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FOREIGN TRIP REPORT

FRENCH COMMISSION FOR ATOMIC ENERGY (CEA)

AND

ORGANIZATION FOR ECONOMIC AND COOPERATIVE DEVELOPMENT/NUCLEAR
ENERGY

AND

COMMISSION OF EUROPEAN COMMUNITIES

PREPARED BY

CARL R. COOLEY

OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT

DEPARTMENT OF ENERGY

FOR

U.S. DELEGATION: T. ISAACS AND C. R. COOLEY

BB137366
WM Projects: MH-
PDR yes
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WM Record File: 412.2
LPDR yes

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Docket No. _____
PDR _____
LPDR _____

Distribution:
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PDR WASTE
412.2 PDR

FOREIGN TRIP REPORT SUMMARY

Traveler: Carl R. Cooley, OCRWM International Coordinator

Organization: OCRWM/OPO

Date of Trip Report: November 13, 1987

Destinations:

10/26/87, The French Commission for Atomic Energy (CEA), Paris, France.

10/27-28/87, Organization for Economic and Cooperative Development/Nuclear Energy Agency (OECD/NEA), Paris, France

10/29/87, Commission of European Communities (CEC), Brussels, Belgium.

Purpose:

The purpose of this trip was three fold, 1) to meet with CEA Officials to discuss current status and future plans for radioactive management programs, under the USDOE/CEA bilateral agreement; 2) to participate in the NEA Consultants Group on the preparation of a document describing national radioactive waste programs; 3) to meet with CEC Officials to discuss renewal of the existing bilateral agreement, areas of potential technology exchange, and the status of respective programs.

Benefits:

Discussions with CEA provided the basis for future cooperation with CEA/ANDRA. Participation in the Consultants Group for OECD/NEA obtained agreement that OCRWM will receive descriptions of waste management programs prepared by other countries and that a proposed set of country descriptions will be available at the next Radioactive Waste Management Committee meeting. Discussions with CEC completed the periodic review as required by the bilateral agreement with CEC.

Summary of Trip Report:

The meeting with CEA Officials confirmed that the CEA is satisfied with the current level of technology exchange, but closer communication on current program policy and activities would enhance exchange. CEA is also open to new areas of exchange in the future. The Gougel report, which will outline the basis for the CEA/ANDRA disposal program will be published and distributed soon. P. Jourde was named as the principal coordinator for the CEA to replace A. Sugier. CEA requested information on site characterization costs. Cooley agreed to contact Defense Programs on the ORNL personnel attachment agreement.

The participants at the OECD/NEA Consultants Group agreed to prepare a descriptive document of waste management programs and submit drafts by 1/15/87 of respective national programs according to the NEA annotated outline. The group considered the need to meet in February but decided to await receipt of each others drafts before deciding on a meeting. There was a consensus of the value of pursuing and maintaining program descriptions. The Consultants' Group agreed to prepare a set of their country descriptions for the next RWMC meeting. Other countries would be asked to prepare similar descriptions.

During the meeting with CEC Officials, CEC's five-year R&D program and renewal of the USDOE/CEC bilateral agreement were discussed. CEC was agreeable to maintain current levels of technology exchange but suggested opportunities for future exchange through potential technical meetings and conferences. A draft meeting record was prepared for future signature by the Principal Coordinators of the agreement.

Commitments:

1. Talk to Mr. Niger, CEA during his visit to the U.S. on November 19, 1987.
2. Send CEA information on site characterization costs.
3. Prepare a description of the DOE waste management programs and provide a copy to the NEA Consultants Group and to OECD/NEA by January 15, 1988.
4. Determine if DOE will sponsor or host technical meetings with CEC in 1988.
5. CEA will send a copy of the Goguel report.

Cost per traveler:

Travel and Subsistence:	\$ 2500
Preparation & reporting:	\$500
Total	\$ <u>3000</u>

Recommendation:

A technical exchange meeting should be planned with the French during 1988. More frequent discussions with Leferve is advisable. OCRWM should complete preparations of the description of the U.S. program and provide it to NEA by January 15, 1988. Co-sponsoring at least one of the CEC suggested meetings appears worthwhile.

MEETING WITH FRENCH ATOMIC ENERGY COMMISSION OCTOBER 6, 1987
PARIS, FRANCE, CEA HEADQUARTERS

PARTICIPANTS: Mr. Lefevre, Mr. Jourde, Ms. Sugier, Ms. Kinsky, Mr. Niger from CEA and T. Issacs and C. Cooley, USDOE/OCRWM.

Summary:

1. T. Isaacs described the OCRWM program and the pending legislation which may affect the second repository program. Methods for future communication on program decisions were discussed, possibly a meeting to exchange views and statements on each others waste management programs. CEA had some preference for a possible future meeting at the director level. Mr. Lefevre felt that the European Community meetings kept him well informed on European Countries. (However, Lefevre was not as informed about the U.S. program since the U.S. does not participate in these meetings).
2. CEA is continuing to investigate four potential repository sites. They are experiencing the most institutional difficulty with the proposed granite site near Heavy Bouin. Although CEA has the legal right to investigate the site, they are experiencing opposition through public demonstrations. No work has yet begun at the granite site.
3. Mr. Moronville has replaced Mr. Chatoux, as the new Director of ANDRA.
4. The "Gougel Report" was submitted in July 1987 to the Ministry for its endorsement of the CEA/ANDRA disposal program. CEA expects that the report will be available for publication in two-three weeks. We will receive a copy (in French). According to Lefevre there are no big surprises in the report but, some statements may have an impact on other programs such as the SZ/NAGRA and F.R.G/BMFT programs.
5. CEA has not yet considered the basis for compensation to regional/local authorities for a HLW repository site, though they have already done so for LLW sites. Thirty million FF was provided as a lump sum for the LLW surface facilities. One million FF/yr will be paid as continuing compensation for each LLW site. CEA has, so far, committed to spending 200 million FF/yr for the four HLW sites currently under investigation.
6. On costs for characterization of the sites, CEA stated that they do not have estimates which they are willing to quote. They expect to have some data available from ANDRA in another year or so.

7. The status of the USDOE/CEA bilateral agreement was reviewed. There is general agreement that we could continue to operate under the present "umbrella" agreement for the exchange of R & D information. The mechanism for implementing agreements can be used if there are some specific services involving application of technology. For the time being, both parties expressed satisfaction with the present agreement and saw no need for further implementing agreements related to the OCRWM program.
8. Considerable concern was expressed by CEA on the proposed personnel assignment agreement being arranged through ORNL. CEA was advised that the matter would be referred to J. Dieckhoner in Defense Programs.
9. Mr. Pierre Jourde, Assistant to the Director, Radioactive Waste, was designated by Mr. Lefevre as the Principle Coordinator for the USDOE/FR CEA bilateral agreement, replacing A. Sugier. Ms. Kinsky will continue to handle professional society arrangements, e.g. ENS. CEA was advised that Dieckhoner remains as the U.S. Principle Coordinator for the agreement. Carl Cooley is the contact for items specific to the Civilian SF/HLW disposal program.
10. In reference to the NEA's request to prepare a description of National Waste Management programs, Mr. Lefevre expressed his preference to meet and discuss rationale rather than having it in writing as proposed by NEA.

OECD/NEA CONSULTANTS GROUP ON PREPARATION OF A DOCUMENT ON THE
STATUS OF NATIONAL PROGRAMS ON GEOLOGICAL DISPOSAL

PARIS, FRANCE -- OCTOBER 27, 1987

Participants: Mr. J. Lefevre, CEA; Mr. H. Geipel, BMFT; Mr. N. Rydell, SKN; Mr. E. Kowalski, NAGRA, Mr. J. Oliver, NEA; Mr. L. Chamney, NEA; Mr. T. Isaacs, USDOE and Mr. C. Cooley, USDOE.

Summary:

1. Preparation of a descriptive document on Waste Management, along the lines of the U.S. supplied outline and the example of the Sweden program, was generally adopted by the group.
2. The group made the following comments:
 - keeping the descriptive document restricted to NEA member's use is preferred.
 - care should be taken to assure that only appropriate information is included on a program.
 - because all of the information on a program cannot be discussed in the document, additional administrative information should be provided through a periodic ad hoc meeting of interested directors. (perhaps once a year)
 - the public information fact sheet proposed by NEA should proceed independently of the program description documents.
 - at present, communication should continue to occur through existing coordinators and/or directors, particularly for news breaking items like the Goreleben incident.
 - the descriptive document should include all waste types, i.e. LLW, MLW/ILW, and HLW and/or spent fuel.
 - a loose leaf format should be used to accomodate periodic changes.
 - public information/participation activities should be included in the document.
 - all NEA member countries should be given the choice to contribute to the document.
 - regulatory requirements should be included in the descriptive document.

- a description of a repository should be attached or included in the document.
- Draft documents from FR, SZ, SW, US should be prepared by January 15, 1988 so that the information can be discussed at the RWMC meeting in late March.
- for site selection, standardized comparisons provides information on the suitability of a site. (i.e. A suitable site was preferred rather than "best".)
- organizational structure should be included by each country.
- the section on systems costs should be deleted and combined into a section on systems costs and funding. This section should also include a description of where or how funds are kept.
- the section on QA and Safety Considerations should be left optional for each country.

3. Several advantages of having the proposed document were emphasized:

- its an opportunity to help build a better image of waste management and disposal.
- considerable knowledge will be obtained by those preparing the report.
- having the facts available will provide a basis for explaining the rationale for national programs.
- information will be valuable for use in each other's program.

Other comments included:

- the URL in Spain next to the Portugal border has been cancelled.
- the "regulators" meeting has been postponed until next Spring.

- 4. The need for a meeting on SW, GE, SZ, FR and US contribution, will be determined after drafts are received.
- 5. The use of consultants' group and/or member countries to provide consensus statements (e.g. the desirability of deep

geologic disposal, the objective of identifying suitable sites rather than the "best" site, the adequacy of several rock types for disposal) should continue.

Commitments:

1. The US will prepare and submit to NEA by Jan 15, 1988 a description of the U.S. programs according to the format recommended by the Consulting Group.
2. Participate if necessary, in a draft review meeting in February just before the IAEA/TRCUD meeting if there is a need to discuss the drafts.
3. NEA is interested in another year of assistance on the data bank as in the past two years. (e.g. Muller) OCRWM will review the situation and respond.
4. Because its not clear whether NEA will receive response to questions sent out by ISAG and PAAG, OCRWM will check into the status.

MEETING WITH CEC, BRUSSELS, BELGIUM
OCTOBER 29, 1987

Participants: S. Orlowski, C. Cadelli, R. Simon, CEC and
C. Cooley, USDOE/OCRWM

Summary:

1. Orlowski reviewed the 5-year program and budgets adopted by CEC. CEC has approved overall direction of the program but the budget allocation to the waste management program has not been determined. Orlowski expects about the same operating budget for the next 5 years as for the last 5 years, (i.e. 190 million ECU's, approximately 1 ECU per U.S. dollar) for waste R & D. About 62 million of the 190 million ECU's are expected for programs where participating countries match the CEC funds. The remainder will go to direct funded projects at the CEC laboratories.
2. The CEC laboratories are being reorganized into a number of institutes with a Director for each (e.g. maybe six institutes at ISPRA). The objective of the reorganization is to obtain additional funding for the laboratories through their own initiatives. This move may impact the intended start up of the PETRA facility at ISPRA. (The Petra facility makes HLW for test purposes). It will be several months before all of the Directors and missions will be known. In the meantime, Orlowski recommends that all contacts be arranged through him.
3. The main tasks undertaken by CEC in Waste Management are in two parts. Part A is waste management studies and associated R & D actions with the tasks systems studies; improvement of waste treatment and conditioning technologies; evaluation of conditioned wastes; qualification of engineering barriers; research in support of the development of disposal facilities - shallow burial and geological disposal studies; safety of geological disposal; and joint elaboration of waste management policies. Part B includes the construction and/or joint operation of facilities open to CEC joint activities, i.e. Asse Salt Mine in FRG and the Hades project in clay at Mol, Belgium. Of specific interest is the System Studies, which investigates the economic incentives for various waste handling, treatment and disposal options. Key factors include waste type, disposal site, occupational exposure, post disposal exposure and costs. The assumptions of the CEC study on reprocessing includes release of krypton, xenon, tritium and carbon-14. Spent fuel storage options will be included, e.g., wet compact storage. Also, the study will include variations in the price of uranium and plutonium.

Cladding hull treatments will include compaction and lead matrix melting. The studies will take two and one half years to complete.

4. Waste treatment studies include: 1) cladding hulls, LLW, MLW and incinerator ash conditioning and immobilization methods using cements and polymers; 2) optimization melting studies. Some promise exists for using membranes coupled with electrical current to keep the membranes clean (work done at Harwell). Interesting work has been done on reduction of the plutonium content of solid wastes by washing solids with strong oxidizing agents in the presence of electrical current, e.g. residual plutonium content down to 0.1 ci/t.
5. Waste package studies continue to emphasize testing of waste forms for leaching and solubility and acceptance criteria for waste packages. Cross-section tomography has shown good non-destructive characterization of waste packages. Material corrosion involves mostly steels. Emphasis is still placed on the evaluation of fracture and leaching characteristics of glass because of its importance for the accident scenarios.
6. Geologic studies are emphasizing rock mechanics benchmarking and validation, colloid migration, natural analogs, and geochemistry codes. Basic thermodynamic data are being collected for various species and results are being compared with actual experimental results. Benchmarking includes the PHREQE, MINEQL and EQ 3/6 geochemistry codes.
7. Fifteen countries are participating in the round-robin testing of glass samples for leach rate and equilibrium solubility using a test chamber which suspends glass and rock samples near a vapor-liquid interface in an enclosed pressure vessel.
8. In the Asse Salt demonstration test (glass logs), France, and the Netherlands have joined in the tests leaving only the U.S. as a non-participant in these tests.

COMMITMENTS:

1. Orlowski will prepare a record of the meeting of the Principal Coordinators (the first in two years) and will send it to C. Cooley for signature.
2. C. Cooley agreed to look into our Program's interest in sponsoring or hosting the meetings proposed by Orlowski and to advise Orlowski later.
 - Orlowski asked if the U.S. would cosponsor a meeting on HLW testing under repository conditions to be held at Cadarache, France hosted by CEA. This means primarily papers and people at the meeting.
 - Orlowski also asked if we would cosponsor a second conference on Radionuclide Behavior in the Geosphere to be held in the U.S.A presumably by LLL in 1989 (as CEC contacted by Choppin, De Silva and Dr. Sowerbee).
 - He also proposed that the USDOE host during the Spring of 1988 the third meeting of the Natural Analogue Working Group.
3. Coordination with the MCC will continue as in the past. The French CEA is planning to join with Hades project in Mol, Belgium by constructing a section using corrugated arches of steel rather than the Belgium's approval of heavy concrete liners. Considerable cost reduction is anticipated if the concept works satisfactorily.

OBSERVATION:

CEC has bilateral agreements with the US, AECL (CA), NAGRA (SZ) and SKB (SW). The CEC brings together work in a number of countries by co-sponsoring work with each. The opportunity to take advantage of further technical exchange on the activities of several countries could occur through the CEC. In the future, some of the technical teams which are in Europe could visit CEC to gain a better understanding of the opportunities.

TRAVEL EXPENSES

10-24-87

POV -- 75 mi round trip -- home to office to airport and home. Departure time 7:10 pm

10-25

Arrival in Paris at 8:30 am -- Bus to city 28 FF -- Taxi from city to hotel 35 FF

10-26

In Paris

10-27

In Paris
Taxi to Airport -- late meeting required taxi direct to Airport to catch scheduled flight -- Departed Paris at 4:30pm -- Arrived Brussels at 5:30pm -- Bus to city 73 FF
Taxi 280 BF
Hotel porter \$1.00

10-29 Brussels

10-30

Bus to Airport -- 300 BF -- Airport tax 300 BF at exchange rate of 33 BF/\$ -- Depart BE @ 5:30pm -- Arrive Wash, DC @ 11:45pm -- Taxi home - \$48.00

CONTACTS

10/26/87

Jean Lefevre
Director, Nuclear Waste Management (FaR)
CEA (Atomic Energy Commission)
Centre d'Etudes Nucleaires (CEN)
29-33, Rue de la Federation
F-75752 Paris, France

10/27-28/87

J. P. Olivier
Director, Radiation Protection/Waste Management
OECD/NEA (Organization For Co-Operation And Development)
38 Boulevard Suchet
F-75016 Paris, France

10/29/87

Serge Orłowski
Director, Fuel Cycle
CEC (Commission of the European Communities)
200 Rue de la Loi
B-1049 Brussels, Belgium

Itinerary

10/26/87, The French Commission for Atomic Energy (CEA),
Paris, France

10/27-28/87, Organization for Economic and Cooperative
Development/Nuclear Energy Agency (OECD/NEA),
Paris, France

10/29/87, Commission of European Communities (CEC),
Brussels, Belgium

DOCUMENTS OBTAINED FROM CEC

DIRECT DISPOSAL OF SPENT NUCLEAR FUEL

W. Bechthold, K.D. Closs, U. Knapp and R. Papp
Kernforschungszentrum Karlsruhe GmbH
Projektgruppe Andere Entsorgungstechniken
D-7500 Karlsruhe 1 EUR 11268

OFFICIAL JOURNAL OF THE EUROPEAN COMMUNITIES
10-24-87 No L 302/1

COUNCIL DECISION of 9-28-87 concerning the framework
programme for Community activities in the field of research
and technological development (1987 to 1991)
(87/516/Euratom, EEC)

COMMISSION OF THE EUROPEAN COMMUNITIES
Brussels, 7-29-87 COM(87) 312 final

COMMUNICATION FROM THE COMMISSION
Analysis of the present situation and prospects in the field
of radioactive waste management in the european community
Second Report

PRESENTATION OF THE RMA CHARACTERIZATION FORMS
July 1987

INTERNATIONAL SOCIETY FOR ROCK MECHANICS
A.A. Balkema/Rotterdam 1987

THE COMMUNITY'S RESEARCH AND DEVELOPMENT PROGRAMME ON
RADIOACTIVE WASTE MANAGEMENT AND STORAGE
SHARED COST ACTION
Annual Progress Report 1986

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