

January 3, 1997

Mr. Victor S. Rezendes
Director, Energy, Resources,
and Science Issues
U.S. General Accounting Office
Washington, D.C. 20548

Dear Mr. Rezendes:

Your letter of December 16, 1996, requested our review and comment on the U.S. General Accounting Office's draft report entitled "Nuclear Waste: Impediments to Completing the Yucca Mountain Repository Project." I have enclosed our comments for your consideration in response to your request.

Sincerely,

Original signed by
James M. Taylor

James M. Taylor
Executive Director
for Operations

Enclosure: As stated

TICKET: EDO G960942

DISTRIBUTION: Central File DWM r/f-t/f MBell JDavis JHolonich
MWeber NMSS r/f CPoland PUBLIC PAHL r/f-t/f
SECY JMilhoan JBlaha CDolinka GAO File

DOCUMENT NAME: S:\DWM\PAHL\RLJ\REZENDES.GAO

JL PROOFED 12/24 FOR CJP

OFC	PAHL	PAHL	PAHL	TECH EDITOR	DWM	DWM
NAME	RJohnson	JThoma	JAustin	EKraus	MFederline	JGreaves
DATE	12/23/96		12/23/96		12/23/96	12/23/96
OFC	NMSS	NMSS	DEDS	EDO	OCM/SJ	
NAME	MKnapp	CPaperie	HThompson	JTaylor	SJackson*	
DATE	12/24/96	12/24		12/27/96	01/03/97	

OFFICIAL RECORD COPY

*w/edits, see attached.

LSS : YES ___ NO X
ACNW: YES ___ NO X
IG : YES ___ NO X
~~PDR~~ : YES ___ NO X

Delete file after distribution: Yes ___ No X

9701130151 970103
PDR WASTE
WM-11 PDR

130052

Delete: ACNW

97-03

WM-11
102

U.S. NUCLEAR REGULATORY COMMISSION COMMENTS ON
THE U.S. GENERAL ACCOUNTING OFFICE DRAFT REPORT ENTITLED "NUCLEAR WASTE:
IMPEDIMENTS TO COMPLETING THE YUCCA MOUNTAIN REPOSITORY PROJECT"

1. Clarify the impact of NRC's budget reductions.

Page 20 of the U.S. General Accounting Office (GAO) draft report states that the U.S. Nuclear Regulatory Commission stopped reviewing 3 of the 10 key technical issues because of budget reductions. This sentence should be revised to state that: "For FY 1996 and 1997, NRC eliminated its contractor support for 3 of the 10 key technical issues, but the staff assigned to these issues have monitored and will monitor U.S. Department of Energy (DOE) activities to address the most significant regulatory issues to the extent limited resources permit. As a result, future reviews for these three issues will be limited and based on available knowledge unless the NRC obtains the requested funding for these reviews. There will be no further independent studies and regulatory issues will be bounded by conservative assumptions."

The last sentence in the paragraph at the top of page 21 should also be revised as follows: "If this budget trend continues, according to NRC's staff, the Agency would have to discontinue contractor work on two more key technical issues, and would not be able to complete its license review in the 3-year licensing period required by the Nuclear Waste Policy Act of 1982 (NWPA)."

The following revisions to the last sentence in the first full paragraph on page 21 should also be made: "For technical issues where contractor technical work has been eliminated, NRC's reviews of DOE's designs and technical basis for performance assessments and cost estimates in the viability assessment will be limited and based on conservative assumptions and available knowledge."

2. Recognize the importance of ongoing NRC feedback to DOE.

Page 21 of the draft report describes NRC's review and comment on DOE's viability assessment as providing the first insights into NRC's formal position regarding the contents of an acceptable license application. The draft report also states that the first formal opportunity for providing a formal position are the comments provided to DOE in January 2000. The report should be revised to recognize that: "For years the staff's prelicensing reviews and interactions with DOE have documented feedback to DOE regarding what is needed for licensing. Continuing to provide DOE feedback is a primary objective of resolving key technical issues under NRC's refocused program. Therefore, the staff considers that its comments on DOE's plans for the license application in the viability assessment will reflect whatever significant differences remain between the staff and DOE as a result of our ongoing issue resolution efforts with DOE. Interactions with DOE will continue after the viability assessment and will focus on resolving the remaining differences important to licensing. Should such differences persist, they will be documented in the Commission's preliminary comments on the sufficiency of at-depth site characterization analysis and waste form to be included in DOE's site recommendation report."

3. Clarify NRC comments on waste package testing and performance.

The concerns attributed to NRC's representatives at the repository site in Appendix II, page 53, were actually statements made in an Observation Audit Report by NRC Headquarters staff, dated August 23, 1995. Although it is true that limited data will be available on performance of waste package materials at time of license application, it may still be possible to show, with reasonable assurance, that the overall system performance standard is met. NRC regulations anticipate that, at time of license application, additional research and development may be required to confirm the adequacy of the design and require DOE to provide a detailed description of programs designed to resolve safety questions. NRC regulations provide that a construction authorization granted to DOE may have conditions related to satisfactory resolution of safety questions for which research and development are being conducted.

4. Clarify DOE's schedule for site recommendation and need for standards and regulations.

The draft GAO report states on page 15 that DOE needs to have the standards and licensing regulations in place by July 1998 to meet DOE's schedule for making the site-suitability determination in July 1999. DOE's plans indicate that it will complete a 10 CFR Part 960 Compliance Report, not the formal site-suitability determination, in July 1999. The Compliance Report will be followed by numerous other activities needed to support a proposed site recommendation to the Secretary of Energy in May 2001 and a final site recommendation to the President in July 2001. Although NRC agrees that the standards and regulations should be available for DOE to complete its Compliance Report, this report is followed by 2 years of other supporting work before the final Agency action of site recommendation. NRC suggests that the GAO report clarify that the Compliance Report in July 1999 is an initial step toward the final site-suitability determination in the site recommendation to the President in July 2001.

5. Clarify reference to NRC's preliminary sufficiency comments required by NWSA.

In a number of places, the draft GAO report (e.g., pages 15 and 21) refers to NRC's preliminary comments on sufficiency of investigations for a license application. NRC suggests that where it is first used, the text be revised to give the more specific wording of NWSA. In particular, it is suggested that the second paragraph on page 15 be revised to read

"Among other things, the comprehensive statement must contain NRC's preliminary comments on the sufficiency for a license application of DOE's analysis of its investigation of Yucca Mountain and the proposed form of the waste, concerning the extent to which the at-depth site characterization analysis and waste form proposal for such site seem to be sufficient for inclusion in any license application."

Subsequently, these comments could be more simply referred to as: "The Commission's preliminary sufficiency comments required by NWSA."

The draft GAO report states on page 15 that NRC would not be in a position to comment on the sufficiency of DOE's site investigation unless the standards and

regulations have been issued. This sentence should be revised to indicate NRC would not be in a position to finalize its preliminary sufficiency comments required by NWPA until the final standards and regulations have been issued.

6. Schedule for completing revisions to NRC regulations.

The draft GAO report states on pages 13 and 14 that prior experience indicates that it could take 2 years or longer to issue the new standards and revised licensing regulations. Although it is true that it took 2 years from proposed to final technical requirements in 10 CFR Part 60, NRC did not have a statutory deadline at the time. The GAO report should be revised to recognize that: "Under the Energy Policy Act of 1992, NRC is directed to modify its regulations no later than 1 year after the U.S. Environmental Protection Agency (EPA) promulgates its standards."

On page 38 the draft report states that DOE has advised the staff that it needs NRC to complete its revisions to its licensing regulations 1 year before DOE makes its determination of site suitability and 2 years beforehand if NRC makes major changes to the regulations. NRC staff does not have a record or recollection of receipt of this information.

7. Strategy for revising NRC's regulations.

The last sentence in the first paragraph on page 13 should be revised as follows: "For example, when NRC's staff provides the Commission with comments on EPA's proposed standards for the Commission's consideration, the staff also plans to provide the Commission with a strategy for revising NRC's licensing regulations, including the need for subsystem performance requirements."

In addition, page 35, paragraph one, should be revised as follows: "The staff expects to review...."

Finally, the second paragraph on page 17 should be revised to read: "Currently, NRC's regulations require DOE to demonstrate compliance with EPA's generally applicable environmental standards. However, the EPA standards have been revised to pertain to repositories at sites other than Yucca Mountain."

8. Limitations of DOE activities in key areas.

The key areas identified in Appendix II are included in the ten Key Technical Issues identified by staff, and are being addressed in interactions between the staff and DOE. The significance of the limited data cited by GAO to total system performance is still undergoing evaluation. Studies to date have not shown a significant negative impact on performance as the result of the steep gradient noted in Appendix II of the draft GAO report. Also, although the results of thermal testing and corrosion testing of candidate waste package materials may be limited at time of license application, NRC regulations recognize that available information may be limited and provide for additional research and development to be conducted after license application and also require a program of performance confirmation to confirm that natural and engineered barriers are functioning as intended.

9. DOE's hydrology program.

Appendix II discusses the limitations of DOE's hydrology program and makes a number of recommendations for additional testing. Considering the limitations on resources available for additional testing, NRC recommends concentrating testing programs on parameters and processes found to be most significant to total system performance.

10. DOE's thermal testing strategy.

Appendix II identifies the effects of heat on the surrounding rock, the ground water and the waste packages as a key issue, and the staff agrees and has included these effects in three of the Key Technical Issues it has identified as needing resolution. Staff has been interacting with DOE on DOE's thermal testing strategy, to achieve issue resolution. DOE has developed a thermal testing strategy involving a series of tests of increasing size and complexity to acquire the needed information. NRC's principal concern is that the testing be representative of the range of repository conditions, rather than the scale or duration of the tests. The thermal testing data that will be available at DOE's current planned date of license application will be limited and will need to be confirmed by additional data collected during performance confirmation. If the observations during the performance confirmation program differ significantly from the original design bases and assumptions in the license application, NRC regulations provide that the design may be modified through the license amendment process.



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

Mr. Victor S. Rezendes
Director, Energy, Resources,
and Science Issues
U.S. General Accounting Office
Washington, D.C. 20548

Dear Mr. Rezendes:

Your letter of December 16, 1996, requested our review and comment on the U.S. General Accounting Office's draft report entitled "Nuclear Waste: Impediments to Completing the Yucca Mountain Repository Project." I have enclosed our comments for your consideration in response to your request.

Sincerely,

James M. Taylor
Executive Director
for Operations

Enclosure: As stated



UNITED STATES
NUCLEAR REGULATORY COMMISSION

January 3, 1997

Mr. Victor S. Rezendes
Director, Energy, Resources,
and Science Issues
U.S. General Accounting Office
Washington, D.C. 20548

Dear Mr. Rezendes:

Your letter of December 16, 1996, requested our review and comment on the U.S. General Accounting Office's draft report entitled "Nuclear Waste: Impediments to Completing the Yucca Mountain Repository Project." I have enclosed our comments for your consideration in response to your request.

Sincerely,

James M. Taylor
Executive Director
for Operations

Enclosure: As stated

January 3, 1997

Mr. Victor S. Rezendes
Director, Energy, Resources,
and Science Issues
U.S. General Accounting Office
Washington, D.C. 20548

Dear Mr. Rezendes:

Your letter of December 16, 1996, requested our review and comment on the U.S. General Accounting Office's draft report entitled "Nuclear Waste: Impediments to Completing the Yucca Mountain Repository Project." I have enclosed our comments for your consideration in response to your request.

Sincerely,

Original signed by
James M. Taylor

James M. Taylor
Executive Director
for Operations

Enclosure: As stated

TICKET: EDO G960942

DISTRIBUTION: Central File DWM r/f-t/f MBell JDavis JHolonich
MWeber NMSS r/f CPoland PUBLIC PAHL r/f-t/f
SECY JMilhoan JBlaha CDoinka GAO File

DOCUMENT NAME: S:\DWM\PAHL\RLJ\REZENDES.GAO

JL PROOFED 12/24 FOR CJP

OFC	PAHL	PAHL	PAHL	TECH EDITOR	DWM	DWM
NAME	RJohnson	JThoma	JAustin	EKraus	MFederline	JGreeves
DATE	12/23/96		12/23/96		12/23/96	12/23/96
OFC	NMSS	NMSS	DEDS	EDO	OCM/SJ	
NAME	MKnapp	CPaper	HThompson	JTaylor	SJackson*	
DATE	12/24/96	12/24		12/27/96	01/03/97	

OFFICIAL RECORD COPY

*w/edits, see attached.

LSS : YES ___ NO
ACNW: YES ___ NO
IG : YES ___ NO
PDR : YES ___ NO

Delete file after distribution: Yes ___ No

1/3 Betty - Please
use this ticket
ACTION

EDO Principal Correspondence Control

FROM: DUE: 12/18/96

EDO CONTROL: G960942
DOC DT: 12/16/96
FINAL REPLY:

Victor S. Rezendes
GAO

TO: Chairman Jackson

FOR SIGNATURE OF : ** PRI **
Executive Director

CRC NO:

DESC: REQUEST COMMENTS ON DRAFT REPORT TO CONGRESS ON
NUCLEAR WASTE: IMPEDIMENTS TO COMPLETING THE
YUCCA MOUNTAIN REPOSITORY PROJECT

ROUTING:
Taylor
Milhoan
Thompson
Blaha
Dolinka
GAO File
SECY

DATE: 12/16/96

ASSIGNED TO: CONTACT:
NMSS Paperiello

SPECIAL INSTRUCTIONS OR REMARKS:

Put Chairman on for concurrence. Chairman's Office
to review response prior to dispatch.

Comments due to GAO ²⁷ 12/20/96.

Expressed per GAO. Comments due to GAO 12/29/96.

ACTION: AUSTIN
Due to DWM NOON 12/17
Director's Office: ~~XXXXXXXXXX~~

DWM Action
Due to NMSS Director's Office
By 3:00 p.m. 12/17/96
rec'd 12/16/96

cc: GREEVES
FEDERLING
DAVIS
BELL
EISENBERG