

MEMORANDUM FOR: Commissioner Curtiss

JUL 8 1 1

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FROM: James M. Taylor
Executive Director
for Operations

SUBJECT: RESPONSES TO QUESTIONS RAISED AT JULY 1, 1992, BRIEFING

Enclosed are the responses to four questions you posed to the staff during its July 1, 1992, briefing to you on issues in the high-level waste repository program.

Original Signed By:
James M. Taylor
James M. Taylor
Executive Director
for Operations

Enclosure: As stated

cc: The Chairman
Commissioner Rogers
Commissioner Remick
Commissioner de Planque
SECY
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*See previous concurrence

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Question 1. Can the subsystem objectives be used as a trade-off against one another?

Answer.

- o The history of the development of the subsystem performance objectives in 10 CFR Part 60 supports a position that these performance objectives were not generally intended to be used as a trade-off against one another. A premise of the multiple barrier approach is that barriers can be prescribed that act separately and thereby enhance the confidence that the wastes will be isolated. As noted in the statement of considerations accompanying the final rule (48 FR 28196, June 21, 1983), the regulatory strategy favored use of the multiple barrier approach in which each of the major elements of the geologic repository had a prescribed minimum performance standard; achieving these standards collectively would assist the Commission to determine that the EPA's high-level waste standard would be met. Given this regulatory strategy, the fact that a licensee proposes an enhanced waste package design, for example, does not of itself relieve it from the requirements to demonstrate compliance with the other subsystem performance requirements. However, the text of the rule is sufficiently flexible that DOE could propose, and the Commission could approve or specify, some other values for the subsystem performance requirements (by virtue of 10 CFR 60.113(b), which allows consideration of "particular sources of uncertainty in predicting the performance of the geologic repository.") See *id.*, "Single vs. Multiple Performance Standards."

Question 2.

For the uncertainties identified by the Center for Nuclear Waste Regulatory Analyses (CNWRA) in CNWRA 90-003, which of those are related to site-specific issues and which are generic and related to what must be done to meet the rule?

Answer.

- o Enclosed is a tabular listing from SECY-91-225, "Second Update of the Regulatory Strategy and Schedules for the High-Level Waste Repository Program" of the 49 regulatory uncertainties identified in CNWRA 90-003. Of these uncertainties, 47 are related to what must be done to meet the rule, while the remaining 2 deal with what organization will be responsible for implementing that portion of the regulation. None of these uncertainties are related to site-specific issues.

The reduction methods for reducing these uncertainties are as follows: 25 through regulatory guidance, 9 through major rulemaking, and 3 through minor rulemaking. The remaining 12 are still under analysis by the staff, and will be placed in one of the above three categories when an appropriate reduction method has been selected. Although the uncertainties identified are associated with actions that must be taken to meet the rule, the staff believes that it is appropriate to reduce the majority of them through regulatory guidance, given the difference in the amount of time and the level of resource allocation required to complete a rulemaking versus staff guidance. Consideration should also be given to the fact that staff guidance is routinely published for comment and there is an opportunity to proceed more formally, by rulemaking, if continued disagreement is evident.

REGULATORY AND INSTITUTIONAL UNCERTAINTY REDUCTION STATUS
June 1991

NUMBER	UNCERTAINTY TYPE	RULE CITATION	SHORT UNCERTAINTY STATEMENT	ANALYZED	REDUCTION METHOD	REDUCED
UN1	Regulatory	CFR60.10(b)	Information having significant implications	Analyzed(3/91)	Guidance	
UN2	Regulatory	CFR60.23	Environmental Report vs. EIS	Analyzed(3/91)	Minor Rule	
UN3	Regulatory	CFR60.21	Detailed content of application not in CFR60.21	Analyzed(3/91)	Guidance	
UN4	Regulatory	CFR60.24(a)	Criteria used to accept the license application	Analyzed(3/91) Analyzed(6/91)	Guidance(RS,LARP)	Reduced-Draft(11/90)
UN5	Regulatory	CFR60.22(d)	Responsibility for Public Document Room	Analyzed(3/91)	Minor Rule	
UN6	Regulatory	CFR60.31	Consideration of performance confirmation during construction authorization	Analyzed(3/91)	Minor Rule	
UN7	Regulatory	CFR60.31(a)(5)	Unpublished Subpart I in '10 CFR Part '60	Analyzed(3/91)	Major Rule	
UN8	Regulatory	CFR60.46(a)(1)	Clarify 'substantially increasing retrieval difficulty'	Analyzed(3/91)	Guidance	
UN9	Regulatory	CFR60.31(a)(2)(ii)	Compliance demonstration/determination regarding human intruders and record archiving	Analyzed(3/91)	Guidance	
UN10	Regulatory	CFR60.72(b)(6)	Construction problems' needs clarification	Analyzed(3/91)	Guidance	
UN11	Regulatory	CFR60.72(b)(7)	Anomalous condition' needs clarification	Analyzed(3/91)	Guidance	
UN12	Regulatory	CFR60.73	Substantial safety hazard	Analyzed(3/91)	Guidance	
UN13	Regulatory	CFR60.73(b)	Significant deviation	Analyzed(3/91)	Guidance	
UN14	Regulatory	CFR60.111(a)	Reference clarification	Analyzed(3/91)	Guidance	
UN15	Regulatory	CFR60.111(a)	Design radiation dose criteria	Analyzed(3/91)	Major Rule	
UN16	Regulatory	CFR60.111(b)(1)	Facilitate versus not prevent waste retrieval	Analyzed(3/91)	Guidance	
UN17	Regulatory	CFR60.112	Anticipated and unanticipated processes and events	Analyzed(3/91)	Major Rule	
UN18	Regulatory	CFR60.112	Amendments to 10 CFR 60.112 to conform to EPA Standard	Analyzed(3/91)	Major Rule	
UN19	Regulatory	CFR60.113(a)(1)(i)(A)	Substantially complete containment	Analyzed(3/91)	Further Analysis	
UN20	Regulatory	CFR60.113(c)(1)	Solid waste form	Analyzed(3/91)	Guidance	
UN21	Regulatory	CFR60.113(b)	Anticipated processes and events	Analyzed(3/91)	Major Rule	
UN22	Regulatory	CFR60.113(c)	Unanticipated processes and events	Analyzed(3/91)	Major Rule	
UN23	Regulatory	CFR60.121(a)(1)	Milestone for land ownership and control	Analyzed(3/91)	Guidance	
UN24	Regulatory	CFR60.122(b)(1)	Clarification of 'Geologic Setting'	Analyzed(3/91)	Further Analysis	

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NUMBER	UNCERTAINTY TYPE	RULE CITATION	SHORT UNCERTAINTY STATEMENT	ANALYZED	REDUCTION METHOD	REDUCED
UN25	Regulatory	CFR60.122(a)(2)(ii)	'Taking into account the degree of resolution'	Analyzed(3/91)	Further Analysis	
* UN26	Regulatory	CFR60.122(a)(2)(iii)	'Not to affect significantly'	Analyzed(3/91)	Further Analysis	
* UN27	Regulatory	CFR60.122(a)(2)(ii)	Need for criteria for 'adequately evaluated'	Analyzed(3/91)	Further Analysis	
UN28	Regulatory	CFR60.122(a)(2)(ii)	Meaning of 'not likely to underestimate effect'	Analyzed(3/91)	Further Analysis	
* UN29	Regulatory	CFR60.122(a)(2)(ii)	Need for criteria for 'adequately investigated'	Analyzed(3/91)	Further Analysis	
UN30	Regulatory	CFR60.122(b)(1)	Definition of 'geologic setting'	Analyzed(3/91)	Further Analysis	
UN31	Regulatory	CFR60.21(c)(1)(ii)(C) CFR60.122	Treatment of combinations of potentially adverse conditions	Analyzed(3/91)	Guidance	
UN32	Regulatory	CFR60.122(c)(3)	Meaning of 'regional groundwater flow system'	Analyzed(3/91)	Further Analysis	
UN33	Regulatory	CFR60.122(c)(4)	Meaning of 'regional groundwater flow system'	Analyzed(3/91)	Further Analysis	
UN34	Regulatory	CFR60.122(c)(8)	Sorption of radionuclides	Analyzed(3/91)	Further Analysis	
UN35	Regulatory	CFR60.122(c)(16)	Clarification of 'Extreme Erosion'	Analyzed(3/91)	Guidance	
UN36	Regulatory	CFR60.122(c)(24)	'Air-filled' pore spaces	Analyzed(3/91)	Guidance	
UN37	Regulatory	CFR60.131(b)(5)	Design all utility testing for essential function	Analyzed(3/91)	Guidance	
UN38	Regulatory	CFR60.131(b)(6)	'Design to permit periodic inspection'	Analyzed(3/91)	Guidance	
UN39	Institutional	CFR60.131(b)(9)	Secondary effects/non-radiological accidents	Analyzed(3/91)	Guidance	
UN40	Regulatory	CFR60.131(b)(10)	Insufficient guidance in design criteria	Analyzed(3/91)	Guidance	
UN41	Institutional	CFR60.133(e)	Will NRC regulate non-radiological safety?	Analyzed(3/91)	Guidance	
UN42	Regulatory	Subpart I	Subpart I	Analyzed(3/91)	Major Rule	
UN43	Regulatory	CFR60.122 and CFR60.112	Applicability of siting criteria to performance objectives	Analyzed(3/91)	Guidance (SP)	Reduced-Final(8/90)
UN44	Regulatory	CFR60.133, CFR60.111 CFR60.112, CFR60.113	Applicability of thermal load requirement to performance objectives	Analyzed(3/91)	Guidance (SP)	Reduced-Final(8/90)
UN45	Regulatory	CFR60.113(a)(1)(ii)(A)	Waste package containment time frame	Analyzed(3/91)	Guidance (SP)	Reduced-Final(8/90)
UN46	Regulatory	CFR60.113(a)(ii)(D)	Engineered barrier system release rate limit	Analyzed(3/91)	Further Analysis	
UN47	Regulatory	CFR60.131(b)(9)	Reference to applicable mine safety requirements	Analyzed(3/91)	Further Analysis	

* Staff has determined that these can be reduced through major rulemaking. However, the table will not be updated

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NUMBER	UNCERTAINTY TYPE	RULE CITATION	SHORT UNCERTAINTY STATEMENT	ANALYZED	REDUCTION METHOD	REDUCED
UR48	Regulatory	10 CFR Part 2.1003	Topical Guidelines for Licensing Support System	Analyzed(3/91)	Guidance (RB)	
UR49	Regulatory	CFR60.113(a)(1)(ii)(A)	Criteria for containment of Greater-Than-Class-C	Analyzed(3/91)	Further Analysis	

Question 3.

Provide a copy of the work plan that was used to guide the staff in its identification of reduction methods for the CNWRA 90-003 uncertainties.

Answer.

- o A copy of the work plan has been provided separately.

Question 4.

Why does the rulemaking codifying the staff position on the timeframe for substantially complete containment (SCC) have to wait for the staff to complete its work on the reduction of the SCC uncertainty?

Answer.

- o The staff believes that action on rulemaking should be deferred pending completion of the uncertainty reduction effort for SCC because the results of the ongoing effort may include a recommendation that would affect the current rule. For example, the current study, which is evaluating various deterministic and probabilistic models applicable to waste package failure, may identify a rule structure which would further reduce the regulatory uncertainty. In view of the potential for introducing instability into the regulatory process by codifying the current staff position prior to resolving uncertainties, and the limited availability of resources to support a partial change to a rule that may require more substantial change, the staff has chosen to defer any rulemaking action pending the completion of the uncertainty reduction effort.