

FEB 8 1993

89001770

Mr. John P. Roberts, Acting Associate Director
for Systems and Compliance
Office of Civilian Radioactive Waste Management
U. S. Department of Energy
1000 Independence Avenue, SW
Washington, D. C. 20585

Dear Mr. Roberts:

SUBJECT: CLOSURE OF SITE CHARACTERIZATION ANALYSIS COMMENTS 100, 104, 106,
108, 110, 112, AND 113

On August 31, 1992 (letter from Roberts to Holonich), the U.S. Department of Energy (DOE) requested closure of seven open items (Comments 100, 104, 106, 108, 110, 112, and 113) identified in the Nuclear Regulatory Commission staff's Site Characterization Analysis (SCA). Based on the information provided by DOE, the NRC staff has concluded that all seven of those SCA open items are resolved.

Enclosure 1 is a list of all SCA concerns and their current status. Enclosure 2 contains the results of the NRC staff's review of the information provided by DOE.

NRC urges DOE to continue to work toward closure of all SCA open items and is prepared to meet with DOE as necessary to ensure that NRC concerns are fully understood. If you have questions about these or other SCA open items, please contact Ms. Charlotte Abrams of my staff at (301) 504-3403.

Sincerely,

JS

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

Enclosures: As stated

cc's: See next page
* See previous concurrence

OFC	HLPD <i>CA</i>	E	HLHP*	E	HLHP*	E	HLPD <i>JS</i>	N
NAME	CAbrams/dh		DFehringer		MFederline		JHolonich	
DATE	02/08/93		02/01/93		02/02/93		02/10/93	

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- cc: R. Loux, State of Nevada
- T. J. Hickey, Nevada Legislative Committee
- C. Gertz, DOE/NV
- S. Bradhurst, Nye County, NV
- M. Baughman, Lincoln County, NV
- D. Bechtel, Clark County, NV
- D. Weigel, GAO
- P. Niedzielski-Eichner, Nye County, NV
- B. Mettam, Inyo County, CA
- V. Poe, Mineral County, NV
- F. Sperry, White Pine County, NV
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STATUS OF SCA OPEN ITEMS

<u>SCA Open Item</u>	<u>Status</u>
Objection 1	Resolved 11/2/92
2	Resolved 3/2/92
Comment 1	Open
2	Open
3	Open
4	Open
5	Open
6	Open
7	Open
8	Open
9	Open
10	Open
11	Open
12	Resolved 11/2/92
13	Resolved 7/31/91
14	Resolved 7/31/91
15	Open
16	Resolved 11/2/92
17	Resolved 7/31/91
18	Open
19	Open
20	Open
21	Open
22	Open
23	Resolved 7/31/91
24	Open
25	Open
26	Resolved 7/31/91
27	Resolved 7/31/91
28	Resolved 7/31/91
29	Resolved 7/31/91
30	Resolved 7/31/91
31	Open
32	Open
33	Open
34	Open
35	Resolved 11/2/92
36	Open (under review)
37	Resolved 7/31/91
38	Resolved 7/31/91
39	Resolved 7/31/91
40	Resolved 7/31/91
41	Resolved 7/31/91
42	Open (under review)
43	Open (under review)

STATUS OF SCA OPEN ITEMS (Continued)

SCA Open Item	Status
Comment 44	Resolved 7/31/91
45	Open
46	Resolved 7/31/91
47	Open
48	Open
49	Open
50	Resolved 7/31/91
51	Open
52	Open
53	Open
54	Resolved 7/31/91
55	Open
56	Open
57	Resolved 11/2/92
58	Resolved 7/31/91
59	Open
60	Open
61	Open
62	Open
63	Open
64	Open
65	Resolved 7/31/91
66	Open
67	Resolved 7/31/91
68	Open
69	Open
70	Resolved 7/31/91
71	Open
72	Resolved 11/2/92
73	Open
74	Open
75	Open
76	Resolved 7/31/91
77	Open
78	Resolved 7/31/91
79	Open
80	Open
81	Open
82	Open
83	Resolved 7/31/91
84	Open
85	Open
86	Open
87	Open
88	Open
89	Open
90	Open
91	Open
92	Resolved 7/31/91

STATUS OF SCA OPEN ITEMS (Continued)

SCA Open Item	Status
Comment 93	Resolved 7/31/91
94	Resolved 7/31/91
95	Open
96	Open
97	Resolved 7/31/91
98	Open
99	Open
100	Resolved (this letter)
101	Open
102	Open
103	Open
104	Resolved (this letter)
105	Open
106	Resolved (this letter)
107	Resolved 7/31/91
108	Resolved (this letter)
109	Open
110	Resolved (this letter)
111	Resolved 7/31/91
112	Resolved (this letter)
113	Resolved (this letter)
114	Resolved 7/31/91
115	Open
116	Open
117	Open
118	Open
119	Open
120	Open
121	Open
122	Open
123	Open
124	Resolved 7/31/91
125	Resolved 7/31/91
126	Resolved 7/31/91
127	Resolved 11/2/92
128	Resolved 11/2/92
129	Resolved 7/31/91
130	Open
131	Resolved 7/31/91
132	Resolved 11/2/92
133	Resolved 7/31/91
Question 1	Open (under review)
2	Resolved 7/31/91
3	Open
4	Resolved 7/31/91
5	Open (under review)
6	Resolved 7/31/91
7	Resolved 7/31/91

STATUS OF SCA OPEN ITEMS (Continued)

SCA Open Item	Status
Question 8	Open
9	Open
10	Resolved 7/31/91
11	Resolved 7/31/91
12	Open
13	Resolved 7/31/91
14	Open
15	Open
16	Resolved 7/31/91
17	Open
18	Resolved 7/31/91
19	Resolved 7/31/91
20	Open
21	Open
22	Open
23	Open
24	Resolved 7/31/91
25	Open
26	Resolved 7/31/91
27	Resolved 7/31/91
28	Open
29	Resolved 7/31/91
30	Open
31	Open (under review)
32	Open
33	Open
34	Open
35	Open
36	Open
37	Open
38	Open
39	Open
40	Open
41	Open
42	Open
43	Resolved 7/31/91
44	Open
45	Open
46	Open
47	Open
48	Resolved 7/31/91
49	Open
50	Resolved 7/31/91
51	Open
52	Resolved 7/31/91
53	Open
54	Resolved 7/31/91
55	Open
56	Open

STATUS OF SCA OPEN ITEMS (Continued)

SCA Open Item	Status
Question 57	Open
58	Open
59	Open
60	Resolved 7/31/91
61	Resolved 11/2/92
62	Open
63	Resolved 7/31/91

Enclosure 2

Section 8.3.5.13 Total System Performance

SCA COMMENT 100

There are two problems with the sequences for faulty waste emplacement (pp. 8.35.13-32 to 33): (1) sequences for faulty waste emplacement establish the initial condition for the repository at time of closure and should not be included in the set of scenarios, and (2) the sequences are so limited, it is not clear that the site characterization program will acquire the data to analyze the likelihood and consequences of such initial defects.

EVALUATION OF DOE RESPONSE

- o DOE agrees that sequences for faulty waste emplacement should be treated as initial conditions of the repository system.
- o DOE expects to empirically generate information regarding faulty waste emplacement from quality-assurance procedures and training exercises preparatory to first waste emplacement and by inspections after emplacement.
- o The NRC staff considers this comment resolved.

Section 8.3.5.13 Total System Performance**SCA COMMENT 104**

The Ross sequences appear to be based entirely on spent fuel as the waste form; since these sequences presumably form a basis for the site characterization program, it is not clear that important scenarios that may be peculiar to vitrified HLW have not been omitted.

EVALUATION OF DOE RESPONSE

- o DOE states that its analysis will include all candidate waste forms in the assessment of the total system and sub-system performance measures.

- o The NRC staff considers this comment resolved.

Section 8.3.5.13 Total System Performance**SCA COMMENT 106**

There appears to be a missing coupling term in equation 8.3.5.13-12B; this equation is the primary basis for calculating liquid-phase radionuclide transport to the accessible environment.

EVALUATION OF DOE RESPONSE

- o DOE acknowledged that the SCP was in error, and that the missing term should be included as stated by the NRC staff.
- o The NRC staff considers this comment resolved.

9Section 8.3.5.13 Total System Performance**SCA COMMENT 108**

The use of the EPPM (expected partial performance measure) to screen scenarios and to establish goals for the performance allocation used to guide site characterization may be justified on a theoretical basis, but does not appear to be appropriately implemented in the SCP.

EVALUATION OF DOE RESPONSE

- o DOE does not plan to use EPPMs in future revisions and redirection of the site-characterization program.
- o Since the SCP was written, additional data and calculational exercises have given DOE new insights, e.g., regarding priorities for site characterization. DOE expects to continue to share such insights with the NRC staff and other interested parties in future technical exchanges. The NRC staff would also expect DOE to report any changes to the program baseline given in the SCP such as the removal of EPPMs to screen scenarios and any new information relevant to this concern in its semi-annual Progress Reports.
- o The NRC staff considers this comment resolved.

Section 8.3.5.13 Total System Performance**COMMENT 110**

The response to CDSCP comment 90 indicates that human intrusion is intended to be left out of the calculation of the CCDF, but the SCP text is unclear as to how human intrusion will be handled.

EVALUATION OF DOE RESPONSE

- o DOE agrees to follow the requirements of the final EPA HLW standards concerning human intrusion.
- o The NRC staff considers this comment resolved.
- o DOE purports to concur with the NRC "that unlikely human intrusion should not be included in the CCDF, but should have a separate test for compliance." The Commission has never adopted such a position, although the NRC staff has proposed the "three bucket concept" to EPA in which a probabalistic analysis for human intrusion might not be needed if human intrusion were determined to be unlikely.

Section 8.3.5.13 Total System Performance**COMMENT 112**

There is a gap in the discussion of the treatment of state variables as constants or as random variables.

EVALUATION OF DOE RESPONSE

- o DOE agrees with the points made by the NRC staff.
- o The NRC staff considers this comment resolved.

Section 8.3.5.13 Total System Performance**COMMENT 113**

The definition of the unit step function is not consistent with the definition of the CCDF.

EVALUATION OF DOE RESPONSE

- o DOE notes that a site whose projected releases are so close to the limit of the EPA standard that this difference in definitions would be important is probably not suitable anyway.
- o DOE argues that its definition is somewhat more conservative than the NRC's, and that DOE prefers to use the more conservative definition.
- o The NRC staff considers this comment resolved.

CONTACT:

D. Nigdy

PHONE#:

504-3387

MAIL STOP: OWFN 4-H-3

89001770

DOCUMENT NAME:

G: Moresca

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