Department of Energy
Office of Civilian Radioactive Waste Management
Yucca Mountain Site Characterization Office
P.O. Box 98608
Las Vegas, NV 89193-8608

WBS 1.2.5.2

DEC 08 1994

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Office of Nuclear Material Safety
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U.S. Nuclear Regulatory Commission
Washington, DC 20555

TABLES RELATING SITE CHARACTERIZATION PLAN (SCP) STUDY PLANS TO THE FAVORABLE AND POTENTIALLY ADVERSE CONDITIONS OF 10 CODE OF FEDERAL REGULATIONS (CFR) 60.122 (SCPB: N/A)

At an Exploratory Studies Facility (ESF) technical meeting between the U.S. Department of Energy (DOE) and the U.S. Nuclear Regulatory Commission on November 7, 1994, the staff made a verbal request for any information that identifies which SCP study plans are concerned with investigating the favorable and potentially adverse conditions in 10 CFR 60.122. Such information is contained in the Site Design and Test Requirements Document (YMP/CM-0021), which we sent to you in an enclosure to a letter dated November 1, 1993 (enclosure 1), along with several other requirements documents in the DOE's newly approved technical document hierarchy.

The six tables containing that information have been extracted and are enclosed with this letter (enclosure 2). Table 1 lists which study plans are concerned with the favorable conditions. Table 2 lists which study plans are concerned with potentially adverse conditions. Table 3 lists both the favorable and potentially adverse condition citations and the applicable study plans. Table 4 contains the same information as Table 3, but lists the information by study plan, rather than regulatory citation. Tables 5 and 6 are explanatory text for the study plan numbers and regulatory citation identifiers.

The study plans are for all studies in the SCP, and therefore apply to both surface-based studies and ESF-based studies.

YMP-5

102.8
WM-11
NH16

If you have any questions, please contact either William J. Boyle of the Assistant Manager for Scientific Programs office at (702) 794-7595, or Thomas W. Bjerstedt of my staff at (702) 794-7590.

Stephan J. Brocoum
Assistant Manager for
Suitability and Licensing

AMSL:CMN-1012

Enclosures:
1. Ltr, 11/1/93, Shelor to Holonich, w/encl
2. Six Tables from SD&TRD

cc w/encls:
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C. E. Einberg, HQ (RW-36) FORS
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Eureka County Board of Commissioners, Eureka, NV
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Lander County Board of Commissioners, Battle Mountain, NV
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ENCLOSURE 2

Table 1. SCP Study Plans vs. 10 CFR 60.122(b) Favorable Conditions Siting Criteria

SCP Study Plan	10CFR60.122(b) 1	2	3	4	5	6	7	8
8.3.1.2.1.1	X						X	X
8.3.1.2.1.2								X
8.3.1.2.1.3							X	X
8.3.1.2.1.4	X						X	
8.3.1.2.2.1	X						X	X
8.3.1.2.2.2							X	X
8.3.1.2.2.3							X	X
8.3.1.2.2.4	X						X	X
8.3.1.2.2.5							X	
8.3.1.2.2.6								
8.3.1.2.2.7								X
8.3.1.2.2.8	X						X	
8.3.1.2.2.9	X						X	X
8.3.1.2.3.1	X						X	X
8.3.1.2.3.2	X						X	
8.3.1.2.3.3	X						X	
8.3.1.3.1.1	X			X			X	
8.3.1.3.2.1	X			X				
8.3.1.3.2.2				X				
8.3.1.3.3.1				X				
8.3.1.3.3.2				X				
8.3.1.3.3.3				X				
8.3.1.3.4.1/.3			X					
8.3.1.3.3.4.2			X					
8.3.1.3.5.1/.2	X		X					
8.3.1.3.6.1			X					
8.3.1.3.6.2			X					
8.3.1.3.7.1			X	X				
8.3.1.3.7.2								
8.3.1.3.8.1								
8.3.1.4.2.1					X			X
8.3.1.4.2.2								
8.3.1.4.2.3								X
8.3.1.4.3.1								X
8.3.1.4.3.2								

SCP Study Plan	10CFR60.122(b) 1	2	3	4	5	6	7	8
8.3.1.5.1.1								
8.3.1.5.1.2								
8.3.1.5.1.3								
8.3.1.5.1.4								
8.3.1.5.1.5								
8.3.1.5.1.6								
8.3.1.5.2.1								
8.3.1.5.2.2								
8.3.1.6.1.1								
8.3.1.6.2.1								
8.3.1.6.3.1								
8.3.1.6.4.1								
8.3.1.8.1.1								
8.3.1.8.1.2								
8.3.1.8.2.1								
8.3.1.8.5.1								
8.3.1.8.5.2								
8.3.1.8.5.3								
8.3.1.9.1.1								
8.3.1.9.2.1								
8.3.1.9.2.2								
8.3.1.9.3.1								
8.3.1.9.3.2								
8.3.1.12.2.1								X
8.3.1.14.2								
8.3.1.15.1.1								
8.3.1.15.1.2								
8.3.1.15.1.3								
8.3.1.15.1.4								
8.3.1.15.1.5								
8.3.1.15.1.6								
8.3.1.15.1.7								
8.3.1.15.1.8								
8.3.1.15.2.1								
8.3.1.15.2.2								

SCP Study Plan	10CFR60.122(b) 1	2	3	4	5	6	7	8
8.3.1.16.1.1								
8.3.1.16.2.1								
8.3.1.16.3.1								
8.3.1.17.1.1								
8.3.1.17.2.1								
8.3.1.17.3.1								
8.3.1.17.3.2								
8.3.1.17.3.3.1								
8.3.1.17.3.3.2								
8.3.1.17.3.4								
8.3.1.17.3.5								
8.3.1.17.3.6								
8.3.1.17.4.1								
8.3.1.17.4.2								
8.3.1.17.4.3								
8.3.1.17.4.4								
8.3.1.17.4.5								
8.3.1.17.4.6								
8.3.1.17.4.7								
8.3.1.17.4.8								
8.3.1.17.4.9								
8.3.1.17.4.10								
8.3.1.17.4.11								
8.3.1.17.4.12								
8.3.1.20.1								
8.3.3.2.2.1								
8.3.4.2.4.1								
8.3.4.2.4.2								
8.3.4.2.4.3								
8.3.4.2.4.4								
8.3.4.2.4.5								

Notes: 10 CFR 122(b)(2) applies only to disposal in the saturated zone.
10 CFR 122(b)(6) concerns population density.

See Table 5 for SCP Study Plan vs Study Plan Titles.
See Table 6 for 10 CFR 60.122 Citation vs. Regulatory Text.

Table 2. SCP Study Plans vs. 10 CFR 60.122(c) Potentially Adverse Conditions Siting Criteria (Page 1 of 3)

SCP Study Plan	10 CFR 60.122(c)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
8.3.1.2.1.1																								
8.3.1.2.1.2	X										X				X	X								
8.3.1.2.1.3					X	X																	X	
8.3.1.2.1.4		X	X	X	X	X					X	X	X	X	X							X	X	
8.3.1.2.2.1		X			X	X																X	X	
8.3.1.2.2.2																								X
8.3.1.2.2.3																				X			X	X
8.3.1.2.2.4					X		X		X											X		X	X	X
8.3.1.2.2.5																								X
8.3.1.2.2.6																								X
8.3.1.2.2.7							X	X	X															X
8.3.1.2.2.8		X	X	X	X	X																	X	
8.3.1.2.2.9		X	X	X	X	X																X	X	X
8.3.1.2.3.1				X	X																	X	X	
8.3.1.2.3.2																						X		
8.3.1.2.3.3				X	X	X		X				X	X	X	X							X		
8.3.1.3.1.1							X	X	X															
8.3.1.3.2.1							X	X	X													X		
8.3.1.3.2.2							X	X	X		X	X	X	X	X									
8.3.1.3.3.1											X	X	X	X										
8.3.1.3.3.2											X	X	X	X	X									
8.3.1.3.3.3		X						X			X	X	X	X	X									
8.3.1.3.4.1/.3							X	X			X													
8.3.1.3.3.4.2											X													
8.3.1.3.5.1/.2							X	X																
8.3.1.3.6.1							X	X																
8.3.1.3.6.2								X																
8.3.1.3.7.1							X	X																
8.3.1.3.7.2																								
8.3.1.3.8.1																								X
8.3.1.4.2.1					X																			
8.3.1.4.2.2				X	X			X				X	X	X								X		
8.3.1.4.2.3				X	X															X				X
8.3.1.4.3.1			X																					

Notes: 10 CFR 60.122(c)(10) concerns dissolution.
See Table 5 for SCP Study Plan vs Study Plan Titles.
See Table 6 for 10 CFR 60.122 Citation vs. Regulatory Text.

Table 2. SCP Study Plans vs. 10 CFR 60.122(c) Potentially Adverse Conditions Siting Criteria (Page 2 of 3)

SCP Study Plan	10 CFR 60.122(c)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
8.3.1.4.3.2					X						X	X	X	X						X		X		
8.3.1.5.1.1						X																		
8.3.1.5.1.2						X																		
8.3.1.5.1.3						X																		
8.3.1.5.1.4						X										X								
8.3.1.5.1.5					X	X																X		
8.3.1.5.1.6					X	X																X	X	
8.3.1.5.2.1	X	X			X	X					X	X	X	X		X						X		
8.3.1.5.2.2			X	X	X	X																X	X	
8.3.1.6.1.1			X		X											X								
8.3.1.6.2.1																X								
8.3.1.6.3.1			X													X								
8.3.1.6.4.1			X		X											X								
8.3.1.8.1.1			X		X			X							X							X		
8.3.1.8.1.2			X		X			X							X							X		
8.3.1.8.2.1			X	X							X	X	X		X							X		
8.3.1.8.5.1															X									
8.3.1.8.5.2								X							X									
8.3.1.8.5.3											X													
8.3.1.9.1.1																	X							
8.3.1.9.2.1																	X							
8.3.1.9.2.2		X															X					X		
8.3.1.9.3.1		X															X		X					
8.3.1.9.3.2		X			X																	X		
8.3.1.12.2.1																								
8.3.1.14.2																		X						
8.3.1.15.1.1																								
8.3.1.15.1.2																								
8.3.1.15.1.3								X																
8.3.1.15.1.4								X																
8.3.1.15.1.5																				X	X			
8.3.1.15.1.6																								
8.3.1.15.1.7																					X			
8.3.1.15.1.8																				X	X			

Notes: 10 CFR 60.122(c)(10) concerns dissolution.
See Table 5 for SCP Study Plan vs Study Plan Titles.
See Table 6 for 10 CFR 60.122 Citation vs. Regulatory Text.

Table 2. SCP Study Plans vs. 10 CFR 60.122(c) Potentially Adverse Conditions Siting Criteria (Page 3 of 3)

SCP Study Plan	10 CFR 60.122(c)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
8.3.1.15.2.1																					X			
8.3.1.15.2.2																								
8.3.1.16.1.1	X															X								
8.3.1.16.2.1		X			X																			
8.3.1.16.3.1																								
8.3.1.17.1.1																								
8.3.1.17.2.1																								
8.3.1.17.3.1					X						X	X	X	X										
8.3.1.17.3.2													X	X										
8.3.1.17.3.3.1																								
8.3.1.17.3.3.2																								
8.3.1.17.3.4																								
8.3.1.17.3.5											X	X	X	X										
8.3.1.17.3.6											X	X	X	X										
8.3.1.17.4.1												X	X	X								X		
8.3.1.17.4.2																								
8.3.1.17.4.3				X																				
8.3.1.17.4.4			X																					
8.3.1.17.4.5				X																				
8.3.1.17.4.6			X	X	X			X			X	X	X	X								X	X	
8.3.1.17.4.7			X	X																		X		
8.3.1.17.4.8				X	X						X	X	X	X								X	X	
8.3.1.17.4.9			X	X	X						X	X	X	X									X	
8.3.1.17.4.10				X	X						X	X	X	X								X		
8.3.1.17.4.11																								
8.3.1.17.4.12				X	X			X			X	X	X	X	X							X	X	
8.3.1.20.1																								
8.3.3.2.2.1						X																		
8.3.4.2.4.1						X																		
8.3.4.2.4.2																								
8.3.4.2.4.3																								
8.3.4.2.4.4						X																		
8.3.4.2.4.5																								

Notes: 10 CFR 60.122(c)(10) concerns dissolution.
See Table 5 for SCP Study Plan vs Study Plan Titles.
See Table 6 for 10 CFR 60.122 Citation vs. Regulatory Text.

Table 3. SCP Study Plans Associated with 10 CFR 60.122 Siting Criteria (Page 1 of 3)

Regulation	Study Plan
10 CFR 60.122(b)(1)	8.3.1.2.1.4 8.3.1.2.2.1 8.3.1.2.2.2 8.3.1.2.2.4 8.3.1.2.2.8 8.3.1.2.2.9 8.3.1.2.3.1 8.3.1.2.3.2 8.3.1.2.3.3 8.3.1.3.1.1 8.3.1.3.2.1 8.3.1.5.2.1 8.3.1.5.2.2
10 CFR 60.122(b)(2)	N/A
10 CFR 60.122(b)(3)	8.3.1.3.5.1 8.3.1.3.5.2 8.3.1.3.6.1 8.3.1.3.6.2 8.3.1.3.7.1
10 CFR 60.122(b)(4)	8.3.1.3.1.1 8.3.1.3.2.1 8.3.1.3.2.2 8.3.1.3.3.1 8.3.1.3.3.2 8.3.1.3.3.3
10 CFR 60.122(b)(5)	8.3.1.4.2.1
10 CFR 60.122(b)(6)	N/A
10 CFR 60.122(b)(7)	8.3.1.2.1.3 8.3.1.2.1.4 8.3.1.2.2.1 8.3.1.2.2.2 8.3.1.2.2.3 8.3.1.2.2.4 8.3.1.2.2.5 8.3.1.2.2.8 8.3.1.2.2.9 8.3.1.2.3.1 8.3.1.2.3.2 8.3.1.2.3.3 8.3.1.3.1.1
10 CFR 60.122(b)(8)	8.3.1.2.1.3 8.3.1.2.2.1 8.3.1.2.2.2 8.3.1.2.2.3 8.3.1.2.2.4 8.3.1.2.2.7 8.3.1.2.2.9 8.3.1.2.3.1 8.3.1.4.2.1 8.3.1.4.2.3 8.3.1.12.2.1 8.3.1.2.1.1
10 CFR 60.122(c)(1)	8.3.1.16.1.1 8.3.1.2.1.2 8.3.1.5.2.1 8.3.1.5.2.2

Regulation	Study Plan
10 CFR 60.122(c)(2)	8.3.1.16.2.1 8.3.1.2.1.4 8.3.1.2.2.1 8.3.1.2.2.8 8.3.1.2.2.9 8.3.1.2.3.3 8.3.1.5.2.1 8.3.1.9.2.2 8.3.1.9.3.1 8.3.1.9.3.2
10 CFR 60.122(c)(3)	8.3.1.17.4.12 8.3.1.17.4.4 8.3.1.17.4.6 8.3.1.17.4.7 8.3.1.17.4.9 8.3.1.2.1.4 8.3.1.2.2.8 8.3.1.2.2.9 8.3.1.5.2.2 8.3.1.6.1.1 8.3.1.6.3.1 8.3.1.6.4.1 8.3.1.8.1.1 8.3.1.8.1.2
10 CFR 60.122(c)(4)	8.3.1.17.4.10 8.3.1.17.4.12 8.3.1.17.4.3 8.3.1.17.4.5 8.3.1.17.4.6 8.3.1.17.4.7 8.3.1.17.4.8 8.3.1.17.4.9 8.3.1.2.1.4 8.3.1.2.2.8 8.3.1.2.2.9 8.3.1.2.3.1 8.3.1.2.3.3 8.3.1.4.2.2 8.3.1.4.3.2 8.3.1.5.2.2 8.3.1.8.2.1
10 CFR 60.122(c)(5)	8.3.1.16.2.1 8.3.1.17.3.1 8.3.1.17.4.10 8.3.1.17.4.12 8.3.1.17.4.6 8.3.1.17.4.8 8.3.1.17.4.9 8.3.1.2.1.3 8.3.1.2.1.4 8.3.1.2.2.1 8.3.1.2.2.4 8.3.1.2.2.8 8.3.1.2.2.9 8.3.1.2.3.1 8.3.1.2.3.3

Table 3. SCP Study Plans Associated with 10 CFR 60.122 Siting Criteria (Page 2 of 3)

Regulation	Study Plan
10 CFR 60.122(c)(5) (continued)	8.3.1.4.2.1 8.3.1.4.2.3 8.3.1.4.3.2 8.3.1.5.1.5 8.3.1.5.1.6 8.3.1.5.2.1 8.3.1.5.2.2 8.3.1.6.1.1 8.3.1.6.4.1 8.3.1.8.1.1 8.3.1.8.1.2 8.3.1.8.2.1
10 CFR 60.122(c)(6)	8.3.1.2.1.3 8.3.1.2.1.4 8.3.1.2.2.1 8.3.1.2.2.8 8.3.1.2.2.9 8.3.1.2.3.3 8.3.1.5.1.1 8.3.1.5.1.2 8.3.1.5.1.3 8.3.1.5.1.4 8.3.1.5.1.5 8.3.1.5.1.6 8.3.1.5.2.1 8.3.1.5.2.2
10 CFR 60.122(c)(7)	8.3.1.2.2.8 8.3.1.2.2.7 8.3.1.3.2.1 8.3.1.3.2.2 8.3.1.3.5.1 8.3.1.3.7.1 8.3.3.2.2.1 8.3.4.2.4.1 8.3.4.2.4.4
10 CFR 60.122(c)(8)	8.3.1.15.1.3 8.3.1.15.1.4 8.3.1.17.4.12 8.3.1.17.4.6 8.3.1.2.2.7 8.3.1.2.3.3 8.3.1.3.1.1 8.3.1.3.2.1 8.3.1.3.2.2 8.3.1.3.3.3 8.3.1.3.4.1 8.3.1.3.6.1 8.3.1.3.6.2 8.3.1.3.7.1 8.3.1.4.2.2 8.3.1.8.1.1 8.3.1.8.1.2 8.3.1.8.5.2
10 CFR 60.122(c)(9)	8.3.1.2.2.4 8.3.1.2.2.7 8.3.1.3.1.1
10 CFR 60.122(c)(9) (continued)	8.3.1.3.2.1 8.3.1.3.2.2
10 CFR 60.122(c)(10)	N/A
10 CFR 60.122(c)(11)	8.3.1.17.3.1 8.3.1.17.3.5 8.3.1.17.3.6 8.3.1.17.4.10 8.3.1.17.4.12 8.3.1.17.4.6 8.3.1.17.4.8 8.3.1.17.4.9 8.3.1.2.1.4 8.3.1.2.3.3 8.3.1.3.2.2 8.3.1.3.3.1 8.3.1.3.3.2 8.3.1.3.3.3 8.3.1.4.2.2 8.3.1.4.3.2 8.3.1.5.2.1 8.3.1.8.2.1 8.3.1.8.5.3
10 CFR 60.122(c)(12)	8.3.1.17.3.1 8.3.1.17.3.5 8.3.1.17.3.6 8.3.1.17.4.10 8.3.1.17.4.12 8.3.1.17.4.1 8.3.1.17.4.6 8.3.1.17.4.8 8.3.1.17.4.9 8.3.1.2.1.4 8.3.1.2.3.3 8.3.1.3.2.2 8.3.1.3.3.1 8.3.1.3.3.2 8.3.1.3.3.3 8.3.1.4.2.2 8.3.1.4.3.2 8.3.1.5.2.1 8.3.1.8.2.1
10 CFR 60.122(c)(13)	8.3.1.17.3.1 8.3.1.17.3.2 8.3.1.17.3.5 8.3.1.17.3.6 8.3.1.17.4.10 8.3.1.17.4.12 8.3.1.17.4.1 8.3.1.17.4.6 8.3.1.17.4.8 8.3.1.17.4.9 8.3.1.2.1.4 8.3.1.2.3.3 8.3.1.3.2.2 8.3.1.3.3.1 8.3.1.3.3.2

Table 3. SCP Study Plans Associated with 10 CFR 60.122 Siting Criteria (Page 3 of 3)

Regulation	Study Plan
10 CFR 60.122(c)(13) (continued)	8.3.1.3.3.3 8.3.1.4.2.2 8.3.1.4.3.2 8.3.1.5.2.1
10 CFR 60.122(c)(14)	8.3.1.17.3.1 8.3.1.17.3.2 8.3.1.17.3.5 8.3.1.17.3.6 8.3.1.17.4.10 8.3.1.17.4.12 8.3.1.17.4.1 8.3.1.17.4.6 8.3.1.17.4.8 8.3.1.17.4.9 8.3.1.2.1.4 8.3.1.2.3.3 8.3.1.3.2.2 8.3.1.3.3.1 8.3.1.3.3.2 8.3.1.3.3.3 8.3.1.4.2.2 8.3.1.4.3.2 8.3.1.5.2.1
10 CFR 60.122(c)(15)	8.3.1.17.4.12 8.3.1.2.1.2 8.3.1.2.1.4 8.3.1.2.3.3 8.3.1.3.2.2 8.3.1.3.3.2 8.3.1.3.3.3 8.3.1.8.1.1 8.3.1.8.1.2 8.3.1.8.2.1 8.3.1.8.5.1 8.3.1.8.5.2
10 CFR 60.122(c)(16)	8.3.1.16.1.1 8.3.1.2.1.2 8.3.1.5.1.4 8.3.1.5.2.1 8.3.1.6.1.1 8.3.1.6.2.1 8.3.1.6.3.1 8.3.1.6.4.1
10 CFR 60.122(c)(17)	8.3.1.9.1.1 8.3.1.9.2.1 8.3.1.9.3.1 8.3.1.9.2.2
10 CFR 60.122(c)(18)	8.3.1.14.2
10 CFR 60.122(c)(19)	8.3.1.9.3.1
10 CFR 60.122(c)(20)	8.3.1.15.1.5 8.3.1.15.1.8 8.3.1.2.2.3 8.3.1.2.2.4 8.3.1.4.2.3 8.3.1.4.3.2
10 CFR 60.122(c)(21)	8.3.1.15.1.5

Regulation	Study Plan
10 CFR 60.122(c)(21) (continued)	8.3.1.15.1.7 8.3.1.15.1.8 8.3.1.15.2.1
10 CFR 60.122(c)(22)	8.3.1.17.4.10 8.3.1.17.4.12 8.3.1.17.4.1 8.3.1.17.4.6 8.3.1.17.4.7 8.3.1.17.4.8 8.3.1.17.4.9 8.3.1.2.1.4 8.3.1.2.2.1 8.3.1.2.2.4 8.3.1.2.2.9 8.3.1.2.3.1 8.3.1.2.3.2 8.3.1.2.3.3 8.3.1.2.3.3 8.3.1.3.2.1 8.3.1.4.2.2 8.3.1.4.3.2 8.3.1.5.1.5 8.3.1.5.1.6 8.3.1.5.2.1 8.3.1.5.2.2 8.3.1.8.1.1 8.3.1.8.1.2 8.3.1.8.2.1 8.3.1.9.2.2 8.3.1.9.3.2
10 CFR 60.122(c)(23)	8.3.1.17.4.12 8.3.1.17.4.6 8.3.1.2.1.3 8.3.1.2.1.4 8.3.1.2.2.1 8.3.1.2.2.3 8.3.1.2.2.4 8.3.1.2.2.8 8.3.1.2.2.9 8.3.1.2.3.1 8.3.1.5.1.6 8.3.1.5.2.2
10 CFR 60.122(c)(24)	8.3.1.2.2.2 8.3.1.2.2.3 8.3.1.2.2.4 8.3.1.2.2.5 8.3.1.2.2.6 8.3.1.2.2.7 8.3.1.2.2.9 8.3.1.3.8.1 8.3.1.4.2.3

Table 4. 10 CFR 60.122 Siting Criteria (Favorable and Potentially Adverse Conditions) Associated with SCP Study Plans

SCP #	Favor. Conds. 10CFR60.122(b)	Pot. Adv. Conds. 10CFR60.122(c)
8.3.1.2.1.1	1, 7, 8	
8.3.1.2.1.2	8	1, 11, 15, 16
8.3.1.2.1.3	7, 8	5, 6, 23
8.3.1.2.1.4	1, 7	2-6, 11-15, 22, 23
8.3.1.2.2.1	1, 7, 8	2, 5, 6, 22, 23
8.3.1.2.2.2	7, 8	24
8.3.1.2.2.3	7, 8	20, 23, 24
8.3.1.2.2.4	1, 7, 8	5, 7, 9, 20, 22-24
8.3.1.2.2.5	7	24
8.3.1.2.2.6		24
8.3.1.2.2.7	8	7-9, 24
8.3.1.2.2.8	1	2-6, 23
8.3.1.2.2.9	1, 8	2-6, 22-24
8.3.1.2.3.1	1, 8	4, 5, 22, 23
8.3.1.2.3.2	1	22
8.3.1.2.3.3	1	4-6, 8, 12-15, 22
8.3.1.3.1.1	1, 4	7- 9
8.3.1.3.2.1	1, 4	7-9, 22
8.3.1.3.2.2	4	7-9, 11-15
8.3.1.3.3.1	4	11-14
8.3.1.3.3.2	4	11-15
8.3.1.3.3.3	4	2, 8, 11-15
8.3.1.3.4.1/.3	3	7, 8, 11
8.3.1.3.4.2	3	11
8.3.1.3.5.1/.2	1, 3	7, 8
8.3.1.3.6.1	3	7, 8
8.3.1.3.6.2	3	8
8.3.1.3.7.1	3, 4	7, 8
8.3.1.3.7.2		
8.3.1.3.8.1		24
8.3.1.4.2.1	5, 8	5
8.3.1.4.2.2		4, 5, 8, 12-14, 22
8.3.1.4.2.3	8	4, 5, 20, 24
8.3.1.4.3.1	8	3
8.3.1.4.3.2		5, 11-14, 20, 21
8.3.1.5.1.1		6
8.3.1.5.1.2		6
8.3.1.5.1.3		6
8.3.1.5.1.4		6, 16
8.3.1.5.1.5		5, 6, 22
8.3.1.5.1.6		5, 6, 22, 23
8.3.1.5.2.1		1,2,5,6,11-14,16, 22
8.3.1.5.2.2		3, 4, 5, 6
8.3.1.6.1.1		3, 5, 16
8.3.1.6.2.1		16
8.3.1.6.3.1		3, 16
8.3.1.6.4.1		3, 5, 16
8.3.1.8.1.1		3, 5, 8, 15, 22
8.3.1.8.1.2		3, 5, 8, 15, 22
8.3.1.8.2.1		3, 4, 11-13, 15, 22
8.3.1.8.5.1		15
8.3.1.8.5.2		8, 15
8.3.1.8.5.3		11
8.3.1.9.1.1		17
8.3.1.9.2.1		17
8.3.1.9.2.2		2, 17, 22
8.3.1.9.3.1		2, 17, 19
8.3.1.9.3.2		2, 5, 22
8.3.1.12.2.1	8	
8.3.1.14.2		18
8.3.1.15.1.1		
8.3.1.15.1.2		
8.3.1.15.1.3		8
8.3.1.15.1.4		8
8.3.1.15.1.5		20, 21
8.3.1.15.1.6		
8.3.1.15.1.7		21
8.3.1.15.1.8		20, 21
8.3.1.15.2.1		21
8.3.1.15.2.2		
8.3.1.16.1.1		1, 16
8.3.1.16.2.1		2, 5
8.3.1.16.3.1		
8.3.1.17.1.1		
8.3.1.17.2.1		
8.3.1.17.3.1		5, 11-14
8.3.1.17.3.2		13, 14
8.3.1.17.3.3.1		
8.3.1.17.3.3.2		
8.3.1.17.3.4		
8.3.1.17.3.5		11-14
8.3.1.17.3.6		11-14
8.3.1.17.4.1		12-14, 22
8.3.1.17.4.2		
8.3.1.17.4.3		4
8.3.1.17.4.4		3
8.3.1.17.4.5		4
8.3.1.17.4.6		3,4,5,8 11-14,22, 23
8.3.1.17.4.7		3, 4, 22
8.3.1.17.4.8		4, 5, 11-14, 22, 23
8.3.1.17.4.9		3, 4, 5, 11-14, 23
8.3.1.17.4.10		4, 5, 11-14, 22
8.3.1.17.4.11		
8.3.1.17.4.12		3,4, 8, 11-15, 22, 23
8.3.1.20.1		
8.3.3.2.2.1		6
8.3.4.2.4.1		6
8.3.4.2.4.2		
8.3.4.2.4.3		
8.3.4.2.4.4		6
8.3.4.2.4.5		

Table 5. SCP Study Plan # vs. Study Plan Title (Page 1 of 2)

SCP #	Study Plan Title
8.3.1.2.1.1	Characterization of Meteorology for Regional Hydrology
8.3.1.2.1.2	Characterization of Runoff and Streamflow
8.3.1.2.1.3	Chararacterization of Regional Groundwater Flow System
8.3.1.2.1.4	Regional Hydrologic System Synthesis and Modeling
8.3.1.2.2.1	Characterization of Unsaturated Zone Infiltration
8.3.1.2.2.2	Water Movement Test
8.3.1.2.2.3	Characterization Percolation in the Unsaturated Zone-Surface Based Study
8.3.1.2.2.4	Characterization of Yucca Mountain Percolation - Unsaturated Zone-ESF Investigation (.4,.5,.7,.8)
8.3.1.2.2.4	Characterization Of Yucca Mountain Percolation - Unsaturated Zone-ESF Investigation (.10)
8.3.1.2.2.5	Diffusion Tests in the ESF
8.3.1.2.2.6	Characterization of Gas-Phase Movement in the Unsaturated Zone
8.3.1.2.2.7	Hydrochemical Characterization of the Unsaturated Zone
8.3.1.2.2.8	Fluid Flow in Unsaturated Fractured Rock
8.3.1.2.2.9	Site Unsaturated Zone Modeling and Synthesis
8.3.1.2.3.1	Characterization of the Site Saturated Zone Groundwater Flow System (.1-.6)
8.3.1.2.3.1	Characterization of the Site Saturated Zone Groundwater Flow System (.7)
8.3.1.2.3.1	Characterization of the Site Saturated Zone Groundwater Flow System (.8)
8.3.1.2.3.2	Characterization of Saturated Zone Hydrochemistry
8.3.1.2.3.3	Saturated Zone Hydrologic System Synthesis and Modeling
8.3.1.3.1.1	Groundwater Chemistry Model
8.3.1.3.2.1	Mineralogy, Petrology, and Chemistry of Transport Pathways
8.3.1.3.2.2	History of Mineralogical and Geochemical Alteration of Yucca Mountain
8.3.1.3.3.1	Natural Analog Hydrothermal Systems in Tuff
8.3.1.3.3.2	Kinetics and Thermodynamics of Mineral Evolution
8.3.1.3.3.3	Conceptual Model of Mineral Evolution
8.3.1.3.4.1/.3	Batch Sorption Studies and Development of Sorption Models
8.3.1.3.4.2	Biological Sorption and Transport
8.3.1.3.5.1/.2	Dissolved Species Concentration Limits and Colloid Behavior
8.3.1.3.6.1	Dynamic Transport Column Experiments
8.3.1.3.6.2	Diffusion
8.3.1.3.7.1	Retardation Sensitivity Analysis
8.3.1.3.7.2	Demonstrate Applicability of Laboratory Data to Repository Transport Calculations
8.3.1.3.8.1	Gaseous Radiative Transport Calculations and Measurements
8.3.1.4.2.1	Characterization of the Vertical And Lateral Distribution of Stratigraphic Units in the Site Area
8.3.1.4.2.2	Characterization of Structural Features in the Site Area
8.3.1.4.2.3	Three-Dimensional Geologic Model
8.3.1.4.3.1	Systematic Acquisition of Site-Specific Subsurface Information
8.3.1.4.3.2	Three-Dimensional Rock Characteristics Models
8.3.1.5.1.1	Characterization of Modern Regional Precipitation
8.3.1.5.1.2	Paleoclimate Study: Lake, Playa, and Marsh Deposits
8.3.1.5.1.3	Climatic Interpretations of Terrestrial Paleoecology
8.3.1.5.1.4	Analysis of the Paleoenvironmental History of the Yucca Mountain Region
8.3.1.5.1.5	Paleoclimate-Paleoenvironment Synthesis
8.3.1.5.1.6	Characterization of Future Regional Climate and Environments
8.3.1.5.2.1	Characterization of the Quaternary Regional Hydrology (.1)
8.3.1.5.2.1	Characterization of the Quaternary Regional Hydrology(.3,.4,.5)
8.3.1.5.2.2	Characterization of Future Regional Hydrology Due to Climate Changes
8.3.1.6.1.1	Distribution and Characterization of Present And Past Erosion
8.3.1.6.2.1	Influence of Future Climatic Conditions on Location and Rates Of Erosion
8.3.1.6.3.1	Evaluation of the Effects of Future Tectonics on Erosion at Yucca Mountain
8.3.1.6.4.1	Effects of Erosion on the Hydrology, Geochemistry, and Rock Characteristics at Yucca Mountain
8.3.1.8.1.1	Probability of Magmatic Eruption Penetrating the Repository
8.3.1.8.1.2	Effects of Volcanic Eruption Pentrating the Repository
8.3.1.8.2.1	Analysis of Waste Package Rupture Due to Tectonic Processes and Events
8.3.1.8.2.1	Tectonic Effects

Table 5. SCP Study Plan # vs. Study Plan Title (Page 2 of 2)

SCP #	Study Plan Title
8.3.1.8.5.1	Characterization of Volcanic Features
8.3.1.8.5.2	Characterization of Igneous Intrusive Features
8.3.1.8.5.3	Investigation of Folds in Miocene and Younger Rocks of the Region
8.3.1.9.1.1	Long Term Survivability of Surface Marker Systems at Yucca Mountain
8.3.1.9.2.1	Mineral Resource Assessment of Yucca Mountain, Nye County
8.3.1.9.2.2	Water Resource Assessment of Yucca Mountain, Nevada
8.3.1.9.3.1	Future Inadvertent Human Intrusion Yucca Mountain Exploration and Extraction of Natural Resources
8.3.1.9.3.2	Evaluation of the Potential Effect of Exploitation of Natural Resources on Hydrologic Characteristics at Yucca Mountain
8.3.1.12.2.1	Meteorological Data Collection at the Yucca Mountain Site
8.3.1.14.2	Soil and Rock Properties of Potential Locations of Surface and Subsurface Facilities
8.3.1.15.1.1	Laboratory Thermal Properties
8.3.1.15.1.2	Laboratory Thermal Expansion Testing
8.3.1.15.1.3	Laboratory Determination of Mechanical Properties of Intact Rock
8.3.1.15.1.4	Laboratory Determination of Mechanical Properties of Fractures
8.3.1.15.1.5	Excavation Investigations
8.3.1.15.1.6	In Situ Thermomechanical Properties
8.3.1.15.1.7	In Situ Mechanical Properties
8.3.1.15.1.8	In Situ Design Verification
8.3.1.15.2.1	Characterization of Site Ambient Stress Conditions (.1)
8.3.1.15.2.1	Characterization of Site Ambient Stress Conditions (.2)
8.3.1.15.2.2	Characterization Site Ambient Thermal Conductivity
8.3.1.16.1.1	Characterization of Flood Potential of Yucca Mountain Site
8.3.1.16.2.1	Location of Adequate Water Supply for Construction, Operation, Closure, and Decommissioning of a Mined Geologic Disposal System
8.3.1.16.3.1	Determination of the Preclosure Hydrologic Conductivity of ohe Unsaturated Zone ot Yucca Mountain
8.3.1.17.1.1	Potential for Ash Fall at Site
8.3.1.17.2.1	Faulting Potential at Repository
8.3.1.17.3.1	Relevant Earthquake Sources
8.3.1.17.3.2	Underground Nuclear Explosion Sources
8.3.1.17.3.3.1	Ground Motion From Regional Earthquakes
8.3.1.17.3.3.2	Ground Motion From Underground Nuclear Explosions
8.3.1.17.3.4	Effects of Local Site Geology on Surface and Subsurface Motion
8.3.1.17.3.5	Ground Motion at Site From Controlling Seismic Events
8.3.1.17.3.6	Probabilistic Seismic Hazard Analyses
8.3.1.17.4.1	Historical And Current Seismicity
8.3.1.17.4.2	Location and Recency of Faulting Near Prospective Surface Facilities
8.3.1.17.4.3	Quaternary Faulting Within 100km of Yucca Mountain, Including Walker Lane
8.3.1.17.4.4	Quaternary Fault Proximal to Site Within NE-Trend Fault Zones
8.3.1.17.4.5	Detachment Faults at or Proximal to Yucca Mountain
8.3.1.17.4.6	Quaternary Faulting Within Site Area
8.3.1.17.4.7	Subsurface Geometry and Concealed Extension of Quaternary Faults at Yucca Mountain
8.3.1.17.4.8	Stress Field Within or Proximal To Site Area
8.3.1.17.4.9	Tectonic Geomorphology of the Yucca Mountain Region
8.3.1.17.4.10	Geodetic Leveling
8.3.1.17.4.11	Characterization of Regional Lateral Crustal Movement
8.3.1.17.4.12	Tectonic Models and Synthesis
8.3.1.20.1	Characterization of the Altered Zone
8.3.3.2.2.1	Seal Material Properties Development
8.3.4.2.4.1	Characterization of Chemical and Mineralogical Changes in the Postemplacement Environment
8.3.4.2.4.2	Hydrologic Properties of Waste Package Environment
8.3.4.2.4.3	Mechanical Attributes of Waste Package Environment
8.3.4.2.4.4	Engineered Barrier System Field Tests
8.3.4.2.4.5	Effects of Man-Made Materials on Chemical and Mineralogical Changes in the Post Emplacement Environment

Table 6. 10 CFR 60.122 Siting Criteria Citations vs. Regulatory Text (Page 1 of 2)

Citation	Regulatory Text - Favorable Conditions
10 CFR 60.122 (b)	Favorable Conditions.
10 CFR 60.122 (b)(1)	The nature and rates of tectonic, hydrogeologic, geochemical, and geomorphic processes (or any of such processes) operating within the geologic setting during the Quaternary Period, when projected, would not affect or would favorably affect the ability of the geologic repository to isolate the waste.
10 CFR 60.122 (b)(2)	For disposal in the saturated zone, hydrogeologic conditions that provide--
10 CFR 60.122 (b)(2)(i)	A host rock with low horizontal and vertical permeability;
10 CFR 60.122 (b)(2)(ii)	Downward or dominantly horizontal hydraulic gradient in the host rock and immediately surrounding hydrogeologic units; and
10 CFR 60.122 (b)(2)(iii)	Low vertical permeability and low hydraulic gradient between the host rock and the surrounding hydrogeologic units.
10 CFR 60.122 (b)3	Geochemical conditions that--
10 CFR 60.122 (b)3(i)	Promote precipitation or sorption of radionuclides;
10 CFR 60.122 (b)3(ii)	Inhibit the formation of particulates, colloids, and inorganic and organic complexes that increase the mobility of radionuclides; or
10 CFR 60.122 (b)3(iii)	Inhibit the transport of radionuclides by particulates, colloids, and complexes.
10 CFR 60.122 (b)4	Mineral assemblages that, when subjected to anticipated thermal loading, will remain unaltered or alter to mineral assemblages having equal or increased capacity to inhibit radionuclide migration.
10 CFR 60.122 (b)5	Conditions that permit the emplacement of waste at a minimum depth of 300 meters from the ground surface. (The ground surface shall be deemed to be the elevation of the lowest point on the surface above the disturbed zone.)
10 CFR 60.122 (b)6	A low population density within the geologic setting and a controlled area that is remote from population centers.
10 CFR 60.122 (b)7	Pre-waste-emplacement groundwater travel time along the fastest path of likely radionuclide travel from the disturbed zone to the accessible environment that substantially exceeds 1,000 years.
10 CFR 60.122 (b)8	For disposal in the unsaturated zone, hydrogeologic conditions that provide--
10 CFR 60.122 (b)(8)(i)	Low moisture flux in the host rock and in the overlying and underlying hydrogeologic units;
10 CFR 60.122 (b)(8)(ii)	A water table sufficiently below the underground facility such that fully saturated voids contiguous with the water table do not encounter the underground facility;
10 CFR 60.122 (b)(8)(iii)	A Laterally extensive low-permeability hydrogeologic unit above the host rock that would inhibit the downward movement of water or divert downward moving water to a location beyond the limits of the underground facility:
10 CFR 60.122 (b)(8)(iv)	A host rock that provides for free drainage; or
10 CFR 60.122 (b)(8)(v)	A climatic regime in which the average annual historic precipitation is a small percentage of the average annual potential evapotranspiration.

Table 6. 10 CFR 60.122 Siting Criteria Citations vs. Regulatory Text (Page 2 of 2)

Citation	Regulatory Text - Potentially Adverse Conditions
10 CFR 60.122 (c)	Potentially Adverse Conditions. The following conditions are potentially adverse conditions if they are characteristic of the controlled area or may affect isolation within the controlled area.
10 CFR 60.122 (c)(1)	Potential for flooding of the underground facility, whether resulting from the occupancy and modification of floodplains or from the failure of existing or planned man-made surface water impoundments.
10 CFR 60.122 (c)(2)	Potential for foreseeable human activity to adversely affect the groundwater flow system, such as groundwater withdrawal, extensive irrigation, subsurface injection of fluids, underground pumped storage, military activity or construction of large scale surface water impoundments.
10 CFR 60.122 (c)(3)	Potential for natural phenomena such as landslides, subsidence, or volcanic activity of such a magnitude that large-scale surface water impoundments could be created that could change the regional groundwater flow system and thereby adversely affect the performance of the geologic repository.
10 CFR 60.122 (c)(4)	Structural deformation, such as uplift, subsidence, folding, or faulting that may adversely affect the regional groundwater flow system.
10 CFR 60.122 (c)(5)	Potential for changes in hydrologic conditions that would affect the migration of radionuclides to the accessible environment, such as changes in hydraulic gradient, average interstitial velocity, storage coefficient, hydraulic conductivity, natural recharge, potentiometric levels, and discharge points.
10 CFR 60.122 (c)(6)	Potential for changes in hydrologic conditions resulting from reasonably foreseeable climatic changes.
10 CFR 60.122 (c)(7)	Groundwater conditions in the host rock, including chemical composition, high ionic strength or ranges of Eh-pH, that could increase the solubility or chemical reactivity of the engineered barrier system.
10 CFR 60.122 (c)(8)	Geochemical processes that would reduce sorption of radionuclides, result in degradation of the rock strength, or adversely affect the performance of the engineered barrier system.
10 CFR 60.122 (c)(9)	Ground water condition sin the host rock that are not reducing.
10 CFR 60.122 (c)(10)	Evidence of dissolutioning such as breccia pipes, dissolution cavities, or brine pockets.
10 CFR 60.122 (c)(11)	Structural deformation such as uplift, subsidence, folding, and faulting during the Quaternary Period.
10 CFR 60.122 (c)(12)	Earthquakes which have occurred historically that if they were to be repeated could affect the site significantly.
10 CFR 60.122 (c)(13)	Indications, based on correlations of earthquakes with tectonic processes and features, that either the frequency of occurrence or magnitude of earthquakes may increase.
10 CFR 60.122 (c)(14)	More frequent occurrence of earthquakes or earthquakes of higher magnitude than is typical of the area in which the geologic setting is located.
10 CFR 60.122 (c)(15)	Evidence of igneous activity since the start of the Quaternary Period.
10 CFR 60.122 (c)(16)	Evidence of extreme erosion during the Quaternary Period.
10 CFR 60.122 (c)(17)	The presence of naturally occurring materials, whether identified or undiscovered, within the site, in such form that:
10 CFR 60.122 (c)(17)(i)	Economic extraction is currently feasible or potentially feasible during the foreseeable future; or
10 CFR 60.122 (c)(17)(ii)	Such materials have greater gross value or net value than the average for other areas of similar size that are representative of and located within the geologic setting.
10 CFR 60.122 (c)(18)	Evidence of subsurface mining for resources within the site.
10 CFR 60.122 (c)(19)	Evidence of drilling for any purpose within the site.
10 CFR 60.122 (c)(20)	Rock or groundwater conditions that would require complex engineering measures in the design and construction of the underground facility or in the sealing of boreholes and shafts.
10 CFR 60.122 (c)(21)	Geomechanical properties that do not permit design of underground opening that will remain stable through permanent closure.
10 CFR 60.122 (c)(22)	Potential for the water table to rise sufficiently so as to cause saturation of an underground facility located in the unsaturated zone.
10 CFR 60.122 (c)(23)	Potential for existing or future perched water bodies that may saturate portions of the underground facility or provide a faster flow path from an underground facility located in the unsaturated zone to the accessible environment.
10 CFR 60.122 (c)(24)	Potential for the movement of radionuclides in a gaseous state through air-filled pore spaces of an unsaturated geologic medium to the accessible environment.