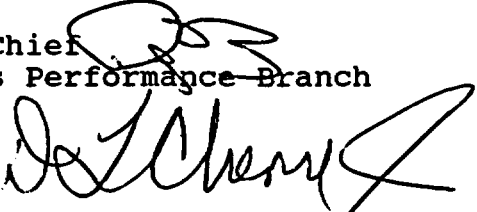


May 15, 1991

NOTE TO: John J. Linehan
Deputy Director
Division of High-Level Waste Management

THRU: Dave Brooks, Acting Chief
Hydrology and Systems Performance Branch

FROM: Donald L. Chery, Jr. 

SUBJECT: FOLLOW-UP ASSESSMENT OF 2ND ANNUAL INTERNATIONAL HLW
CONFERENCE FOR HUGH L. THOMPSON, JR.

As requested by Mr. Thompson's memorandum of 5/7/91, the following comments provide my assessment of the specific benefits to NRC from attending the meeting. The 1991 International High-Level Radioactive Waste Management Conference had 977 registrants with 175 from 16 different countries. There were about 188 technical presentations, 36 programmatic type presentations, and 24 social/education type presentations. In addition there were the, in general, stimulating and provocative opening and plenary talks. Of all these offerings, I attended the opening session and all the plenary sessions, 24 technical presentations, 3 programmatic type presentations, 3 papers on risk perception, and chaired the session on saturated zone hydrology. I found it informative to hear Floyd Galpin discuss the development of the EPA standard and describe the content of just released 3rd draft of the proposed revision of the remanded standard. Next it was informative to hear DOE's discussion of the Carbon-14 issue, NRC quantitative subsystem performance requirements and the human intrusion issue in the presentation by Parker, McCaughey, and Lugo. The paper, "Evaluation of Geographic Information Systems for Three-Dimensional Ground-water Modeling, Yucca Mountain, Nevada" by Turner, Ervin and Downey reported quite significant and important work for the hydrologic system modeling and eventual performance assessments. The NRC technical staff was not aware of this important work until hearing this presentation. The paper, "Test and Evaluation of Natural Barriers at Yucca Mountain, Nevada: Management of the Site Characterization Program," was informative and indicated sound thinking for the program. There is the one decision point in the program that is of singularly importance. It is the one identified as [Confidence Adequate in Site Information] and a good discussion was had with Jean Younker, presenter of the paper, about this issue. In a related presentation, "A Decision Support System for Performance-Based site Characterization," had apparent logical problems in its construction and use that were discussed by several in the audience. I also thought that the excellent experimental groundwater flow field site discussed by K. Yanagisawa should be considered by NRC as a possible source of data for groundwater flow/transport model validation. This possibility may be explored by the Office of Research.

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**TRIP REPORT FOR THE ATTENDANCE AT THE SECOND ANNUAL
INTERNATIONAL HIGH-LEVEL RADIOACTIVE WASTE MANAGEMENT CONFERENCE**

by Robert L. Johnson

From April 29 to May 2, 1991, I attended the Second Annual International High-level Radioactive Waste Management Conference in Las Vegas, Nevada. This report summarizes my activities at the conference and the major benefits to me and the staff.

On April 29, 1991, in the afternoon session on Current Issues in U.S. and International HLW Regulation, I presented the paper on NRC's first update to the Regulatory Strategy. This session was attended by a few hundred people, and my presentation gave those in attendance an overview of our program and how it is evolving. In my opinion it is a benefit to NRC to discuss our program (generally and for specific issues) with the nuclear waste management community so they have the opportunity to become better acquainted with our staff, our role, what we are doing, and the positions we are taking on important issues. Such an overview gives them the opportunity to follow-up on specific points of interest to them as desired. Improving communications and building confidence and acceptance was one of the main themes of the conference. By taking an active role in this conference, both by giving papers and chairing sessions, the staff helps to build the nuclear waste management community's confidence in what NRC is doing.

On a personal note, coauthoring this paper and presenting it and attending the conference was a benefit to me professionally and contributed to a greater sense of involvement with the overall program both on a national and international scale. Such involvement and perspective is stimulating and a great moral builder. Furthermore, listening to presentations and interacting with conference attendees exposed me to some current views and work of many different groups in the U.S. and in foreign countries. To me this was a valuable opportunity to hear new ideas and stimulate new ideas of my own. I think the intangible benefits of improved employee moral, motivation, and ideas generated are a significant contributor to building and maintaining an excellent staff capable of taking a leadership role in the national program.

In addition to presenting a paper, I also attended sessions each day of the conference. I attended each of the system plenary sessions and focused by attendance at specific sessions on those related to regulations, licensing, and performance assessment since these are the areas most closely related to the projects I manage.

The opening session presentation by Dr. Maxey focused on the issue of public acceptance which seemed to be one of the major concerns in many other sessions and luncheon talks. Public

acceptance and building public confidence is viewed by many as important to the ultimate success of the national program. Some speakers made the point that technical organizations often have the view that technical excellence is all that is needed to build public confidence. However, being able to effectively communicate complex technical issues to nontechnical stakeholders including the public is also critical. It was useful to me to hear this challenge to the technical community and realize that NRC should also do its part in this area. We might think about what is appropriate for NRC to be doing.

Commissioner Curtiss expressed NRC's view on DOE's readiness to conduct limited site work, as well as the views that NRC interactions with DOE are good, DOE is making progress in resolving our objections, and site access is critical to doing the testing needed to evaluate site suitability. It is beneficial to the national program for NRC, as an objective third party, to clearly speak out on such important issues.

Finally, it was also useful to me to hear that other groups (two DOE groups, EPRI, and Japan) are currently attempting to prioritize or focus the activities in their programs on the most important technical areas by using sensitivity studies. This is consistent with the staff's ongoing work on our overall review strategy for the license application which is using the Systematic Regulatory Analysis combined eventually with iterative performance assessment results to focus our program on those issues most important to repository performance.

5/16/91
[Signature]

Benefits Received by the NRC by My Attendance
at the 2nd IHLRWM Conference, April 28 - May 3, 1991

Norman A. Eisenberg

My participation at this conference consisted of two main areas:

1. Attendance at and participation in the technical sessions at the Conference itself; and
2. Participation in formal and informal meetings held in conjunction with the Conference.

My participation in the Conference included delivering two papers and attendance at several Plenary and Technical Sessions. On Tuesday, April 30, in the session, "Performance Assessment - Scientific Basis and Regulatory Needs," I presented:

Performance Assessment: The Bridge Between Regulatory Decision-Making and Scientific Uncertainties by Robert M. Bernero.

Demonstration of a Repository Performance Assessment Capability at the U.S. Nuclear Regulatory Commission by Richard Codell, Norman Eisenberg, Timothy McCartin, and James Park.

There were four other performance assessment papers presented at this session. On April 30 I also attended the Plenary Session on Engineered Systems with papers by Charles McCombie, NAGRA, and Diane Harrison-Giesler, DOE. After the plenary I heard papers on modeling hydro-thermal-mechanical effects in a fracture intersecting an emplacement hole, fracture lining materials in tuff, effect of material heterogeneities on flow through porous media, lubrication theory analysis of permeability of fractures, and unsaturated flow in variable aperture fractures. I attended the Opening Plenary Session with important and informative talks by John Bartlett, DOE, Governor Miller, State of Nevada, Margaret Maxey, U. of Texas, Don Deere, NWTRB, and James Curtiss, NRC. Also on April 29 I attended the Natural Systems Plenary with a presentation by Paul Gnirk on the development of 10 CFR 960. In the afternoon I heard papers on the development of the EPA Standard, Performance Assessment in Early Phases of the Repository Design Process, and the dependence of the dissolution of spent fuel on grain and fragment size. On May 1 I attended the two sessions on performance assessment. At two luncheons, speakers discussed the role of the negotiator (David H. Leroy) and the industry view of the OCRWM program (Andrew Kadak, Yankee Atomic Electric Co.). Since I was unexpectedly recalled a day earlier than planned, I attended no sessions on May 2.

I also attended and participated in two formal meetings and several informal meetings. On April 30 I attended the ASME

Subcommittee meeting on High-Level Nuclear Waste. At this meeting the past and planned activities of the Subcommittee were discussed, including the position paper on the national high-level waste program developed by a working group. On April 30 and May 1, I and Mel Silberberg, RES, met with Kjell Andersson, Johan Andersson, and Soren Norrby, SKI, to discuss plans for the development of a joint NRC/SKI position paper on validation of performance assessment models; a draft note of record for these meetings was provided to M. Silberberg on May 7. In addition to these formal meetings, I had informal meetings with members and staff of the ACNW, NWTRB, and DOE.

Benefits to the NRC from my attendance at this meeting include: (1) airing NRC staff technical views at an international, professional conference; (2) obtaining up-to-date technical information on performance assessment methods and its scientific basis; (3) obtaining up-to-date technical and programmatic information on the OCRWM program; (4) attendance at important contemporaneous meetings.