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QUALITY ASSURANCE REVIEW OF SALT ENVIRONMENTAL ASSESSMENTS

SUMMARY

REVIEWER: Adrian Brown, Nuclear Waste Consultants

DATE OF REVIEW: July 21-24, 1986

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Nuclear Waste Consultants Inc

This quality assurance review has been performed in order to provide assistance to the Nuclear Regulatory Commission (NRC) evaluation of the Department of Energy (DOE) Final Environmental Assessment (FEA) of three salt sites: Deaf Smith Site (Texas); Richton Dome Site (Mississippi); and Davis Canyon (Utah). The review was conducted as set out in the "Quality Assurance Procedure for Assessing Technical Adequacy of Staff Review on Final Environmental Assessments (FEA)" (NRC document identified JK 04/17/86 QA PROCEDURE FEA). The review activities are described in terms of the steps identified in that document.

1. Select FEA site proposed by DOE for Q/A assessment

The Deaf Smith site was chosen for primary Q/A checking, as a result of the selection of this site for site characterization by the Secretary of Energy. The evaluation of Richton Dome and Davis Canyon was also included in the review at a spot-check level, to ensure comparability between the NRC's review of all salt sites.

2. Perform audit review of summary identifying NRC's previous major review comments on Draft Environmental Assessment (DEA)

Prior to arriving at Silver Spring for the review, the auditor read

in detail the geomechanics portions of the Deaf Smith FEA, and reviewed the corresponding portions of the Richton Dome and Davis Canyon FEAs. On arrival at Silver Spring, the three major comments made by NRC on the DEAs for each salt site were reviewed. These comments were found to be essentially identical for each site, so it was decided to concentrate on the Deaf Smith site. The three major comment areas were: 1) Effects of heterogeneities on DEA findings; 2) Feasibility of Shaft Sealing; and 3) Feasibility of Canister Retrieval.

3. Select one or more of the identified major review comments for Q/A auditing. Selection would be guided by the importance of the topic on FEA review conclusions (e.g. unresolved issue) and/or the acknowledged review responsibility of the Q/A technical reviewer.

Upon review, it was decided to perform a Q/A audit on all three of the major comment areas. This was prompted by the clear importance of each of the areas to licensing, and the extent and nature of the DEA comments.

4. Identify and contact the staff/contractor team member(s) responsible for assessing the adequacy and acceptability of the DOE response to the Q/A selected major review comment.

The auditor was introduced by Mysore Nataraja (Q/A effort leader) to Naiem Tanious and Jerry Pearing, NRC team members responsible for the assembly of the three major comments on the FEA (and on the DEA).

5. Meet with the identified team member(s). Preparations by team member(s) prior to meeting should include:

- a. Assembling of pertinent documents (DEA, FEA, Key references, etc.).
- b. Identification of specific and prior staff review comments.
- c. Supporting basis for status and staff position in review as recorded on completed Final EA Comment Form and which is in compliance with the SRP guidance.

The auditor met with the team members. The materials identified were provided by Nataraja.

6. In meeting with the team member(s) make audit selection of the staff review effort (e.g. selected items from the staff completed Draft and Final Comment Form) in order to understand the scope of review, the technical correctness of the positions taken for resolution of the FEA issue.

The full file of the major comment, the detailed comment backup, and any backup analyses were made available to the auditor in the original.

7. Staff/contractor members should be prepared to provide and explain for the Q/A technical reviewer's verification, the references, data, computations and basis for conclusions which were used in the staff's assessment of the EA's.

Staff were prepared appropriately.

8. Make Q/A decision on adequacy of staff review effort and conclusions. If further effort is required, have clear understanding of remaining review work and establish definite arrangement for future meeting.

Q/A decisions are presented on attached "Q/A Assessment Form for FEA Review Effort" (one for each major comment). The review determined that the findings of the NRC staff in one comment (on Heterogeneity) were not fully supported by the backup material, and modifications to the wording of the comment were suggested, and agreed to by the staff. The other two comments were found to be supported, and no modifications were recommended. No additional review work or additional meetings were therefore considered necessary.

9. Both the Q/A technical reviewer and staff member(s) should sign the Q/A Assessment Form (attached) when the Q/A assessment is completed and the audited FEA review comment is judged to be technically correct and adequately addressed. Highlighting of the next activity (e.g. SCP review or specific date) for review issues that are deferred should also be noted on the Form).

The heterogeneity comment has been modified appropriately, and the Q/A Assessment Forms for all comments have been signed and are attached. It should be noted that each of the major comment areas

remains a matter of concern to the NRC, and pre-site characterization interactions between NRC and DOE are recommended by staff.

10. The assigned staff team member(s) and project manager will be responsible for the continuing effort needed for tracking unresolved and deferred review topics until the issue is fully resolved (e.g. at the SCP stage or the LA stage).

Q/A ASSESSMENT FORM FOR FEA REVIEW EFFORT

Q/A TECHNICAL REVIEWER: Adrian Brown, Nuclear Waste Consultants

DATE OF Q/A TECHNICAL REVIEW: June 21-23, 1986

A. FEA SITE SELECTED FOR Q/A ASSESSMENT: Deaf Smith Salt Site

B. MAJOR REVIEW COMMENT SELECTED FOR Q/A AUDITING: Effects of  
Rock Mass Heterogeneity

C. DATE OF Q/A ASSESSMENT MEETING WITH STAFF/CONTRACTOR MEMBERS:  
June 23, 1986

D. Q/A ASSESSMENT CONCLUSION(S).

1. AUDITED FEA REVIEW COMMENT SHOWN TO BE TECHNICALLY CORRECT  
AND ADEQUATELY ADDRESSED.

**E. APPROVAL SIGNATURES**

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**STAFF/CONTRACTOR**

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**DATE**

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**ADRIAN BROWN, Q/A TECHNICAL REVIEWER**

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**DATE**

Q/A ASSESSMENT FORM FOR FEA REVIEW EFFORT

Q/A TECHNICAL REVIEWER: Adrian Brown, Nuclear Waste Consultants

DATE OF Q/A TECHNICAL REVIEW: June 21-23, 1986

A. FEA SITE SELECTED FOR Q/A ASSESSMENT: Deaf Smith Salt Site

B. MAJOR REVIEW COMMENT SELECTED FOR Q/A AUDITING: Shaft Sealing

C. DATE OF Q/A ASSESSMENT MEETING WITH STAFF/CONTRACTOR MEMBERS: June 23, 1986

D. Q/A ASSESSMENT CONCLUSION(S).

1. AUDITED FEA REVIEW COMMENT SHOWN TO BE TECHNICALLY CORRECT AND ADEQUATELY ADDRESSED.

E. APPROVAL SIGNATURES

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STAFF/CONTRACTOR

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DATE

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ADRIAN BROWN, Q/A TECHNICAL REVIEWER

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DATE

Q/A ASSESSMENT FORM FOR FEA REVIEW EFFORT

Q/A TECHNICAL REVIEWER: Adrian Brown, Nuclear Waste Consultants

DATE OF Q/A TECHNICAL REVIEW: June 21-23, 1986

A. FEA SITE SELECTED FOR Q/A ASSESSMENT: Deaf Smith Salt Site

B. MAJOR REVIEW COMMENT SELECTED FOR Q/A AUDITING: Proof of Principle Demonstration of Retrievability

C. DATE OF Q/A ASSESSMENT MEETING WITH STAFF/CONTRACTOR MEMBERS:  
June 23, 1986

D. Q/A ASSESSMENT CONCLUSION.

1. AUDITED FEA REVIEW COMMENT SHOWN TO BE TECHNICALLY CORRECT AND ADEQUATELY ADDRESSED.

E. APPROVAL SIGNATURES

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STAFF/CONTRACTOR

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DATE

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ADRIAN BROWN, Q/A TECHNICAL REVIEWER

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DATE

COST BREAK-OUT

Labor

A. Brown	46 hrs @ \$47.25/hr	\$ 2,173.50
	TOTAL LABOR	\$ 2,173.50

Actual Expenses

Travel

Airfare (to WDC) Brown	\$ 344.00
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Miscellaneous Travel Expenses (car rental, parking, mileage)	\$ 264.53
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Motel

Brown (1 night @ \$58.86/; (3 nights @ \$48.95)	\$ 205.71
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Meals

Brown	\$ 52.62
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Miscellaneous Expenses

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TOTAL EXPENSES:	\$ 866.86
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