

MD/DESIGN REVIEW

JUL 17 1991

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Mr. Dwight E. Shelor, Associate Director
for Systems and Compliance
Office of Civilian Radioactive Waste Management
U. S. Department of Energy, RW 30
Washington, D.C. 20585

Dear Mr. Shelor:

SUBJECT: SUMMARY OF JUNE 17 TO JUNE 21, 1991, EXPLORATORY STUDIES
FACILITY (ESF) NORTH AREA DESIGN REVIEW VISIT


Enclosed for your information is the summary of the June 17 to June 21, 1991, U.S. Nuclear Regulatory Commission (NRC) staff observation of the ESF North Area Design Studies Review (Design Studies Review) and associated NRC staff scoping review of the U.S. Department of Energy's (DOE) ESF Alternatives Study" (ESFAS). NRC staff members participating included: M. Delligatti - Team Leader, D. Gupta, J. Gilray and P. Prestholt.

The NRC staff found that DOE was well prepared for the Design Study Review and was willing to provide all observers with copies of any materials related to the Design Studies Review. DOE also provided the NRC staff with all available materials related to the ESFAS. The daily meetings with observers to discuss concerns and observations were useful especially because of DOE's focus on resolving issues related to both the Design Studies Review and the ESFAS.

If you have any questions concerning the summary or other aspects of the NRC staff visit, please contact Mark Delligatti, the cognizant project manager, at FTS/301 492-0430.

Sincerely,

(Original Signed by

for 

John J. Linehan, Acting Director
Repository Licensing and Quality
Assurance Project Directorate
Division of High-Level Waste Management
Office of Nuclear Material Safety
and Safeguards

Enclosure: As Stated

cc: See page 2

* See previous concurrence

OFC	:HLPD	:HLGE*	:HLGE*	:HLGE*	:HLPD	:HLWM	:HLWM
NAME	:MDelligatti/d:	DGupta	:MNataraja	:RBallard	:JHAdonich	:JLinehan	:JYoungblood
DATE	:07/17/91	:07/10/91	:07/20/91	:07/11/91	:07/17/91	:07/ /91	:07/ /91

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The NRC staff found that DOE was well prepared for the Design Study Review and was willing to provide all observers with copies of any materials related to the Design Studies Review. DOE also provided the NRC staff with all available materials related to the ESFAS. The daily meetings with observers to discuss concerns and observations were carried out in a professional manner and demonstrated DOE's interest in resolving issues related to both the Design Studies Review and the ESFAS. The NRC staff especially appreciated the effort that Dr. Dobson and Mr. Petrie of the Yucca Mountain Site Characterization Project Office, and Dr. Voegle of Sciene Applications International Corporation and their staffs made to answer questions and provide additional materials, as requested.

If you have any questions concerning the summary or other aspects of the NRC staff visit, please contact Mark Delligatti, the cognizant project manager, at FTS/301 492-0430.

Sincerely,

John J. Linehan, Acting Director
Repository Licensing and Quality
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cc: See page 2

OFC	:HLPD	<i>mtw</i>	:HLGE	<i>dcg</i>	:HLGE	<i>RN</i>	:HLGE	<i>PLB</i>	:HLPD	:HLWM	:HLWM
NAME	:MDelligatti/d:	DGupta	:MNataraja	:RBNard	:JHolonich	:JLinehan	:JYoungblood				
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MD/DESIGN REVIEW

Mr. Dwight E. Shelor

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- cc: R. Loux, State of Nevada
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M. Baughman, Lincoln County, NV
D. Bechtel, Clark County, NV
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Summary of the U.S Nuclear Regulatory Commission (NRC) Staff Observation
of the U.S Department of Energy (DOE)
Exploratory Studies Facility (ESF) North Area Design Studies Review

During the week of June 17, 1991, members of the NRC staff observed the DOE ESF North Area Design Studies Review (Design Studies Review) at DOE's Yucca Mountain Site Characterization Project Office (YMPO) in Las Vegas, NV. This was an independent design review carried out for DOE by Raytheon Corporation which is acting as Architect/Engineer for the ESF. Other observers included representatives from the State of Nevada, Affected Units of Local Government, and the staff of the Nuclear Waste Technical Review Board. In addition to observing the Design Studies Review, the NRC staff also carried out a scoping review of the two volume ESF Alternatives Study (ESFAS) to enable them to prepare and implement their ESFAS review process in a timely manner.

The first day of the Design Studies Review primarily involved a discussion of various aspects of the ESF design process. Attachment 1 is a copy of the first day's agenda. After the agenda was completed, copies of the Design Studies Review materials were provided to the reviewers and observers. Reviewers and observers were then asked to begin their review of these materials. Time was provided each afternoon for discussions between appropriate DOE staff and the observers. In addition, members of YMPO were available for additional discussions and to answer questions for the observers. The Design Studies Review proceeded for the remainder of the week with one-on-one meetings between reviewers and cognizant staff to attempt to resolve the comments.

Several important questions were discussed in the course of the interactions between DOE and the observers. A concern of the NRC staff dealt with the way in which DOE interpreted and attempted to comply in the ESFAS with the requirement of Title 10 of the Code of Federal Regulations Part 60.21(c)(1)(ii)(D) for an assessment by DOE of:

the effectiveness of engineered and natural barriers, including barriers that may not be themselves a part of the geologic repository operations area, against the release of radioactive material to the environment. The analysis shall also include a comparative evaluation of alternatives to the major design features that are important to waste isolation, with particular attention to the alternatives that would provide longer radionuclide containment and isolation.

DOE explained that they had attempted to comply with this requirement in several ways. Individual design features were analyzed in terms of their contribution to meeting applicable 10 CFR Part 60 requirements. Design features were grouped into design options and sensitivity analyses were done to determine which features were most important to waste isolation. Finally, the

ENCLOSURE

options were compared and ranked. It should be noted that DOE also offered to provide NRC with additional information (e.g., participant notebooks, transcripts of meetings). This information will be reviewed when the ESFAS is submitted to NRC.

The NV observer noted that the grade of the ramp in the reference ESF design was quite steep. DOE agreed to consider whether a grade that was less steep needed to be considered.

In addition to the comments provided by the NRC staff to DOE at various meetings, the NRC staff also provided several observation comments to the Design Studies Review Team regarding the need to place tighter document controls on the procedure describing the independent technical review process. The Design Review Team agreed to identify this procedure by a unique procedure number and provide controls for the revision and issuance of each page within procedures.

AGENDA

FOR

EXPLORATORY STUDIES FACILITY

NORTH AREA DESIGN STUDIES REVIEW

Opening Remarks	Ted Petrie	30 min	8:30-9:00
Introduction	Dick Bullock	10 min	9:00-9:10
Review Administration, and Training	Joe Calovini	10 min	9:10-9:20
Scope of Design Studies	Randy Schreiner	15 min	9:20-9:35
Review Criteria	Randy Schreiner	15 min	9:35-9:50
Break		10 min	
Development of the Technical Requirements	Ralph Schneider	30 min	10:00-10:30
Technical Presentation			
Access in North Area	Bolek Chytrowski	30 min	10:30-11:00
Test Functions	Ned Elkins	30 min	11:00-11:30
Environmental Issues	Monica Dussman	30 min	11:30-12:00
Lunch			
Design Documentation	Jim Grenia	30 min	1:30-2:00
Open Issues	Dick Bullock	30 min	2:00-2:30
Resolution of SCA "Design Control Process" Concerns and Regulatory Issues	Mike Glora	30 min	2:30-3:00