



Department of Energy
Washington, D.C. 20585

FEB 19 1981

Honorable John F. Ahearne
Chairman
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Chairman:

This is in response to your letter commenting on the Department's research and development activities relative to processing and disposal of the radioactive waste at Three Mile Island.

The Department agrees with you that the handling and processing of wastes at the Three Mile Island site should be limited to well-established operations, and that the conduct of advanced research and development activities on radioactive waste at the Three Mile Island site should be avoided. I also believe our respective organizations should assist the utility technical management team and do our utmost to avoid cleanup delays.

We continue to believe, as indicated in our earlier correspondence to the Nuclear Regulatory Commission relative to krypton venting, that prompt access to the reactor system and core is important in order to begin the process of defueling at the earliest possible time. The increased knowledge and control of reactor conditions that would be gained by such prompt access is an important element in the Nuclear Regulatory Commission and General Public Utilities mutual objectives of assuring the continued safety of workers and the public. In support of this objective, the Department has initiated an effort to gain early visual access to the Three Mile Island-2 core. A crucial step in performing this task is the prompt removal of approximately 600,000 gallons of highly radioactive water in the Three Mile Island-2 containment building. Processing of that water is important in reducing the man-rem exposure of people working inside the containment building.

The owner, General Public Utilities, has under development an ion exchange process referred to as a Submerged Demineralizer System. This System is being designed and constructed to purify the water in the containment sump and to concentrate the 500,000 curies of fission product contained in the sump water onto inorganic sorbent material referred to as zeolites. I understand that the Submerged Demineralizer System will be ready for operation early in May 1981.

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My staff, in conjunction with representatives from various national laboratories, has evaluated the use of such inorganic sorbent material, and has concluded, based on the experience at our own facilities and its commercial availability, that the zeolites selected for use at Three Mile Island are a proven and appropriate sorbent material for the Submerged Demineralizer System. As a result of this evaluation, I have every confidence in the stability of zeolites over the long term. The staff and consultants further believe that a system containing such a sorbent material represents no new technological challenge in processing the Three Mile Island-2 containment sump water. For these reasons I believe steps should be taken immediately to authorize General Public Utilities to process the containment building sump water. However, it is my understanding that authorization to proceed with the processing of the water is strongly coupled with treatment and ultimate disposition of the high specific activity zeolites that would result from the Submerged Demineralizer System process. The Department recognizes the unique nature of these wastes, but strongly believes that the processing of the sump water should be allowed to proceed apart from the question of treatment and ultimate disposition of the zeolites. This does not mean that disposition of these zeolites should not be addressed. Although zeolites pose no long term stability problem, the Department realizes the necessity for the Nuclear Regulatory Commission to assure that proposed methods for handling and storage of zeolite wastes are available to protect the health and safety of the public. We have, therefore, initiated a program to demonstrate the feasibility of immobilizing the radioactivity on these zeolites in a vitrified waste form.

The Department has had considerable success with this solidification procedure as part of its vitrification program. Specifically, between 1976 and 1979, the Department, through its contractor, Pacific Northwest Laboratory, undertook steps to convert several spent fuel elements from the Point Beach Reactor into vitrified waste (PNL Report 3038, "Technical Summary Nuclear Waste Vitrification," May 1979). In addition, cold bench-scale studies in support of the planning for this program indicate that an acceptable quality glass form can be produced during this demonstration program (presentation, "TMI - Vitrification Program," dated November 12, 1980). Our current plans are to prepare the facilities at the Department's Hanford Site this fiscal year, and to be ready to accept two loaded Submerged Demineralizer System liners early in calendar year 1982. The contents of these liners would be converted into three vitrified glass specimens, each eight inches in diameter by eight feet in length. In this regard we note the assurance in the January 7, 1981, letter from Mr. Dircks to Mr. Bateman that conduct of programs such as these at Department of Energy facilities would not be subjected to Nuclear Regulatory Commission licensing regulation.

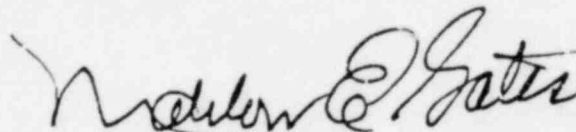
A copy of the program plan for this ion exchange media vitrification at Pacific Northwest Laboratory is enclosed. Any comments or suggestions that the Nuclear Regulatory Commission might have in relation to the scope of work for the vitrification process would be appreciated. The Department believes that its very broad base of technology in immobilization techniques using

vitrification in borosilicate glass, together with the Pacific Northwest Laboratory feasibility studies on zeolite vitrification, provides a satisfactory basis for concluding that vitrification is a practical process for immobilizing the Submerged Demineralizer System zeolites, thereby protecting the health and safety of the public.

In parallel with preparations for performance of this program, the Department, in conjunction with General Public Utilities, is evaluating the benefits of utilizing the inorganic zeolite material up to its maximum loading capacity of approximately 120,000 curies per liner from its current value of 10,000 curies per liner. Our estimates indicate that even if the liners are loaded to 60,000 curies, the number of liners would be reduced from about 60 to about 10, and would result in approximately 20 glass specimens compatible with currently available spent fuel storage racks. This approach would also reduce the number of shipments required for additional processing. The Department's findings will be available by March 15, 1981, and we will transmit the final data to you at that time. In the meantime, we are keeping your staff informed of our findings.

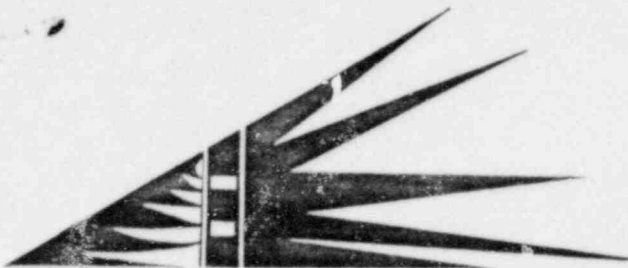
We will keep you abreast of developments in the vitrification/demonstration program and of the results of our evaluation related to higher loadings of the Submerged Demineralizer System liners. In the meantime, I strongly recommend that you authorize General Public Utilities to process the containment building's water using the Submerged Demineralizer System when that System is completely installed.

Sincerely,



Mahlon E. Gates
Acting Assistant Secretary
for Nuclear Energy

Enclosure -



SOUTHWEST RESEARCH AND INFORMATION CENTER

May 11, 1982

Freedom of Information Officer
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

FREEDOM OF INFORMATION ACT REQUEST:
Certified Mail #P 201 215 645

**FREEDOM OF INFORMATION
ACT REQUEST**
FOIA-82-231
Rec'd 5-17-82

Dear Freedom of Information Officer:

This is a request under the Freedom of Information Act, 5 U.S.C. §552 et seq., as amended, 10 C.F.R. §1004.1 et seq., 43 C.F.R. §2.1 et seq., and 40 C.F.R. §1515 et seq. for release of reports, studies, correspondence, opinions, memoranda, minutes, contracts, agreements or any other documents or records (hereinafter collectively referred to as "records") relating to the decision by the Department of Energy to accept the entire core of the Three Mile Island Unit 2 nuclear reactor and the NRC decision to enter into a Memorandum of Understanding with the DOE on this decision.

We are especially interested in NRC's decision to allow nuclear materials that legally must be licensed to be stored, processed and disposed of in unlicensed facilities. Also, we are interested in records related to the locations of potential DOE sites for storage, processing and disposal of all TMI-2 nuclear wastes, feasibility studies for such activities, projected costs of such operations, and the schedule for such removal, storage, processing and/or disposal of all TMI-2 nuclear wastes.

Should any questions arise as to the scope of this request, please contact Don Hancock at (505) 262-1862.

Requestor Southwest Research and Information Center is a non-profit educational and scientific organization conducting research and communicating with the public on energy and environmental issues, including a major emphasis on nuclear waste management. The organization maintains an extensive public library dealing with energy and environmental issues. Through this library, publications, news releases and other correspondence and communications, we provide information to thousands of persons throughout the United States. Therefore, we would request that any fees required under 43 C.F.R. §2.19 (a) be waived, because furnishing this information will primarily benefit the public interest. 43 C.F.R. §2.19 (c).

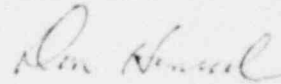
However, in the event that it is determined that fees are to be assessed, requestor authorizes the incurring of up to \$25 in authorized expenses. This does not constitute a waiver of any rights requestor may have to a waiver of fees, nor does it authorize the incurring of fees for information which has not been specifically requested.

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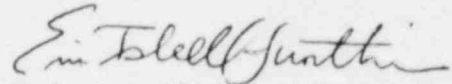
FOIA Officer-US NRC
May 11, 1982
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If it is determined that the request for any records is denied, either in whole or in part, please include a list of all documents included in the request, and a specific indication of what materials is being withheld and for what reason. 43 C.F.R. §2.15, see Vaughn v. Rosen 484 F.2d 820 (D.C. Cir. 1973); cert. den. 415 U.S. 977 (1974). The explanation of the reasons should reflect the Agency's burden to justify nondisclosure. Vaughn v. Rosen, supra. In either case and as required by law, we expect an answer to our request within 10 working days. If any portion of this request is denied, please inform us of our immediate avenue of appeal.

Sincerely,



Don Hancock
Information Coordinator



Eric Isbell-Sirotkin
Staff Attorney