sorption experiments. He reviewed the answers given to requests for ISIRS data and he pointed out that the best can be obtained from ISIRS when the user interact directly himself with the system as in a case where a French scientist from CEA worked with ISIRS for several weeks at the NEA Data Bank in Saclay. Thus this is encouraged whenever feasible. He also said that efforts are being made to make the ISIRS more user-friendly both for loading of data and for data searching. The efforts are directed towards adoption on micro computers as far as possible. Finally, he mentioned that NEA plans to hire a consultant to upgrade the present data base in selected areas by collection and loading of new data to ISIRS.

10. Mr. Wanner described recent developments of the NEA Thermochemical Data Base (TDB) [4]. He mentioned that the reviewers on uranium met in December last year. The meeting had been very fruitful and similar meetings with the review teams on americium and technetium are planned for beginning of next Autumn. The Uranium reviewers decided at their meeting that a few experiments should be performed to certify some very basic uranium reaction data upon which the thermodynamic data of most other uranium species critically depend. They also decided that organic complexes of uranium should not be taken into account at this stage as it would further delay the publication of the uranium book, which is now planned to appear at the end of this year. It was also mentioned that a short course on the use of the code MINEQL/EIR will be held on 25th-26th March at the NEA Data Bank. There will be 10 participants from 7 countries which is about optimum for a course with an intense interaction between teachers and participants.

11. Mr. Carlyle informed on activities within the Probabilistic Systems Assessment Codes (PSAC) User Group [12] [16]. One meeting of PSAC had been held in London on 11th-14th November 1986. In conjunction with that meeting a one day topical workshop was held on the "Reduction of Research Codes to PSAC Sub-models". The Level 0 intercomparison exercise to test executive modules of PSA Codes has been finalized, the results have been compiled and a level 0 draft report is under preparation. Further intercomparison exercises are being planned on comparison with exact solutions and on hypothetical disposal systems, one for deep disposal and one for shallow disposal. A plan is also being prepared for the next two years activities within the PSAC User Group. It will outline the broad objectives of the group and clarify the future orientation of the groups' work on intercomparison exercises. The next PSAC meeting will be held in Stockholm in June and hosted by SKB. A topical meeting on justification of probability density functions will then also be held.

12. Mr. Sartori informed about the work and services of the NEA Data Bank in support of the PSAC User Group. He first mentioned that there has been a marked increase in requests for codes in the radioactive waste management area during the last years. In co-operation with members of the group, the NEA data bank develops standard interface formats especially as regards the pre-processing and post-processing of input data and of results. Random number generators and sampling modules have been collected, tested and made available to the group.

13. Mr. Cranwell asked if it would be acceptable to the PSAC User Group if the Sandia group would join the group at this stage. Mr. Carlyle said that it would pose no problems and that the Sandia group would be welcome to participate in the work. He mentioned that several groups have joined PSAC after having participated as observers at one meeting to get an insight to the work done by PSAC.

14. Mr. Carlyle informed briefly about the activities of the Advisory Group on In-Situ Research and Investigations for Geological Disposal (ISAG) [5]. He mentioned that ISAG held its first meeting in October 1986. Similar to PAAG, its role is to inform and advise the RWMC on activities in the area of in-situ research and field investigations. Among the initiatives taken by ISAG at its first meeting were the preparation of workshops on (a) excavation response as a result of repository construction and (b) backfilling and sealing materials and techniques. (a) is planned to be held in November this year in Paris. A report, for wide distribution, on R&D activities in the area of in-situ research and demonstrations

will be prepared. Ways to increase interaction between experimentalists and modellers will also be explored by ISAG (see further item 10 below). The next meeting of ISAG will be held on 23rd-25th June this year.

15. Mr. Olivier gave some brief informations on the Crystalline Rock Program Directors Group (CRPDG). In response to an initiative by Mr. Rusche, head of the US DOE Office of Civilian Radioactive Waste Management, the NEA organised an ad hoc meeting at directors level with participation of countries having an interest in nuclear waste disposal in crystalline rocks. Questions discussed at the meeting dealt mainly with national programme strategies and the processes and costs for site characterization and site selection. It was recognized at the meeting that there are existing mechanisms for co-operation at different levels between these countries. The group agreed to meet again in about one year time, notably to review broad issues of interest to all participants. A report would be made to the next meeting of the RWMC.

16. Mr. Andersson updated the PAAG on recent developments within the HYDROCOIN project. Two workshops and co-ordinating group meetings had been held during the period, one in Japan, May 1986 and one in the Netherlands, November 1986. The level 1 report, on code verification, has been finalised and it will be printed by NEA as soon as the co-ordinating group has given its final clearance. All level 2 (validation) and level 3 (sensitivity and uncertainty analysis) cases have been defined and most of the calculations should be finished at the time of the next workshop which will be held in Washington D.C. in May. This would, according to previous planning, be the last HYDROCOIN workshop. However, in response to the wish of many participants, it will be considered to arrange, if needed, a final workshop at the end of this year. The level 1 report would thus appear this year while the reports on level 2 and 3 would probably be published during 1988. Mr. Andersson pointed out that there is an interest and need to secure the safe deposition and storage of all data related to Hydrocoin case definitions and calculation results. New groups who would like to use these data for testing of their own codes and modelling methodologies could then benefit from easy access to such a data base. The NEA data bank might be well suited to provide this follow up service on Hydrocoin.

17. Mr. Andersson also mentioned briefly the plans for INTRAVAL, a project for validation of geosphere transport models. Two ad-hoc group meetings have been held to plan the project and a third ad hoc group meeting will be held in Stockholm from 2nd to 3rd April. It is believed that subsequent to this meeting formal invitations to participate could be sent out. The project structure will be very similar to that for HYDROCOIN. The only exception being that a technical committee is foreseen in INTRAVAL to help the project secretariat with the technical/scientific planning and evaluation of the project.

18. Mr. Thegerström informed about the plans for an NEA Newsletter on Radioactive Waste Disposal. The broad objective would be to provide brief and concise information on activities at NEA and in Member countries. The scope would be R&D related to nuclear waste disposal and national programs as well as selected topical subjects. The information provided by members of RWMC, PAAG, ISAG at meetings would be used as primary information sources. In addition, voluntary contributions from individuals in Member countries would be welcome. When appropriate, a systematic collection of information on selected topics might be

made as in the previous newsletter on radionuclides migration in the geosphere. A draft newsletter would be prepared for discussion at the RWMC meeting in June.

19. Mr. Carlyle presented the preliminary conclusions from the NEA Workshop on Uncertainty Analysis for System Performance Assessments held in Seattle, on 24th-26th February in co-operation with the US DOE. He handed out a draft document highlighting the major issues discussed at the workshop and conclusions/recommendations. He mentioned that a summary of discussions and conclusions will be prepared for inclusion into the proceedings that will be published by NEA later this year.

20. The PAAG took great interest in this subject and several points of discussion or clarification were raised. The distinction between numerical uncertainties and conceptual uncertainties was underlined. While the treatment of parameter uncertainties is well advanced, for instance through the work of the PSAC User Group, it was noted that the conceptual uncertainties are often more difficult to treat but also very important in order to understand the overall uncertainties in performance assessments. One way to handle this would be to use several conceptual models and to compare the results. Another aspect mentioned was that some uncertainties might be eliminated "by decree" by regulators in their choice of indicators or time periods of concern.

It was agreed that most important is to get an understanding of where the highest uncertainties are to be found and to quantify these where possible. Some of the issues raised will be considered further in connection with the NEA work on scenarios (item 8 below). It was agreed that the proceedings of the Seattle workshop will be sent to PAAG members and that the summary and recommendations should be incorporated into a discussion paper to be presented at the next PAAG meeting when any possible further initiatives in this area would be discussed.

Item 7: Needs and priorities for computer related activities in system performance assessment of nuclear waste disposal

21. Mr. Olivier made an introduction to this item. He outlined its relation to the future programme of work for the NEA Data Bank that will be discussed at the NEA Steering Committee Meeting on 28th-29th April. He said that the comments and advise of PAAG as to the plans in RWM/DOC(86)6 would be submitted to the Steering Committee before its meeting. He underlined that the document had been worked out with the help of consultants from several Member countries on the request of the RWMC. Members of the RWMC, of the Executive Committee of ISIRS and of PAAG had also been consulted.

22. Mr. Thegerström briefly reviewed the content of the plans in RWM/DOC(86)6. He underlined that the main purpose is to reinforce the competence and resources of NEA in providing effective services to back up its co-ordinating role in international co-operation projects involving advanced computer codes and data bases. He also summarized the written comments that had been received.

23. The Performance Assessment Advisory Group confirmed the need for the high priority to be given to activities related to long-term performance assessment of disposal systems and the associated computer-based techniques. Noting that the NEA

Data Bank has already begun to support, on a modest scale, a number of well-established projects within NEA, such as the ISIRS System, the Thermochemical Data Base (TDB) and the work of the PSAC User Group (Probabilistic Systems Assessment Codes User Group). PAAG strongly supported the proposals concerning the future of the NEA Data Bank in the area of radioactive waste management. In particular, PAAG welcomed the role of NEA and of the Data Bank as a catalyst and co-ordinator for international activities on performance assessment and agreed that increased efforts in this field would enhance considerably the credibility of performance assessment tools. PAAG also agreed in general with priorities indicated in document RWM/DOC(86)6 with regard to the work on data bases and on computer codes and with the type of services to be provided by the Data Bank. However, the group advised the Secretariat to carefully keep under control the amount of work involved. It was also confirmed that NEA itself would probably not play an active role in the carrying out of actual performance assessment calculations.

24. As a conclusion, therefore, the need for NEA to reinforce its competence and resources in an area of high priority and under rapid development was clearly recognised, particularly if the Agency is expected to continue to remain in the forefront of activities in the field of performance assessment through PAAG and the RWMC. A great deal of efforts is currently devoted at national level to the development of improved methodologies and scientific tools for performance assessment. In this context, it appears desirable for NEA to aim essentially at upgrading these efforts through international co-operation that will promote increased confidence in data bases and computer programmes being used for performance assessment.

25. Under this item PAAG discussed also a proposal to establish a "Geochemistry" Group to assist in the development of the TDB project. The group agreed with the need to provide at national level a more official and greater financial support to the specialists involved in the evaluation of the Data Base. Instead of setting up a new group, PAAG agreed that the ISIRS Executive Committee could play this role, with appropriate changes in its present composition in order to reflect this broader mandate and possible changes of the membership, and also the likely integration of the ISIRS project in the normal programme of work of the NEA.

Item 8: Working group on identification and selection of scenarios for performance assessment of nuclear waste disposal

26. Mr. Thegerström introduced this item. As decided at the first PAAG meeting brief overviews on scenario issues had been collected from PAAG members and a small consultant group had been convened to help propose further NEA activities in this area. The work up to now was documented in PAAG/DOC(87)2.

27. The PAAG considered the scenario issues as a high priority area. It endorsed the proposal to review in depth the present knowledge and experiences and to discuss further a set of important issues on scenarios at an international level within NEA.

It agreed to set up as proposed a small working group or extended consultant group to deal with these issues. It pointed out that this group should start to consider the technical issues like terminology, general approaches and methodologies as a first priority before entering into discussions on more

philosophical or regulatory related issues. It stressed the need to keep the work strongly linked directly to PAAG. It agreed to explore the possibility of compiling a scenario catalogue with the help of the proposed questionnaire and it gave some advice as to the formulation of the questionnaire. It pointed out that the NEA might consider to hire one or two consultants to help evaluate and prepare further background material and the review report. It proposed that PAAG itself be given the opportunity to discuss scenario-related questions in depth at its next meeting on the basis of the document prepared by the working group.

28. In view of the proposals given and the subsequent discussions the following actions are foreseen:

- The Secretariat will send out, after due completion in view of comments provided by PAAG, the questionnaire to PAAG. PAAG members will provide as complete answers as possible to the questionnaire within less than two months from they receive it.
- The working group will be established on the basis of the answers received and in consultation with PAAG members.
- The Secretariat will, possibly with the help of one or two Consultants prepare further the review report and other background materials for consideration at a working group meeting to be held this autumn.
- A progress report from the working group and draft review report will be provided in advance of the next PAAG meeting. Preparations will be made to arrange for a one-day topical discussion of scenarios related issues in conjunction with the next PAAG meeting.
- Based on the discussions at the next PAAG meeting further directions and priorities will be given for the NEA work on scenarios.

Item 9: Workshop on near-field studies/modelling

29. Mr. Thegerström related the proposed objective and scope of a workshop on the near-field [PAAG/DOC(87)3]. In line with the follow-up of conclusions reached on this point by PAAG at its first meeting one of the objectives was set out to be to discuss the possible needs in this area for verification/ validation of models and databases through international co-operation.

30. Many different viewpoints on this subject were expressed by PAAG members. The need to focus on some specific aspects of all the different near-field issues was pointed out. After some discussion, it was agreed to focus the workshop on near-field assessment in conjunction with disposal of low and intermediate level waste, including waste containing radionuclides with long half-lives. Integrated near-field assessments and modelling as well as the effects due to the presence of large amounts of concrete and other conditioning materials in the near-field would be part of the workshop program. Focus would be on chemical rather than thermo-mechanical effects.

Item 10: The interaction between experimentalists and modellers

31. Mr. Carlyle introduced this item by referring to discussions at the NEA Workshop on performance assessments in October 1985 when, among other things, the link between modelling and field/laboratory observations was discussed, and discussions at the first meeting of ISAG. Increasing interactions between experimentalists and modellers was considered of high priority by ISAG and was the main item on the agenda of a small meeting of ISAG members in mid-February, when it was decided to issue a questionnaire to ascertain the most important issues so that any future initiatives to increase interaction between performance assessments and in situ investigation at an international level could have a firm foundation.

32. PAAG noted developments on this issue within ISAG and the importance of maintaining communication between experiments/in situ investigations and modelling, both at national and international levels and that this was a topic that concerns both ISAG and PAAG. It was therefore agreed that both groups should participate in fulfilling the following actions:

- The NEA Secretariat will prepare a draft questionnaire to be sent for comments to ISAG and PAAG during April/May
- The final version of the questionnaire would be agreed at ISAG meeting in June,
- It would be distributed to PAAG and ISAG for completion over Summer,
- The results would be considered by a consultant group of performance assessors and in situ researchers/investigators from PAAG and ISAG in the Autumn.

Item 11 Natural Analogues

33. The Chairman in introducing this item recalled that it had been discussed at the first PAAG meeting as well as at the last meeting of RWMC. He also recalled that the RWMC had expressed considerable interest in this subject and had agreed that the NEA Secretariat should maintain close links with the CEC group. It had also agreed to invite Australia to the next PAAG meeting and had proposed that PAAG should consider further the need for new initiatives in this area and advise the Committee on the most appropriate NEA involvement, in view of what is already being done at an international level.

34. Mr. Hardy gave a presentation of the AAEC evaluation of uranium ore bodies in the Alligator Rivers Province as analogues of radioactive waste repositories. He outlined the advantages of natural analogue studies to help understand and to get long-term evidences of important phenomena and processes in the near-field as well as for migration in the geosphere. He mentioned results on very slow migration of uranium (100 min million years), evidences for matrix diffusion and for retardation of I-129. He also highlighted experimental difficulties i.e. the need to be able to measure very low levels of I-129 and Pu, which make it necessary to apply state-of-the-art methodologies. Alligator Rivers studies had been started in 1981 with support from US NRC from 1981 to 1986 and a contract from UK DOE in 1986. There had also been informal collaboration with JAERI.

35. As regards the future programme at the Alligator Rivers an international project to be started 1st of July 1987 is now being proposed to interested countries by Australia. Four Organisations, AEC, US NRC, UK DOE and JAERI, are prepared to provide funding for this project and other organisations have expressed interest in participating in different ways without direct funding. The details of the project proposal are given in a document that was distributed to PAAG. Mr. Hardy said that he considered it to be important that the project now was consolidated into an international project sponsored by OECD/NEA. He therefore asked the PAAG to give its support for NEA-sponsorship of the Alligator Rivers Analogue Project and to advise the RWMC accordingly.

36. In the subsequent discussion it was clear that PAAG recognised the high value of Natural Analogue studies. Consequently PAAG found it appropriate for NEA to give a support to the project. On the specific question whether PAAG would recommend NEA to sponsor the Alligator Rivers project, the three countries having indicated their interest to join Australia in the full project, JAERI Japan, UK DOE and US NRC, considered a NEA sponsorship to be of high value to the project. Mr. Olivier clarified the implications of a NEA sponsorship. As the practical set-up of the project was more or less complete it would not require additional work by NEA. The project would be given the status of an international OECD-project and at the practical level NEA would be involved in the project secretariat and help organise workshops and publish the main reports. PAAG agreed to recommend to the RWMC that NEA sponsor the project.

37. Mr. Cadelli informed about the CEC activities in the area of natural analogues. The CEC has set up a natural analogue working group. This is a small research oriented working group. Participation is open to specialists without restriction to CEC-Member countries. Two meetings have been held with the working group the last was in Interlaken in June 1986. A final document (EUR 10672) from this meeting will soon be released.

CEC is organising a broad symposium on natural analogues. It will be held in Brussels in the last week of April. A planned meeting of the CEC working group on natural analogues has been postponed from November to beginning of next year. Mr. Cadelli also mentioned that the IAEA will hold an Advisory Group Meeting on the usefulness of natural analogues in performance assessments in Vienna in November.

38. The PAAG considered the present CEC arrangements for information exchange on natural analogues as sufficient. Apart from the sponsoring of the Alligator Rivers project there is thus today no need for further NEA initiatives in this area. The need for close co-ordination between all the international organisations was underlined in order to avoid putting too much burden on the limited group of experts already heavily involved both at a national level and in international activities.

Item 12 Methods and procedures to assign research priorities

39. The Chairman introduced this item as being of concern in most waste disposal programmes. It had been raised by Mr. McCombie at the first PAAG meeting. Mr. McCombie said that it was basically a question of how to allocate available resources in a R&D programme. It was very much related to the site-investigation

programmes and site-selection procedures. Some of the questions raised during the discussion were:

- rationales for decisions on breadth and depth of site-characterisation programmes
- when are we satisfied with our state of knowledge and with remaining uncertainties in a particular area?
- how do we use performance assessments as a tool for decisions in site characterisation programmes and in site selection?

40. This topic was considered to be related to discussions under Item 10 in that the assignment of research priorities often involved interaction between experimentalists and modellers. It was therefore agreed that this topic would be considered as a separate item during the joint meeting of a few ISAG and PAAG members in the Autumn and a report with recommendations would be prepared for the next meeting.

Item 13 Proposal for additional activities

41. No specific additional activities for immediate action were proposed. Several items were mentioned however that might be considered later on in the work of PAAG.

- The role of experts in public information. How to transmit results of performance assessments to the general public.
- Operational safety of nuclear waste repositories.
- Multiattribute analysis in site selection processes.
- Quality assurance in general and possibilities for NEA to assist in particular.

Item 14 Any other business

42. Mr. Olivier mentioned that he had been approached informally by the IAEA concerning very preliminary plans for a large international symposium in 1989 on performance assessments of nuclear waste disposal (no title has been set). Mr. Olivier mentioned that the present NEA policy is to concentrate its efforts on smaller workshops on well defined subjects but that he would like the opinion of PAAG on the need for a symposium and the type of NEA involvement in that case. After some discussion, it was concluded that:

- NEA should basically keep to its present principle to mainly organise workshops on specific subjects.
- There is some merit to present results in an area in a broader way from time to time.
- If a symposium on performance assessment is organised in 1989 the NEA and PAAG should get directly involved in the planning and organisation of the meeting.

Item 15. Date of next meeting

43. The next meeting of PAAG is planned to be held in January 1988. A proposal for exact dates will be sent before the Summer.

Appendix 1

2nd MEETING OF THE NEA PERFORMANCE ASSESSMENT ADVISORY GROUP (PAAG)

2EME REUNION DU GROUPE CONSULTATIF DE L'AEN SUR L'EVALUATION DES
PERFORMANCES DES SYSTEMES D'EVACUATION

16th-18th March 1987

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(Secretary: Mrs. Iris De Meyère)

APPENDIX 2

List of documents for second PAAG meeting
16th-18th March 1987

A. DOCUMENTS SENT OUT IN ADVANCE

1. SEN/RWM(86)4 Report on the first meeting of the NEA Performance Assessment Advisory Group, 12th-14th May 1986
2. SEN/RWM(86)6 Summary Record of the RWMC Seventeenth Meeting
3. SEN/ISIRS(86)2 Summary Record of the Sixth Meeting of the Executive Committee, 26th June 1986
4. PAAG/DOC(87)4 Progress in the Development of NEA Thermochemical Data Base (TDB) since the 1st Meeting in May 1986
5. SEN/RWM(86)8 Summary Record of the first meeting of the Advisory Group on In Situ Research and Investigations for Geological Disposal (ISAG), 28th-29th October 1986
6. C.ROCK/DOC(86)2 Summary Record of the Ad Hoc Meeting of Directors of Crystalline Rock Projects, 3rd-4th November 1986
7. EN/S/1600 Circular letter
8. RWM/DOC(86)6 Needs and Priorities for Computer Related Activities in System Performance Assessment
9. PAAG/DOC(87)3 Proposal for a NEA workshop on near-field assessment
10. PAAG/DOC(87)2 Identification and Selection of Scenarios for Performance Assessment of Nuclear Waste Disposal
11. Discussion notes on scenario issues from PAAG members:
 - CEC
 - Finland
 - France (ANDRA)
 - Japan
 - Sweden (SKB + SKI)
 - Switzerland (Nuclear Safety Inspectorate)
 - Switzerland (NAGRA)
 - United Kingdom (BNFL)
 - United Kingdom (NIREX)

B. DOCUMENTS DISIRIBUTED AT THE MEETINGNEA documents

12. PSAC/DOC(87)1 NEA Probabilistic Systems Assessments Codes (PSAC) User Group. Summary Record of the Fourth Meeting held at the Department of the Environment, London 11-14 November 1986.
13. PAAG/DOC(87)5 Proposal for the establishment of a NEA "Geochemistry" group for the NEA Thermochemical Data Base (TDB) project
14. ROOM DOCUMENT No. 1
NEA needs and priorities for Computer-Related Activities in Waste Disposal System Performance Assessments - Responses from Member countries
15. Summary of the oral report on the ISIRS Project (Note by the Secretariat)
16. The Activities, Objectives and Recent Achievements of the NEA Probabilistic Systems Assessment Codes (PSAC) User Group [Paper presented at Waste Management 87', Tucson]
17. Draft Summary of decisions of the 2nd PAAG meeting

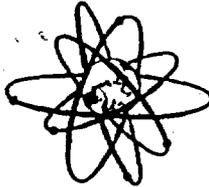
Contributions from participants

18. The Alligator Rivers Analogue Project (Australia)
19. Recent developments in Performance Assessment in Belgium
20. Regulatory objectives, requirements and guidelines for the disposal of radioactive wastes - Long-term aspects (Canada)
21. Recent developments in performance assessment for the Canadian nuclear fuel waste management program (Canada)
22. Development in performance assessment in Germany (Federal Germany)
23. Developments in performance analysis of nuclear waste disposal in Finland between May 1986 and March 1987 (Finland)
24. Main developments in France in the area of performance assessments since the last PAAG meeting (May 1986) (France)
25. Andra's Programme (France)
26. Radioactive waste management policy in Japan
27. A guideline to radionuclide concentrations of low-level radioactive wastes to be disposed of by landfill (Japan)
28. Current schedule of R&D for geological disposal in Japan

29. Handling and final disposal of nuclear waste; SKB R&D Programme 86 (Sweden)
30. Performance assessment in Sweden - Recent developments
31. Notes on the status of repository performance assessment in Switzerland
32. Progress with Radiological Assessments for Nirex in the United Kingdom
33. Recent progress in environmental assessment work relating to low-level waste disposals at Drigg, Cumbria in the UK
34. Progress during 1986/87, UK DOE
35. Notes concerning the use of "scenarios" in post-closure radiological risk assessment, B. Thompson, UK DOE
36. NRC announces intention to revise definition of high-level nuclear waste (USA)

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EN/S/917

17th April, 1987.

To Members of the Committee on the Radiation Protection and
Public Health and of the
Committee on Radioactive Waste Management

Dear Sir,

Exemption of Radiation Sources and Practices from
Regulatory Control ("de minimis" levels)

Please find enclosed document IAEA-TECDOC-401 recently published by the IAEA on the above subject. As stated in the document, it is an interim report, first consisting of general principles for the exemption of radiation sources and practices from regulatory control and, second, of a specific example for the derivation of exempt quantities of low-level radioactive waste for disposal to municipal landfill or by incineration. In the framework of its cooperation with IAEA on this matter, NEA is planning to organise, jointly with the IAEA at the beginning of 1988, a meeting to reexamine the question of exemption rules and their application to concrete cases. For this purpose, it would be extremely beneficial if members of the CRPPH and RWMC could review document TECDOC-401 both from the point of view of the general principles and their application. We would therefore be grateful if you could send us any comments you might have in this respect at your earliest convenience. In addition, the meetings of the RWMC in June and of the CRPPH in November will provide further opportunity to contribute to this discussion.

Thank you for your cooperation in this important matter.

Yours sincerely,

J.-P. Olivier
Head, Radiation Protection and Waste
Management Division

c.c.: National Delegations to the OECD.