



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

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April 14, 1987

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MEMORANDUM FOR: Robert E. Browning, Director  
Division of High-Level Waste Management  
Office of Nuclear Material Safety and Safeguards

FROM: Frank A. Costanzi, Chief  
Waste Management Branch  
Division of Engineering  
Office of Nuclear Regulatory Research

SUBJECT: VISIT TO NAGRA FACILITIES BY NRC AND CONTRACTOR PERSONNEL

Daniel A. Galson of your staff has informed John D. Randall of my staff of your plans for attending meetings at the Nuclear Energy Agency in Paris, France in early June 1987 and of your desire to join Dr. Randall and two of his contractors, Dr. Evaristo J. Bonano of Sandia and Professor Shlomo P. Neuman of the University of Arizona, during their meetings with NAGRA, the Swiss national cooperative for radioactive waste disposal, on June 15, 16, and 17, 1987. Drs. Randall, Bonano, and Neuman will be meeting with NAGRA personnel in Baden, Switzerland under terms of NRC's bilateral agreement with NAGRA and they will be discussing aspects of the agreement that concern hydrogeological testing and modeling.

Your participation in the meetings with NAGRA is most welcome and I would like to take this opportunity to extend an invitation to members of your staff to participate in the meeting. Dr. Randall and NAGRA's Dr. Charles McCombie currently are arranging the details of an agenda for the meeting. Dr. Randall will keep you informed of the agenda as it develops. In the meantime, Dr. Randall recommends that you arrange hotel accommodations at the Hotel du Parc on Rommerstrasse in Baden. The Hotel du Parc's telephone number is 41 56 201 311.

Should you decide to fly from Paris, the closest airport is near Zurich. If you decide to travel by train from Paris, you should go to Basel (spelled Bael in French), where you have change from a French to a Swiss train. Baden is easily accessible by train or car from Zurich and by train from Basel.

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For your information, I am attaching a copy of a letter sent by Dr. Randall to Drs. Bonano and Neuman about their visit to NAGRA. If you have any questions about this visit, contact me at x37910 or Dr. Randall at x37787.

*K/AOR 403*

Frank A. Costanzi, Chief  
Waste Management Branch  
Division of Engineering Safety  
Office of Nuclear Regulatory Research

cc: Daniel A. Galson, OB/DHLW/NMSS

March 23, 1987

Evaristo J. Bonano  
Division 6416  
Sandia National Laboratories  
Albuquerque, NM 87185

Dear Dr. Bonano:

Preparatory to our visit to NAGRA, the Swiss national cooperative for radioactive waste disposal, on June 15 - 17, 1987, I am enclosing a packet of information that I assembled from documents given to me by NAGRA personnel on previous visits to Switzerland. This information should answer many of your questions about NAGRA and its technical activities. I also have an extensive set of slides that I took in 1984, 1985, and 1986 at NAGRA's Grimsel Test Site. I shall be sending you VHS videotapes of these slides in the near future.

There are some NAGRA tests that may be of interest to us that are not discussed in the enclosed information packet because the tests were started after the documents in the packet were assembled. One such test of special interest to us is a contaminant migration test which I have seen in progress in a fractured rock formation at NAGRA's Grimsel Test Facility. When you, the University of Arizona's Shlomo P. Neuman, and I meet with INTERA personnel who have worked on a NAGRA contract, we should find out as much as we can about those hydrologically related NAGRA activities for which I do not have documentation. A source of information that may be helpful to us in this regard is a very recent Water Resources Research paper, "Analysis and Interpretation of Borehole Hydraulic Tests in Deep Boreholes: Principles, Model Development, and Applications," (Paper 6W4403) by Pickens, et al. The abstract for this paper appears on the last page of the March 17, 1987 issue of EOS. Apparently the paper will appear in the March or a future issue of Water Resources Research because it is not in any earlier issues.

Charles McCombie of NAGRA and I have yet to establish a detailed agenda for our visit. I shall keep you informed of and seek your advice on the development of this agenda as it evolves.

Sincerely,

(Original signed by)

John D. Randall  
Waste Management Branch  
Division of Engineering Safety  
Office of Nuclear Regulatory Research

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(Costanzi concurred for Grill)