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March 15, 1990

Ms. Susan P. Shay
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Richland, WA 99352

Dear Ms. Shay:

FOREIGN TRAVEL TRIP REPORT

Enclosed are three copies of a foreign travel trip report covering travel to France from January 20-26, 1990. The travelers were T.H. Isaacs, P.M. Ferrigan and C.R. Cooley of the Department of Energy, R.E. Browning and H.J. Faulkner of the Nuclear Regulatory Commission, and L.T. Lakey from Pacific Northwest Laboratory. Copies of the report have been distributed as shown on the list accompanying the report.

If there are any questions, please call my office.

Very truly yours,

Don J. Bradley
International Program Support
Office
Waste Technology Center

DJB/aj

Enclosures (3)

cc: T.A. Hedges, DOE-RL/RDD

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FOREIGN TRAVEL REPORT

TRAVEL TO PARIS, FRANCE AND ATTENDANCE AT THE
OECD/NUCLEAR ENERGY AGENCY'S RADIOACTIVE WASTE
MANAGEMENT COMMITTEE (RWMC) MEETING

January 20 - 27, 1990

Prepared by

L.T. Lakey
International Program Support Office (IPSO)
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for

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Y. Onishi

ITINERARY (L.T. Lakey only)

January 20-21 Travel from Richland, Washington to Paris, France

January 22 Meeting preparations with F.J. Goldner at DOE Mission

January 23-24 Participate in meeting of NEA's Radioactive Waste Management Committee (RWMC)

January 25 Prepare draft meeting summary with F.J. Goldner at DOE Mission

January 26 Personal time

January 27 Travel from Paris, France to Richland, Washington

BACKGROUND AND PURPOSE FOR TRAVEL

As a member of the OECD's Nuclear Energy Agency (NEA), the United States participates regularly in meetings of the NEA's Radioactive Waste Management Committee (RWMC), normally held every nine to twelve months in Paris. In addition to providing an opportunity for the U.S. positions to be presented to waste management representatives of other countries, participation in the RWMC meeting gives U.S. personnel an opportunity to assist in planning and reviewing NEA activities in radioactive waste management, and obtaining up-to-date information on waste management programs in other countries. The activities of the RWMC are of particular interest to DOE's Office of Civilian Radioactive Waste Management, to DOE's Office of Environmental Restoration and Waste Management, and to the U.S. Nuclear Regulatory Commission.

L.T. Lakey participated in the meeting to support the U.S. delegation and to obtain current information for use in the foreign nuclear fuel cycle information center operated for the U.S. DOE by Pacific Northwest Laboratory.

SUMMARY OF THE NEA RWMC MEETING

The NEA's Radioactive Waste Management Committee met at OECD/NEA Headquarters in Paris on January 23-24, 1990. The United States' delegation was led by T.H. Isaacs, DOE/OCRWM, and included P.M. Ferrigan of DOE/OCRWM, C.R. Cooley of DOE/EM, R.E. Browning and H.J. Faulkner of the U.S. NRC, and L.T. Lakey, consultant for Pacific Northwest Laboratory.

Continued participation by the United States in the on-going PAAG, GMD, TDB, ARAP, STRIPA and the D&D programs was confirmed by the U.S. delegation. The NEA's plan to disband the ISAG program and replace it with a coordinating group, SEDE (see detailed report for definition), which will concentrate on site evaluation, data collection and experimental design for actual repository sites was approved by the RWMC. Environmental restoration and waste

minimization will be placed on the agenda as a discussion topic for the next RWMC meeting as requested by the U.S. delegation.

The RWMC members had mixed feelings over the NEA's proposed draft document, A Collective Opinion on Performance Assessment. After extensive discussion, the Committee agreed to the publication of two reports -- one which explains the state-of-the-art of performance assessment methods and the other being a brief management summary based upon the first document.

The RWMC reviewed a report of the NEA's Fuel Cycle Committee (FCC) on actinide transmutation and concurred with the FCC's conclusions that research on transmutation was warranted but that the process was not a substitute for geologic disposal of radioactive waste.

Several Committee members spoke highly of the summary descriptions of national waste management programs, a practice that was initiated by the U.S. DOE at an earlier RWMC meeting. Continued preparation of updates to these descriptions was endorsed by the RWMC.

NEA Director-General, Dr. Kunihiro Uematsu, reported on and circulated a summary of a "think tank" meeting he had convened in December for the purpose of obtaining long-term guidance for the NEA's programs. The attendees at the meeting, largely industrial representatives, recommended the placement of emphasis on public acceptance, reactor life extension, decommissioning, an international demonstration of waste disposal, creation of a "waste book" similar to NEA's "Uranium Resources" book, information exchange on the use of MOX fuel, and developing a better public understanding of low-level radiation. These recommendations and those made at the RWMC meeting are to be discussed at a meeting of the NEA's Bureau on February 27-28, 1990.

R. Flowers of the UK was elected Chairman of the RWMC, replacing R. Rometsch of Switzerland. J. LeFevre of France and S. Norrby of Sweden were elected as new Vice-Chairmen.

The country-by-country summaries produced several interesting items of information. *Belgium* will replace the aging waste treatment facilities at Mol with new facilities using supercompaction and low-temperature incineration combined with ash treatment and concrete embedding. *Finland* is building a system for separating cesium from evaporator bottoms at the Loviisa power station. *France* reported that evaluation of four sites for disposal of long-lived wastes is continuing with deep drilling underway at the clay site and preparations for drilling underway at the shale site. The *IAEA* is starting a new coordinated research program on the safety assessment of near-surface waste disposal facilities. The *Netherlands* government, after reviewing a summary of disposal site selection activities, has asked for more generic research before approving site-related studies. *Spain* is constructing a facility for long-term storage of low- and intermediate-level wastes at El Cabril near Cordoba. Operation is expected in 1991. *Sweden's* new plan for R&D on waste management, approved in September, 1989, is concentrated heavily

upon siting a final repository for spent fuel. *Switzerland* is conducting exploration work on four potential disposal sites for low-level waste while the search for a suitable site, either crystalline or sedimentary rock, continues. *United Kingdom* has obtained approval to begin geological investigations near Sellafield and Dounreay for a deep-underground disposal facility for low- and intermediate-level wastes.

The next meeting of the RWMC is scheduled for September 3-4, 1990 in Paris.

COMMITMENTS/FOLLOW-ON ACTIONS FROM THE RWMC MEETING

1. Furnish the NEA Secretariat with recommendations on the NEA's long-range program in the area of radioactive waste management for consideration at a meeting of the NEA's standing committees (CRPPH, RWMC, FCC, CNRA, Steering Committee) to be held in Paris on February 27-28, 1990. (Isaacs)
2. Complete the review of NEA's proposed document, "A Collective Opinion on Safety Assessment," and provide comments to the NEA Secretariat by March 1, 1990. (Isaacs)
3. Provide the NEA Secretariat the names of individuals to represent the United States in the newly formed NEA Coordinating Group on Site Evaluation and Design of Experiments for Radioactive Waste Disposal (SEDE) by February 28, 1990. (Isaacs)
4. Prepare a draft proposal for an RWMC cooperative activity in the area of Environmental Restoration and Waste Minimization. The proposal should be ready for discussion with the NEA Secretariat in July prior to the RWMC meeting scheduled for September 3-4, 1990. (Cooley)

UPCOMING MEETINGS

The following list of future meetings related to radioactive waste management was obtained from the RWMC meeting discussions or handout material:

February 5-9, 1990, Second Meeting of the IAEA's Technical Working Group of Experts on International Transactions Involving Radioactive Wastes, in Vienna.

February 12-16, 1990, Two short courses on use of the EQ3/6 speciation and reaction path code, at the NEA Data Bank, Saclay, France.

February 13-16, 1990, Fifth Meeting of the STRIPA Task Force on Fracture Flow Modelling, in Seattle, Washington.

February 26-28, 1990, Workshop on Hydrologic Testing, at STRIPA in Sweden.

February 27-28, 1990, Meeting of the Bureau of the NEA's Standing Committees (CRPPH, RWMC, FCC, CNRA, CNSI, and Steering Committee), in Paris.

March 5-7, 1990, First Meeting of the Core Group for the newly-formed NEA Coordinating Group on Site Evaluation and Design of Experiments for Radioactive Waste Disposal (SEDE), at Paris, France.

March 7-9, 1990, Eighth Meeting of the STRIPA Task Force on Sealing Materials and Techniques, at Orebro, Sweden.

March 13-15, 1990, Annual Meeting of the STRIPA Technical Sub-Group, at Interlaken, Switzerland.

March 20-21, 1990, Meeting of the NEA Expert Group on Geochemical Modelling and Data (GMD), location to be announced.

March 27-29, 1990, Tenth Meeting of the PSAC User Group, in Madrid.

April 1990, Meeting of the OECD/NEA Steering Committee, in Paris.

May 14-15, 1990, Meeting of the Technetium Expert Team at the NEA Data Bank, Saclay, France.

May 14-17, 1990, GEOVAL-90 Symposium, in Stockholm.

May 17-18, 1990, Meeting of the Americium Expert Team at the NEA Data Bank, Saclay, France.

May 27-31, 1990, International Symposium on Environmental Consequences of Hazardous Waste Disposal, sponsored by Swedish Ministry of the Environment (SSI), in Stockholm.

June 25-26, 1990, Workshop on the International Alligator Rivers Analogue Project, at Harwell, England.

June 28-29, 1990, Meeting of the Joint Technical Committee on the International Alligator Rivers Analogue Project (ARAP), in Paris.

August 27-31, 1990, Thirteenth Meeting of the STRIPA Joint Technical Committee, at Winnipeg, Canada.

September 3-4, 1990, Meeting of the OECD/NEA Radioactive Waste Management Committee, in Paris.

September 17-21, 1990, Annual Review of the CEC Program on Radioactive Waste Management, in Luxembourg.

Mid-September 1990, Sixth Meeting of the NEA Performance Assessment Advisory Group, location to be announced.

September, 1990, Meeting of the Neptunium and Plutonium Expert Teams at Pinawa, Canada.

October 11-12, 1990, Tenth (and last) BIOMOVs Workshop, in Stockholm, Sweden.

October 16-18, 1990, Ninth Meeting of the STRIPA Task Force on Sealing Materials and Techniques, at Winnipeg, Canada.

November 13-15, 1990, Workshop on Repository Sealing Techniques, at STRIPA in Sweden.

November 20-21, 1990, NEA Workshop on the National and International Development of Criteria on Disposal of HLW, in Paris.

SYNOPSIS OF RWMC MEETING

January 23-24, 1990

Background -- Radioactive Waste Management Committee

The Radioactive Waste Management Committee (RWMC) is one of the activities of the Nuclear Energy Agency (NEA) of the OECD of which the United States is a member. The primary functions of the RWMC are to provide a forum for the exchange of technical information among the member countries, to sponsor cooperative studies and to coordinate joint projects. Through the information exchange, the participating countries may participate in the planning of the RWMC-sponsored activities, and may learn which other nations have similar interests, thus paving the way for cooperative actions among smaller groups of countries. The goals of the RWMC are technical, rather than political, and its members are expected to be technical experts. The Committee meets as needed, generally a little more often than once a year.

Major Agenda Items at the RWMC Meeting

An agenda for the meeting is provided in Appendix A-1 and a list of participants is provided in Appendix A-2. The reports and discussions at the meeting fell into four categories: 1) Introduction and General Matters; 2) Performance Assessment Matters; 3) In-Situ Research Matters; and 4) Policy and Other Matters.

Introduction and General Matters

Chairman Rometsch opened the meeting and quickly turned the meeting over to J.P. Olivier of the NEA Secretariat for introductions of delegates new to the meeting. The introductions were followed by NEA Director-General Uematsu's welcoming remarks (Appendix A-3), approval of the proposed agenda, and approval of the minutes of the previous meeting (Appendix A-4).

Agenda Item 4. "Report on the Activities of the OECD and the NEA of Interest to the Committee," completed the introductory topics. For this item, the NEA Secretariat summarized recent activities (Appendix A-5), dwelling heavily upon the establishment of a new committee on regulatory activities and the current review of the NEA's long-term orientations. In October, the NEA Steering Committee established a Committee on Nuclear Regulatory Activities (CNRA). The mandate of CNRA covers the NEA's programs on regulation, licensing and inspection of nuclear installations with regard to safety. It is also to understand the requirements and regulations of member countries so that there are no surprises. This committee takes over, with a broader scope, the functions of the former Sub-Committee on Licensing which was part of the Committee of Nuclear Installations (CNSI).

The Secretariat also described the current review of the Agency's long-term orientations. The last review had been conducted in 1986 and led to high priority being given to nuclear safety, radiation protection and radioactive waste management. Because of important events that have taken place on the international scene, the Steering Committee has initiated a new review of the Agency's plans. The new review is being done in three steps. The first was a two-day "think tank" session involving an informal group of experts selected by the Director General. The second step is the convening of a two-day meeting towards the end of February at which the members Bureau of the Standing Committees would be invited to address the future trends of the Agency. In the third step, the Steering Committee would be invited to endorse at its April meeting the long-term orientations developed by the Secretariat from the input of first two steps.

Performance Assessment Matters

The discussions on several topics related to performance assessment were led by Claes Thegerstrom and Dan Galson of the NEA Secretariat.

Agenda Item 5a. "Report on the Performance Assessment Symposium and the 5th Meeting of the Performance Assessment Advisory Group (PAAG) held 16th-18th October 1989."

The RWMC accepted without comment the subject report (Appendix A-6) as summarized by Thegerstrom (NEA).

Agenda Item 5b. "Detailed Progress Reports on Recently Completed and Ongoing Activities."

Galson (NEA) reviewed recent progress of the NEA Probabilistic System Assessment Code (PSAC) User Group (Appendix A-7), leading to the following discussion.

- Cooley (US) asked if the PSAC scope covered both disruptive and routine events. Galson indicated it covers only routine events at present.
- Cooley (US) asked if the PSAC scope covered both HLW and LLW. Galson replied that the work is applicable equally to HLW and LLW.
- Heremans (Be) commented that the PSAC work may not cover LLW realistically because of the presence of non-nuclear hazardous materials. Galson agreed but noted that PSAC is using simplistic models that cover the issue in a general way and can be adapted to match changing situations.
- Papp (SW) said that the present emphasis with PSAC is on developing methodology and that sub-routines can be added later.

Thegerstrom then provided an oral overview of the PAAG activities on scenario development, emphasizing that the effort will not result in a stock approach. The status of the work will be summarized in the state-of-the-art report on performance assessment to be released this year.

- McCombie (SZ) suggested that an evaluation of the scope of scenarios may be better than simulations so that one or more might be dropped.
- Isaacs (US) encouraged a focus on development of methodology rather than analysis of specific scenarios.

Thegerstrom then summarized the results of the "NEA Workshop on Assessment of the Risks Associated with Human Intrusion at Radioactive Waste Disposal Sites," held in Paris on June 5-7, 1989 (Appendix A-8).

- Norrby (SW) asked if any thought had been given to reducing the paperwork required in the studies. Thegerstrom replied in the negative.
- Isaacs (US) observed that specific answers cannot be expected and therefore the industry must evaluate probabilities.

Thegerstrom then gave oral reports on the status of the Alligator Rivers Analogue Project and the INTRAVAL effort. No comments were offered by the RWMC members on either activity.

Galson reminded the RWMC members of the upcoming GEOVAL-90 symposium to be held May 14-17, 1990 at Stockholm, Sweden. The symposium is co-sponsored by the PAAG and ISAG and is supported by Sweden's SKI.

Thegerstrom briefly described plans for upcoming workshops (dates not given) sponsored by the PAAG. One will be on Sorption Data and Modelling; the other will be on Gas Release and Modelling. Snihs (SW) then reminded the RWMC members of the Swedish proposal (Appendix A-9) for a RWMC/CRPPH workshop approaches for developing Long-Term Radiation Protection and Other Criteria for Waste Disposal. The review of workshop plans brought forth the following comments:

- Bragg (CA) recommended that the workshop on waste disposal criteria focus on practical aspects.
- Snihs (SW) supported this recommendation.
- Neiderer (SZ) recommended that radiation protection be dropped from the scope and suggested that the workshop organizers examine the report recently released by Switzerland on criteria.
- Lambotte (BE) asked whether the workshop was to address actual criteria or the methodology in developing criteria.

Rometsch closed the discussion on proposed workshops matters by noting there appeared to be general approval for the proposed activities.

Agenda Item 5c. "Discussion of a Proposal for a RWMC Collective Opinion on Performance Assessment."

Thegerstrom (NEA) reviewed the drafts of a report, "Collective Opinion on Safety Assessment," proposed by the PAAG (Appendices A-10 and A-11). The review elicited extensive comments from the RWMC members:

- Cornelissen (NL) commented that the report was too long and was not geared for the public, but for persons involved in performance assessment.
- Olivier (NEA) replied that the report was requested by the RWMC Bureau.
- LeFevre (FR) commented that the report was too short for technical readers, and too long for the public. He also observed that it contained no conclusions.
- Isaacs (US) commented that performance assessment is an essential tool to help determine the acceptability of a site. He also suggested that the data needs are defined by performance assessment.
- Rometsch (SZ) said the report should assess methodology, not safety.
- Rothemeyer (FRG) stressed the need to compare the desired predictions with predictive capabilities.
- Lummerzheim (FRG) stated that the draft does not satisfy the need for such a report and that the need still exists.
- Saire (IAEA) supports the effort to issue a collective opinion document on performance assessment. He felt that the report is too difficult to read and needs a summary.
- McCombie (SZ) stated that the question to be answered is how do we judge safety? He added that the present draft discusses methods used but provides no message on judging safety.
- Orłowski (CEC) stated that the report needs to be revised and shortened. He is not in a position to say whether or not the CEC will support the document.
- Neiderer (SZ) feels the document could be valuable but needs to be rewritten.

- Cooley (US) believes the document should be rewritten to reach the "lay" audience and should focus on all wastes.
- Rometsch (SZ) commented that remarks to this point are leading toward three documents: 1) a technical discussion; 2) a short summary; and 3) a list of conclusions.
- Moore (AS) believes the draft is too long for the intended audience.
- McCombie (SZ) suggested re-editing the document.
- Isaacs (US) supported McCombie and indicated that comments from the U.S. DOE will be furnished to the NEA Secretariat by March 1, 1990.
- Bragg (CA) noted that a clear objective must be agreed upon before starting on the re-editing.
- Neiderer (SZ) supported Bragg.
- DeJonghe (BE) recommended a short document that says what is performance assessment, tells what it will provide, and gives the current status of development.
- Isaacs (US) believes one document is all right.
- LeFevre (FR) recommended that the draft be rewritten for the layman, and should include a political summary. It should also describe what has been done since the earlier consensus document was released in 1985.
- Torgerson (CA) asked if the PAAG had seen the document. Thegerstrom replied in the affirmative.
- Cooley (US) recommended that work continue and that the "collective opinion" report should be issued after the "state-of-the-art" report is published.

Rometsch closed the discussion on the proposed Consensus Opinion on Performance Assessment document by noting that there is a need for two documents -- a technical state-of-the-art report and a summary -- and that any additional comments should be provided by the middle of February for consideration by the Bureau at their meeting February 27-28, 1990.

Agenda Item 5d. "Progress of Work in the Area of Geochemical Modelling and Data."

Wanner (NEA) briefly discussed the Thermochemical Data Base (TDB) program, (Appendices A-6, A-12, and A-13) eliciting the following comments from the RWMC members.

- Papp (SW) stressed the importance of the TDB effort and indicated his satisfaction with the results.
- Alder (SZ) asked for more consultation between the user and the TDB on organic complexes. Olivier (NEA) indicated that such consultation can be set up anytime.
- Cooley (US) recommended finishing the current work before moving to organic complexes.

Wanner (NEA) then reviewed work on the Sorption Data Base (SDB Project) (Appendix A-13) and received no comments from the RWMC members.

Olivier (NEA) brought up the topic of disbanding the NEA's Expert Group on Geochemical Modelling and Data (GMD) and received no negative comments from the RWMC members. (Appendix A-6)

- Rothemeyer (FRG) concurred in the move.
- Neiderer (SZ) also supported the move.
- Isaacs (US) expressed a desire that the group prioritize input on future work and make the information known before disbanding.

Rometsch (SZ) accepted the members' comments as indicating approval of the plan to disband the GMD.

In Situ Research Matters

Agenda Item 6. "Review of the Programme of Work."

Galson (NEA) briefly described three programs under the purview of the NEA's Advisory Group on In Situ Research and Investigations for Geological Disposal (ISAG). He covered three topics: 1) Report from the 4th Meeting of ISAG (Appendix A-14); 2) the proposed replacement of ISAG with a new group (Appendix A-15); and the STRIPA program (Appendix A-15). Only the proposed dismantling of ISAG and creation of the new group were commented upon by the RWMC members. The new group, called the Coordinating Group on Site Evaluation and Design of Experiments for Radioactive Waste Disposal (CEDE), will concentrate on actual repository sites, leaving underground research laboratories under the purview of PAAG.

Galson asked that the RWMC members approve the experts recommended by the NEA as a "Core Group" to start the new effort and to nominate working members of the new "Co-ordinating Group."

- Bragg (CA) asked how the repository design will be addressed by the new group.

- Heremans (BE) suggested that the Core Group represent other geologic media. Galson (NEA) replied that the Co-ordinating Group will require people representing all media and that they should represent actual site investigations, not URL work.
- McCombie (SZ) stated that the Core Group should represent disciplines, not media.
- Barbreau (FR) observed that the changing mission for ISAG indicates the NEA is not sure of its mission. The proposed change will mean a loss of first-generation background. Galson (NEA) said the point was valid but that the intent was to shift focus, not ignore first generation knowledge.
- Rothemeyer (FRG) wants to assign two persons, one from R&D and one from licensing, to the Co-ordinating Group. They also want a representative on the Core Group.
- DeJonghe (BE) noted that discipline requirements vary with the media and that salt and clay should be represented in the group.
- Norrby (SW) asked that two Swedes be assigned to the Co-ordinating Group, one from operations and one from licensing.
- Bragg (CA) stated that isolation of the group from PAAG is a step in the wrong direction. Galson (NEA) indicated there is no intent to avoid coordination of SEDE and PAAG, only clarify scopes.
- Galson (NEA) then explained to the members that the members of the Core Group are really consultants to the NEA and serve only to guide and help organize the new Co-ordinating Group. Country representatives will be assigned to the Co-ordinating Group.
- Feates (UK) supports the change.
- Cooley (US) asked that the scope be defined better to focus on developing sites.
- LeFevre (FR) recommended that the Secretariat drop the words "Core Group" as it is misleading the RWMC members. He suggested the Secretariat ask for specialists' help without going to the RWMC.
- Olivier (NEA) said that the members of the Core Group must be funded by the member countries and that is why the topic was introduced at the RWMC meeting.

Rometsch closed the discussions on In Situ Research Matters by noting the membership is generally in favor of the proposed change, that the NEA Secretariat has need for expert consultants and that the Secretariat should proceed to implement the change.

Other Matters and Policy Issues

Agenda Item 7. "NEA's Activities in the Area of Separation and Transmutation of Actinides.

Stevens (NEA Fuel Cycle Committee) reviewed the activities of the NEA's Fuel Cycle Committee in the area of separation and transmutation of actinides (Appendix A-16), leading to the following comments by the RWMC members:

- Alder (SZ) emphasized that "we must understand that transmutation is not a substitute for geologic disposal."
- LeFevre (FR), a member of the FCC, observed that all delegates to the recent FCC meeting stressed that "we cannot hope that transmutation will substitute for geologic disposal." He also indicated that the FCC will release an evaluation on transmutation within a few months.
- Feates (UK) supported LeFevre's statements, adding that "the United Kingdom has no interest in transmutation as a substitute for waste disposal."
- Rothemeyer (FRG) stated that "transmutation is not foreseen to be pursued in the FRG for waste disposal."
- Melches (SP) supported the remarks of previous speakers, saying, "transmutation is not a substitute for geologic disposal."
- Isaacs (US) stated "there is vital interest in this area and we should be involved in research. The United States supports Mr. LeFevre's comments."

Agenda Item 8. Decommissioning: Progress within the International Programme on Information Exchange.

Ilari (NEA) reviewed recent NEA activities in this area (Appendix A-17) and received no comments from the RWMC members.

Agenda Item 9. Co-ordinated Research and Environmental Surveillance Programme (CRESP).

Olivier (NEA) received no comments on his summary of this activity.

Agenda Item 10. Status Reports on National Waste Management Programmes.

Rometsch polled the RWMC members for comments on and the status of these reports, which were initiated at a U.S. DOE recommendation in 1988 (Appendix A-19).

- Belgium: report done but not distributed.
- Canada: report is in preparation.
- Finland: distributed at meeting (Appendix A-27)
- France: no report but will submit later.
- FRG: report is not complete.
- Japan: distributed at meeting (Appendix A-31)
- Netherlands: distributed at meeting (Appendix A-32)
- Spain: distributed at meeting (Appendix A-34)
- Sweden: distributed at meeting (Appendix A-35)
- Switzerland: distributed at meeting (Appendix A-36)
- United Kingdom: distributed at meeting (Appendix A-37)
- United States: distributed at the meeting (Appendix A-38)

Future Programme of Work and Long-Term Orientations

Agenda Item 11. Final Discussions on the Programme of Work of the RWMC and Future Trends.

Two topics, led by Olivier (NEA), were covered under this agenda item. One was consideration of the present programme (Appendix A-20) emphasizing the activities of the PAAG, ISAG, and PSAC. Cooley (US) described the new direction being taken by the U.S. DOE's new programme on Environmental Restoration and Waste Management. He proposed that the RWMC consider these areas as topics for study in the future. Comments made by the RWMC members include:

- LeFevre (FR) supports Cooley's proposal.
- DeJonghe (BE) also concurred with Cooley's proposal, saying that while not necessarily a high priority topic, it brings in new aspects that should be considered.

- Cornelissen (NL) asked why the RWMC had not been studying these topics earlier. Olivier (NEA) replied that the present emphasis on repository disposal was the result of an earlier prioritization, budget limitations and the recognition that both the IAEA and CEC are active in the areas.

The second topic covered under this agenda item was the planning activities underway within the NEA on Long-Term Orientations in the Field of Radioactive Waste Management. The NEA's Director General, Kunihiko Uematsu, led this part of the discussion (Appendix A-5).

In his remarks, Uematsu reported on and circulated a summary of a "think tank" meeting he had organized in December (Appendix A-21). The attendee list was interesting in the heavy participation of non-governmental interests (ANSALDO of Italy, SKB of Sweden, AECL, British Nuclear Forum, Framatome of France, Japan's AEC, GE Nuclear Energy, Belgonucleaire of Belgium, Chubu Electric Company of Japan) and independent consultants in the U.S. (NUS Corporation, ERC-Environmental and Energy Services Co., IEAL Energy Consultants). Their recommendations for long-range program emphasis included improving public relations, extending reactor life, decommissioning, an international demonstration of waste disposal, creation of a "waste book" similar to the NEA's Uranium Resources book, expanded information exchange on MOX fuel experience, and improving public understanding of low-level radiation.

The recommendations made by the "think tank" together with suggestions received at the RWMC meeting for long-range emphasis are to be discussed at a meeting of the Bureau of NEA's standing committees (RWMC, CRPPH, FCC, CNSI, CRNE, and Steering Committee) on February 27-28, 1990. The results of this meeting will be presented at the next meeting of the Steering Committee, scheduled for April 19, 1990 in Paris. RWMC members were invited to provide the NEA Secretariat with additional topics/suggestions for consideration at the meeting of the Bureau.

The following discussion took place after Uematsu's presentation:

- Norrby (SW) noted that there appeared to be no regulatory presence in the planning activities. Uematsu replied it was difficult to find experience in the regulatory area.
- LeFevre (FR) recommended that the programs stick to the nuclear/chemical area. Inclusion of the hazardous materials could be detrimental to the programs.
- Cooley (US) asked how individual countries could provide input to the planning exercises. Uematsu replied that input should be supplied through the Bureau of the Standing Committees.

- Rometsch (SZ) indicated that members input should be provided through the RWMC Bureau.
- Cooley (US) recommended inclusion of environmental restoration and waste minimization in the program.
- DeJonghe (BE) stressed that goals should be set in the planning and the extent of the programs should be defined.
- Cornelissen (NL) asked what wastes were covered by the scope of the RWMC. Rometsch replied that the RWMC covers all radioactive waste.

Agenda Item 12. Presentation of National and International Activities.

Handout material provided by several countries on their current waste management activities is provided in Appendices A-22 through A-38. A summary of highlights mentioned by the RWMC members at the meeting follows:

Australia: The Joint Technical Council for the Alligator Rivers Analogue Project has approved an extension of the effort to 1992. Four Australian mining companies are cooperating with ANSTO and the Australian National University to evaluate the commercial future of the SYNROC HLW solidification process. The Australian government is considering a proposal to establish a low-level radioactive waste repository in the Northern Territory.

Belgium: Belgium's national plan for radioactive waste management, developed in 1987, has been fully implemented. Key activities of ONDRAF/NIRAS, the responsible organization, include:

- 1) an extensive overview of the Belgian research on disposal of high-level radioactive waste will be transmitted to the government in January or February, 1990.
- 2) A storage building of modular design and equipped with remotely controlled handling devices will provide storage space for low-level waste at the Mol site through 1993.
- 3) Conceptual design of a remotely-operated storage facility for high-level waste to be returned to Mol from La Hague is complete and construction will start in 1990. Operation is expected to begin in 1993.

- 4) The waste treatment facilities transferred from CEN/SCK to ONDRAF/NIRAS will be replaced with new facilities using supercompaction and low-temperature incineration combined with ash treatment and concrete embedding.
- 5) Alpha-contaminated low-level waste will be stored in a specially designed building awaiting treatment and conditioning.
- 6) Studies on disposal of low-level radioactive waste are continuing. The possible use of abandoned underground excavations and mines has been eliminated for economic and safety reasons.
- 7) In-situ tests at the Mol URL in clay are continuing.
- 8) The mission of ONDRAF/NIRAS has been extended to cover foreign nuclear waste on Belgian territory and to decommissioning.

Canada: Four power reactors are under construction and the government's review of the proposed disposal concept for the disposal of high-level waste has been started.

CEC: The Third Five-Year Program on Radioactive Waste Management will be reviewed September 17-21, 1990 in Luxembourg.

Federal Republic of Germany: On November 1, 1989, the responsibility for radioactive waste management was transferred to the Agency for Radiation Protection at Saltzgitter. The demise of the Wackersdorf reprocessing plant is delaying public review of repository development.

Finland: Excavation of the repository for low- and intermediate-level wastes at Olkiluoto were completed in August 1989. The repository will be commissioned in 1992. Evaluation of five candidate sites for disposal of spent fuel is continuing. A system for separation of cesium from evaporator bottoms will be constructed at the Loviisa power station in 1990.

France: Construction of France's second disposal facility for low-level waste is underway with operation expected to begin in the summer of 1991. Site evaluation of four preselected sites for disposal of long-lived radioactive wastes is continuing with deep drilling underway in the clay site and drilling preparations underway at the shale site.

IAEA: To assist developing Member States with problems faced in the handling, processing and storage of low- and intermediate-level radioactive waste, the IAEA is pursuing a new mechanism of co-operation. By the end of the year, the IAEA will be in a position to make available to Member States a reference design package of a centralized Waste Processing and Storage Facility (WPSF). This design package should permit a Member State to proceed directly into the construction of a centralized WPSF for wastes

that are normally generated from research and nuclear materials applications.

In 1990, the IAEA will start a new co-ordinated research program on the safety assessment of near-surface waste disposal facilities. Cooperation with the NEA performance assessment programs is an important part of the effort to avoid unnecessary repetition.

The first product from the IAEA's Data Base Programme will be a document, "Status and Trends of Waste Management in Select Member States" scheduled for publication in the first half of 1990.

Japan: A summary of Japan's R&D programme on geologic disposal of high-level radioactive waste, prepared for the Advisory Committee on Radioactive Waste Management, was distributed at the RWMC meeting. The summary emphasized the importance of near-field performance and need to give priority to this area.

Netherlands: In September 1989, COVRA submitted a license application for a central facility for treatment and storage of radioactive waste near the Borssele power station.

A report on the first stage of the R&D program aimed at selection of geologic sites for final disposal of radioactive waste was published in June 1989. A review of the report by an expert group concluded that more research is needed before proceeding to the second stage -- preliminary field research near potential sites.

Norway: In October 1989, the Ministry of Petroleum and Energy appointed a seven-person committee to prepare a report on the production and disposal of radioactive wastes in Norway. The present storage facility for low- and intermediate-level wastes will be filled in four years.

Portugal is only concerned with institutional, industrial and mining radioactive wastes and has not established a management organization for them.

Spain: Low- and intermediate-level wastes are being temporarily stored at the producers' sites and in the operating storage facility of El Cabril near Cordoba. A license for a long-term storage facility at El Cabril was granted October 31, 1989 and construction is underway. Completion is scheduled for 1991.

Spent fuel is currently being stored in reactor pools and reprocessing is not planned. Sufficient interim storage capacity is required to allow 40 years' accumulation before final disposal in a deep geologic repository. The selection of several potential sites for a repository is projected for the year 2000 and operation is expected around the second decade of the next century.

Sweden: In September 1989, SKB submitted a revised plan to the government for R&D on the management and disposal of radioactive wastes in Sweden. The new plan concentrates heavily on siting of a final repository for spent fuel. Three sites will be identified early in 1992. Two are expected to be approved for underground investigations by 1995; submittal of a license application is planned for 2003 and construction would start in 2010.

Switzerland: The community of Wurenlingen voted to accept a centralized storage facility for radioactive wastes, including reactor wastes, HLW and TRU from reprocessing, and dry storage of spent fuel. An official company is being formed to build and operate the facility and the local community will receive compensation from the company.

Evaluation of four geologic sites for disposal of low-level wastes is continuing. At two sites, surface exploration has been completed. Exploration at the third site is proceeding under police protection while permission has been granted for the first phase of tunneling at the fourth site.

The seventh deep borehole has been completed in the search for a crystalline site for disposal of high-level wastes. In an effort parallel to the crystalline programme, a formal report on two sedimentary alternatives had been submitted to the government at the end of 1989. Field work in one of sediments will begin in 1990.

United Kingdom: Near-surface disposal facilities for low-level waste are operated at Drigg and Dounreay. Use of these facilities will continue until they are full. NIREX has started examining the deep-underground disposal option for low-and intermediate-level wastes and has obtained approval to begin geological investigations at sites near Sellafield and Dounreay.

No specific concepts have been developed for disposal of high-level waste. It is current UK policy that high-level waste from reprocessing will be stored 50 years when a decision on an appropriate disposal method will be made. The 50 year period will start from the commissioning of the thermal oxide fuel reprocessing plant (THORP) around 1992.

Radioactive wastes are now considered part of hazardous wastes from a regulatory standpoint.

United States: Isaacs, DOE/RW, mentioned the impending nomination of a new Director for OCRWM, slippage of the repository operating date to 2010, and the upcoming court case between the U.S. DOE and the State of Nevada.

Cooley (DOE/EM, indicated that 10% of the federal money being spent on waste management is going toward R&D, that the defense sites are now subject to EPA overview and then described the new Five-Year Plan on Environmental Restoration and Waste Management.

Browning, NRC/NMSS, described the new Center for Nuclear Regulatory Studies now operating in the United States and suggested that RWMC members wishing to learn more of the studies contact the Center directly.

Agenda Item 13. Nuclear Waste Bulletin.

Galson (NEA) will distribute a letter to RWMC members soliciting input by March 9th to the May issue of the Nuclear Waste Bulletin.

Agenda Item 14. Election of the Bureau.

The RWMC members elected a new chairman and two new vice-chairmen.

Dejonghe (BE) nominated Ron Flowers of the UKAEA Technology as chairman. Isaacs (US) seconded the Flowers nomination and nominated S. Norrby, SW/SKI, and J. LeFevre, FR/CEA, as vice-chairmen. Rothemeyer (FRG) seconded the nominations for vice-chairmen and the RWMC members elected the new officers by acclamation. Stadio of the NEA expressed the RWMC members thanks to R. Rometsch of SZ/NAGRA for his dedication to the RWMC and other international activities in radioactive waste management. Rometsch will remain on the Bureau as past-chairman of the RWMC.

Agenda Item 15. Date of the Next Meeting.

The members approved the date of September 3-4, 1990 for the next meeting of the RWMC as recommended by Olivier (NEA).

Agenda Item 16. Any Other Business.

No other business was brought up and Rometsch adjourned the meeting at 16:30.

APPENDICES

Note: Due to the bulkiness of the material, copies have not been included with the travel report but may be obtained by calling L.T. Lakey, 509-376-5731 (FTS 444-5731).

- A-1 - AGENDA [SEN/RWM(89)6] for RWMC Meeting
- A-2 - List of Participants at NEA RWMC Meeting
- A-3 - Introductory Remarks by the Director General
- A-4 - Summary Record of the Twentieth Session of the RWMC held in Paris on January 24-25, 1989 [SEN/RWM(89)1]
- A-5 - Report on the Activities of the OECD and NEA of interest to the Committee [SEN/RWM(89)8]
- A-6 - Report from the Fifth Meeting of the NEA Performance Assessment Advisory Group (PAAG), Paris, October 16-18, 1989. [SEN/RWM(89)7]
- A-7 - Summary Record of the Ninth Meeting of the NEA Probabilistic System Assessment Code (PSAC) User Group, Albuquerque, July 18-20, 1989. [PSAC/DOC(89)3]
- A-8 - Summary and Conclusions of the NEA Workshop on Assessment of the Risks Associated with Human Intrusion at Radioactive Waste Disposal Sites, Paris, June 5-7, 1989. [PAAG/DOC(89)2]
- A-9 - Swedish Proposal for the Organization of a Workshop on Radiation Protection and Other Criteria for the Disposal of Radioactive Waste. [RWM/DOC(89)6]
- A-10 - RWMC Collective Opinion on Safety Assessment, dated December 21, 1989 [RWM/DOC(89)1]
- A-11 - Report Reviewing Safety Assessment Methodologies, dated January 19, 1990. [RWM/DOC(90)1]
- A-12 - Progress Report on the Thermodynamic Data Base (TDB). [RWM/DOC(89)7]
- A-13 - Summary Record of the Second Meeting of the Expert Group on Geochemical Modelling and Data, Paris, 18th-19th April, 1989, [SEN/GEO(89)2]
- A-14 - Summary Record of the Fourth Meeting of the NEA Advisory Group on In-Situ Research and Investigations for Geological Disposal (ISAG), Paris, May 29-31, 1989. [SEN/RWM(89)3]

- A-15 - Proposal to Disband the NEA Advisory Group on In Situ Research and Investigations for Geological Disposal (ISAG) and to Create an NEA Co-ordinating Group on Site Evaluation and Design of Experiments for Radioactive waste Disposal (CEDE). [RWM/DOC(89)2]**
- A-16 - Progress Report on the International Stripa Project [RWM/DOC(89)3]**
- A-17 - NEA Activities in the Area of Separation and Transmutation of Actinides. [RWM/DOC(89)4]**
- A-18 - Third Annual report of the Co-operative Programme on Decommissioning. [CPD/DOC(89)4]**
- A-19 - Status Reports on National Waste Management Programmes [EN/S/2354]**
- A-20 - Short-Term Programme of Work and Long-Term Orientations. [RWM/DOC(89)5]**
- A-21 - Summary Record of the Think Tank Meeting to review the NEA Long Term Orientations, Paris, December 11, 1989.**

Presentations of National and International Activities

- A-22 - Contribution from Australia**
- A-23 - Nuclear Waste Management in Belgium: Progress Report.**
- A-24 - Recent Waste Management Developments in the CEC.**
- A-25 - Recent Regulatory Activities in Finland in the Waste Management Field.**
- A-26 - Waste Management Research in Finland.**
- A-27 - Radioactive Waste Management Activities in Finland (Status Overview)**
- A-28 - Recent Developments in Radioactive Waste Management in France.**
- A-29 - Items from the IAEA Programme on Radioactive Waste Management - 1989.**
- A-30 - Nuclear Waste Management: Japan.**
- A-31 - Major Targets and Methods of Implementation in Research and Development for the Geological Disposal of High Level Waste: Japan AEC. (Status Overview)**
- A-32 - Recent Developments: Netherlands. (Status Overview)**
- A-33 - Recent Developments in Norway.**

- A-34 - Radioactive Waste Management in Spain. (Status Overview)**
- A-35 - Nuclear Waste Issues in Sweden.**
- A-36 - Status of Waste Management in Switzerland - December 1989.**
- A-37 - Status report on United Kingdom Radioactive Waste Disposal Programmes: Second Edition (Status Overview)**
- A-38 - United States Radioactive Waste Management Programs in 1990. (Status Overview)**