

NATIONAL RESEARCH COUNCIL

COMMISSION ON GEOSCIENCES, ENVIRONMENT, AND RESOURCES

2101 Constitution Avenue Washington, D.C. 20418

BOARD ON
RADIOACTIVE WASTE MANAGEMENT
(202) 334-3066 Fax: 334-3077

August 23, 1990

Office Location:
Milton Harris Building
Room 462
2001 Wisconsin Avenue, N.W. 20007

Mr. Robert Browning, Director
Div. of High-Level Waste Mgmt.
U.S. Nuclear Regulatory Commission
Mailstop 4H3
Rockville, MD 20555

Dear Mr. Browning:

Because of the widespread scientific concern and interest in the revisions being made during the remand of 40 CFR Part 191, in September 1990 the Board on Radioactive Waste Management (BRWM) is holding a Symposium on Radioactive Waste Repository Licensing. The symposium, scheduled for 17-18 September 1990 at the National Academy of Sciences auditorium in Washington, will examine the status of the licensing requirements in the United States and elsewhere. Participants will include Department of Energy (DOE), the Environmental Protection Agency (EPA), the Nuclear Regulatory Commission (NRC), the Advisory Committee on Nuclear Waste (ACNW) of the NRC, the Nuclear Waste Technical Review Board (NWTRB), and other interested parties, including selected international, state and environmental interest groups. On behalf of the National Academies of Science and Engineering and the National Research Council we invite you to attend this symposium.

Numerous concerns about the EPA's standards for geologic disposal provide the impetus for this symposium. Over the past few months a number of organizations have made recommendations on topics to be considered during the EPA's deliberations on the revision of 40 CFR Part 191. On December 21, 1989, the ACNW wrote to Chairman Kenneth E. Carr, recommending that

"...the Commission object to the EPA standards on the basis that

- There are no obvious ways for demonstrating compliance of any specific repository site with the Standards. In this sense, the Standards may be unrealistic.
- The Standards are also overly stringent and inconsistent. There is strong evidence that they will be wasteful of resources with little commensurate benefit."

In March, 1990, the NWTRB, in its report to the Congress and the Secretary of Energy, made a number of suggestions including a re-evaluation of the large degree of conservatism in Section 191.13. The Board recommended that

"...the following modifications should be considered when the Standard: 40 CFR 191 is revised:

- The large degree of conservatism, which is expressed in Section 191.13, and contained in the numerical values in Table 1, Appendix B of that Section, should be re-evaluated in view of present-day environmental and regulatory requirements and also, when appropriate, in view of exposures received routinely and continuously from naturally occurring radiation.
- The vagueness contained in Item c. of Section 191.13 regarding numerical releases of radioactivity in the period 10,000 to 100,000 years post-closure should be removed from 40 CFR 191.

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- The monitoring requirements specified in Section 191.14 should be expressed in more definitive terms.
- The requirement for use of the concept of ALARA in Section 191.14 should be removed for two reasons. First, there is a question of appropriateness and applicability to the high-level radioactive waste repository. Second, if the requirements of 40 CFR 191 can be met, it seems this accomplishment would certainly qualify as ALARA.
- More attention should be given to inherent uncertainties and limitations in geologic information and data projected for periods of tens of thousands of years in regard to the rigor of formulating acceptable and realistic environmental radiation protection standards."

In testimony before the DOE Defense Nuclear Facilities Panel of the House Armed Services Committee, Professor Parker, on behalf of the BRWM of the National Academy of Sciences/National Research Council, testified on some regulations that were not self-consistent. In a letter to the Honorable John M. Spratt, Jr., these points were further elaborated. It was pointed out that some of the detailed regulations could under certain circumstances be counterproductive:

"If one compares the Nuclear Regulatory Commission's (NRC) regulations on low-level waste disposal, with those of the Environmental Protection Agency (EPA) on hazardous waste landfills, one finds that EPA requires minimal leakage with all leakage recovered while NRC designs for controlled leakage. EPA regulates such facilities for 30 years after closure with additional years at the discretion of the Regional Administrator, while NRC requires designs for at least 500 years. Further, on high-level waste disposal where the EPA regulations are presently in remand, NRC limits both rates from the waste, and time of water travel in the undisturbed geological formations. However, one can envisage a situation in a repository in salt where the canister would corrode fairly rapidly yet there would be little transport of the waste away from the site, and therefore a negligible dose. In a crystalline rock repository, one can envisage fairly rapid transport of water but little or no transport of the waste due to its solidification, engineering barriers to its movement, and the waste leachate interaction with the host rock or groundwater. In each of these instances, the dose to man could be well within the EPA limits, yet the site would not be licensable due to failure to meet other requirements of the Nuclear Regulatory Commission."

In an appearance before the ACNW, NWTRB members Drs. M. Carter and W. North also presented their views on 40 CFR Part 191, which, in part, suggested as one option performing a negotiated rule-making on the revision of 40 CFR Part 191.

We believe that with the remand of 40 CFR Part 191 it is worthwhile to examine the impact of recent information from efforts to implement the Waste Isolation Pilot Plant (WIPP) in New Mexico and to characterize the Yucca Mountain site in Nevada for possible use as a repository on the regulatory requirements for licensing repositories (both 40 CFR Part 191 and 10 CFR Part 60 "Disposal of High-Level Radioactive Wastes in Geologic Repositories"). Investigations in Sweden, Canada, Switzerland and other countries have shed further light on safety analyses of repositories. Further, the BRWM has recently issued a position statement "Rethinking High-Level Radioactive Waste Disposal", that examines many issues impacting the licensing process. Copies of the statement will be available at the symposium.

We understand that there are no plans to release a draft of the revised EPA standard for public comment in the near term. Therefore, we believe that careful and thoughtful reconsideration of 40 CFR Part 191 is of national importance and would welcome your attendance at this symposium.

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A copy of the draft agenda is attached for your information. We welcome your attendance and value your interest in the goals of the symposium and hope you will be present for the entire meeting.

Sincerely yours,

Frank L. Parker / B.K.

Dr. Frank L. Parker
Chairman
Board on Radioactive Waste Management

Attachments

AGENDASYMPOSIUM ON RADIOACTIVE WASTE REPOSITORY LICENSING
NATIONAL ACADEMY OF SCIENCES/NATIONAL RESEARCH COUNCIL
AUDITORIUM, 2101 CONSTITUTION AVENUE NW, WASHINGTON DCMonday, Sept. 17, 1990Session IA - Chairman: Frank Parker

0900-0915	Welcome & Introduction	Frank L. Parker, Chairman, BRWM
0915-1000	Keynote Address Repository Performance--The Regulatory Challenge	James Curtiss Commissioner, USNRC
1000-1040	Criteria For High-Level Radioactive Waste Disposal In The OECD/NEA	J.P. Olivier OECD/NEA
1040-1100	Break	

Session IB - Chairman: Susan Wiltshire

1100-1130	A European Perspective On Repository Licensing	Charles McCombie NAGRA
1130-1200	[Swedish & International Approaches]	TBD
1200-1230	Assessing The Acceptability of Nuclear Fuel Waste Disposal In Canada	Kenneth Dormuth AECL
1230-1330	Lunch	

Session IC - Chairman: Charles Fairhurst

1330-1410	United States Approach To High-Level Radioactive Waste Regulation	Thomas Cotton J.K. Associates
1410-1425	NWTRB Concerns With The Licensing Process	Don U. Deere Chairman, USNWTRB Melvin W. Carter Member, USNWTRB
1425-1440	A Review Of Comments And Recommendations Of The ACNW USNRC	Dade W. Moeller Chairman, ACNW USNRC
1440-1500	11,990 A.D.	Arthur Kubo Blue Ribbon Panel
1500-1515	Break	
1515-1540	WIPP And Its Compliance With The EPA Standard	Wendell Weart Sandia Nat'l Lab.
1540-1600	Practical Aspects Of Supporting A License Application For Yucca Mountain	Thomas O. Hunter Sandia Nat'l Lab.

Roundtable I - Chairman: Glenn Paulson

1600-1730	Roundtable Discussion	All Session I Speakers
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Tuesday, Sept. 18, 1990

Session IIA - Chairman: William Colglazier

0830-0900	USEPA Views On Scientific Advisories	Richard Guimond USEPA
0900-0930	Comments on NAS/NRC Report: "Rethinking High-Level Radioactive Waste Disposal"	Robert Bernero USNRC
0930-1000	USDOE Role In Regulatory Issues	John Bartlett USDOE
1000-1030	A Citizens' Group Perspective On The Regulatory Aspects Of The HLRW And TRU Disposal Programs	Dan Reicher NRDC
1030-1045	Break	
1045-1100	Nevada's View Of The Current Program As It Relates To Licensing A HLRW Repository	Robert Loux Nevada
1100-1115	New Mexico Environmental Evaluation Group Perspective on Transuranic and High-Level Waste Disposal Regulations	Robert Neill Director, EEG
1115-1130	Congressional Perspectives On Radioactive Waste Repository Licensing	Benjamin Cooper Staff - U.S. Senate Committee on Energy and Natural Resources
1130-1145	Observations On Integrated HLW Repository Performance Assessment And Related Regulatory Issues	Robert Shaw EPRI
1145-1300	Lunch	

Session IIB - Chairman: Chris Whipple

1300-1330	Licensing Issues Posed by Gaseous and Soluble Radionuclides in Spent Fuel	Lawrence Ramspott LLNL
1330-1400	Risk Based Compliance Evaluation Of The Yucca Mountain Site Including Impacts Of Repository Design Features	Paul Gnirk RE/SPEC
1400-1430	Hydrogeologic Considerations In Setting Environmental Standards For HLRW	James W. Mercer GeoTrans, Inc.
1430-1445	Break	
1445-1510	Uncertainty And The Implementation Of Regulatory Standards - (Tentative Title)	David L. Pentz Golder Assoc., Inc.
1510-1535	Considerations Based On The USEPA Science Advisory Board Subcommittee 1984 Report On 40 CFR 191	Robert Budnitz FRA, Inc.
1535-1615	Can Alternative Dispute Resolution Approaches Help?	Gail Bingham Conservation Found.

Roundtable II - Chairman: Frank Parker

1615-1645	Improving the Licensing Process for the Disposal of TRU and High-Level Radioactive Waste	All Session I & II Chairmen
1645-1700	Closing Remarks	Frank L. Parker Chairman, BRWM