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MEMORANDUM FOR: Hugh L. Thompson, Jr.,  
Deputy Executive Director for  
Nuclear Material Safety, Safeguards  
and Operations Support

FROM: Robert M. Bernero, Director  
Office of Nuclear Material Safety  
and Safeguards

SUBJECT: FOLLOW-UP ASSESSMENT OF 2ND ANNUAL INTERNATIONAL  
HIGH-LEVEL RADIOACTIVE WASTE (HLW) MANAGEMENT CONFERENCE  
(9100245)

As requested in your memorandum dated May 7, 1991, we have performed an assessment of the benefits of the Office of Nuclear Material Safety & Safeguards (NMSS) and Center for Nuclear Waste Regulatory Analyses (CNWRA) staff attendance at the subject conference and are providing you with the assessment and statements prepared by each of our attendees.

A total of 9 NMSS staff and 8 CNWRA staff attended this year's conference and presented 9 papers and chaired 6 conference sessions. Given that the conference dealt with just high-level waste and that there were 8 concurrent sessions ongoing at all times, I feel that the number of staff attending was needed to provide adequate coverage of the various sessions of significance to the NRC.

The major benefits to NRC from our attendance at the conference were:

- o Presentation of NRC positions and activities to an audience that represents all key parties in the HLW program at both staff, scientist and management level and comments from the various parties on these items. This facilitates communication among all parties, is a valuable opportunity to hear new ideas and concepts, and improves understanding of NRC positions.
- o Gaining insight and knowledge of various activities, developments and up-to-date technical information from DOE and its contractors, industry and the international community. This is of particular significance for activities in the planning stage and for ongoing technical evaluations which are not readily accessible by any other means. The use of such information is very helpful to the staff in planning or conducting our own activities.
- o Opportunity for presenters of papers and session chairmen to gain credibility and respect of their peers.

Specific benefits in these areas are discussed in the attached assessments by individual attendees.

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It is important to note that this is the only major conference held in the U.S. related exclusively to HLW and accordingly provides the only opportunity for staff to attend a conference that allows them to remain cognizant and up-to-date of the many various activities related to HLW.

In addition to actual attendance at the conference, NMSS and CNWRA staff participated in the activities of the program, steering, and executive committees prior to the conference. This participation allowed the NRC to have an influence on the session topics and papers presented and helps assure some balance to the conference from a regulatory perspective.

My overall evaluation is that the participation by the NMSS and CNWRA staff at this year's conference was of benefit to the agency and that we should plan to continue to commit similar resources to this conference in the future.

Original signed by G. A. Arlotto

Robert M. Bernero, Director  
Office of Nuclear Material Safety  
and Safeguards

Enclosures: As stated

DISTRIBUTION (9100245)

CNWRA  
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OFC : HLWM	: HLWM	: NMSS	: NMSS	:	:
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**ASSESSMENTS OF INDIVIDUAL  
CONFERENCE ATTENDEES**

ASSESSMENT OF ATTENDANCE AT 2ND ANNUAL  
INTERNATIONAL HIGH-LEVEL WASTE CONFERENCE  
JOHN LINEHAN  
DIVISION OF HIGH-LEVEL WASTE MANAGEMENT

From April 29 to May 2, 1991, I attended the subject conference to act as Session Chairman for the "Regulatory Aspects of Site Characterization" and to represent the NRC at meetings of the Executive and Steering Committees for the conference.

Prior to the conference I met with all Division of High-Level Waste Management attendees to ensure that all appropriate sessions and plenaries were covered. During the conference I focused my attendance on those sessions related to regulatory aspects, and selected papers in technical sessions that dealt with technical concerns with 10CFR60 and 40CFR190. I also met with representatives of industry, local governments, EPA, and DOE and its contractors and discussed topics of current interest.

The major benefit from my attendance was in gaining better insight into the thoughts and positions of various parties on a number of issues which I discussed with Division of High-Level Waste Management staff and management following the conference. This was of particular benefit for activities that are still in the planning or formative stages. While our overall interface with DOE and other parties is excellent, the resources to hold meetings requires that they focus on the most significant current issues and don't always allow discussion of items under consideration or in the planning stage which were the subject of various conference papers and follow up discussions.

One important issue discussed in the session I chaired was the monitoring and evaluation of site characterization data with respect to the performance allocation proposed in the SCP, 10 CFR 60 requirements, and comments by NRC and others on the SCP and other DOE documents. A significant item coming out of the discussions on this topic was the need to develop a more effective way for ensuring that various activities being conducted, including NRC-DOE interactions, better focus on trying to resolve issues and track these resolutions. This item is currently being discussed with DOE.

I also heard of an effort by the Electric Power Research Institute to hold a workshop geared toward developing a consensus on the major issues related to the EPA standard. This item is being followed up on by DHLWM staff to determine exactly what EPRI is proposing and hoping to achieve with such a workshop. Another item of particular interest was the presentations by utility executives emphasizing the need to deal openly, yet aggressively with the NRC.

On the afternoon of May 2, 1991 following the close of the conference, I was taken on a tour of ongoing excavations at Hoover Dam utilizing both drill and blast and tunnel boring machines in different areas to observe the difference in shaft and drift walls left by both techniques after excavation in welded tuff. An important concern of the geoscientists is use of excavation techniques that allow adequate geologic mapping following excavation. On May 3, I then met with the NRC on-site representatives.

**SPECIFIC BENEFITS RECEIVED BY NRC AS A RESULT OF ATTENDANCE BY  
DR. DINESH C. GUPTA (X-20547)  
DIVISION OF HIGH-LEVEL WASTE MANAGEMENT  
GEOLOGY AND ENGINEERING BRANCH**

On April 28 through May 3, 1991, Dr. Gupta attended the second annual international high-level radioactive waste management conference in Las Vegas, Nevada. In addition to presenting a paper at the conference, he attended the various plenary sessions and six technical sessions. The specific benefits to the NRC resulting from his attendance at the conference include the following.

1. Dr. Gupta presented a paper at the session on design control methodology, "Design Control Process Requirements for Geologic Repository Operations Area Design." The paper was very well received by the attendees. The feedback received on the paper from the DOE and other members of the audience would be helpful to the NRC staff during its review and observation of DOE's ESF Design control process work.

2. Dr. Gupta attended the following technical sessions: (1) Design Control Methodology, (2) Underground Facility Design, (3) Geotechnical Exploration, (4) Radionuclide Release from the Engineered Barrier System, (5) Institutional Approaches to Resolving Technical Issues, and (6) Thermal Considerations in Underground design. There were several excellent papers presented at these sessions. Benefits received from attending the presentations of some of these papers and their discussions at the conference are summarized below.

(a) Robert Mckee of PNL presented a very good paper, "Effects of Spent Fuel Aging on Repository Disposal Requirements." In this paper he described the findings from his work on the effect of emplacing cooler waste in the repository, and its effect on repository design. He said that further details are given in a white paper that PNL had recently prepared for DOE. The staff is making arrangements to get a copy of this white paper from DOE.

(b) Steve Smith, SAIC presented a paper on QA grading process that is currently being developed for the DOE. There was some criticism of this work from the people in the audience. This criticism provided insight into potential problems with DOE's QA grading process.

(c) During the presentation of one of the papers, DOE's Ted Petrie said that DOE does not intend to go through the verification process for its ESF Title I design that would require checking the adequacy of the design by individuals or groups other than those who performed the original design. Such verification may be done for Title II design. The staff will assess the adequacy of DOE's ESF design verification process.

**FOLLOW-UP ASSESSMENT OF 2ND ANNUAL INTERNATIONAL HLW CONFERENCE  
FRITZ STURZ, IMNS/IMSB**

Mr. Sturz, as Section Leader, Irradiated Fuel Section, was sent to this year's conference to present an invited paper titled, "Dry Spent Fuel Storage in the 1990's," that was prepared by his predecessor John Roberts.

While at the conference Mr. Sturz attended various technical sessions on spent fuel characteristics, spent fuel storage and transport cask design, technology, testing and analyses, at-reactor interim spent fuel storage, and monitored retrievable storage. He also met with industry and other government officials and discussed topics of current interest. Attendance at technical sessions and discussions with industry personnel help keep NRC abreast of the direction industry is heading on spent fuel storage designs, transportation and waste management systems.

One current issue which was discussed was the proposed rule for NRC cost recovery. While industry typically reacted with displeasure, Mr. Sturz was able to learn that several cask vendors were considering withdrawing the certificates of compliance for their cask designs because of the annual fee, and that vendors would not seek a certificate of compliance unless they had a buyer for their cask. One Department of Energy (DOE) official expressed concern that the annual fee would undermine the past 10-years effort by DOE to promote and demonstrate dry spent fuel storage technologies that the NRC may, by rule, approve for use at reactor sites without additional site-specific approval. Without certified casks, the rule would conflict with the intent of Sections 133 and 218 of Nuclear Waste Policy Act of 1982. This information was passed along to the proposed rule working group to alert them to a potential problem in advance of the comment period deadline.

Mr. Sturz also learned of Electric Power Research Institute sponsored studies for conceptual designs for small cask to large cask transfer systems. This work is important to the compatibility issue of storage and transportation systems that the Commission has encouraged. The intention of these studies focused on making large concrete or metal storage casks available to those utilities having crane restrictions or facility limitations. These large casks could be made available by using a smaller transfer cask to "field-load" the larger cask. This concept could easily be extended to the direct transfer of spent fuel from a storage cask to a shipping cask without having to return the fuel to the reactor spent fuel pool. This information will be included in the next semiannual Commission paper "Progress by US DOE and the Industry to Develop Cask Designs To Achieve Compatibility for Dry Storage and Transportation Purposes."