

DEC 06 1991.

MEMORANDUM FOR: B.J. Youngblood, Director
 Division of High-Level Waste Management
 Office of Nuclear Material Safety
 and Safeguards

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

FROM: Newton K. Stablein, Senior Project Manager
 and Chairman, Part 60 Roll Up Task Force
 Repository Licensing and Quality
 Assurance Project Directorate
 Division of High-Level Waste Management
 Office of Nuclear Material Safety
 and Safeguards

SUBJECT: REPORT OF THE JOINT U.S. NUCLEAR REGULATORY COMMISSION
 (NRC)-CENTER FOR NUCLEAR WASTE REGULATORY ANALYSES (CNWRA)
 TASK FORCE ON ROLL UP OF PART 60, SUBPART E, INTO PARTS
 60.111, 60.112, and 60.113 (PERFORMANCE OBJECTIVES)

INTRODUCTION: On October 21-24, 1991, a task force consisting of six NRC staff members (Kien Chang, Dick Codell, Dinesh Gupta, John Trapp, Rex Wescott, and King Stablein [chairman]) and two CNWRA staff members (Mike Miklas and Stephen Spector) met for the purpose of examining the relationship of the requirements in Part 60, Subpart E, to the performance objectives identified in Sections 60.111, 60.112, and 60.113. In particular, the task force was to determine how many of the siting and design criteria requirements of Subpart E could be rolled up into the performance objectives such that the number of analyses needed to address the requirements of Part 60 could be minimized. Having attempted to implement a roll up approach to Subpart E, the task force was to make recommendations to NRC management concerning ways to facilitate implementation of the roll up concept to the extent desirable and practicable. This memorandum contains the determinations and recommendations of the task force. All members of the NRC-CNWRA task force have reviewed and are in agreement with this report.

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BACKGROUND:

Prior to establishment of this task force, the issue of the relationship between (1) Part 60.112 and (2) the potentially adverse conditions of 60.122(c) and the implementation requirements of 60.122(a)(2) was initially raised as a regulatory uncertainty in CNWRA report CNWRA 90-003, "Identification and Evaluation of Regulatory and Institutional Uncertainties in 10 CFR Part 60," February 1990. These potential regulatory uncertainties were subsequently evaluated in the NRC staff's "Report on Uncertainty Reduction", April 1, 1991, in which the staff expressed the opinion that the regulatory intent was clear that the potentially adverse conditions should be evaluated in the context of the performance objectives. Although the CNWRA agreed that there is a strong logical relationship between the two portions of the regulation (i.e., the requirements of 60.122 are evaluated "in the context of the performance objectives"), the CNWRA stated that the current wording of Part 60 calls for additional, distinct analyses under 60.122. Furthermore, the CNWRA identified (see Report CNWRA 90-003) a number of uncertainties which suggest the need for several additional analyses to be made for each of the potentially adverse conditions in 60.122. Since the issuance of the NRC staff report, the NRC and CNWRA have had several interactions on this subject.

The NRC staff has interpreted the siting criteria of 60.122(c) as supporting the performance objectives and has considered that all the analyses for 60.122(c) requirements will be done as part of the evaluation of 60.112 and 60.113. Hence, the NRC staff considers the assessments of overall system and subsystem performance to be the primary mechanism for determining the extent to which the requirements of 60.122(a)(2) have been fulfilled. The staff considers that 60.122(a)(2) assures that such assessments are made with sufficient scope and detail, but that it does not require investigation and analysis beyond that required to adequately understand the effect on performance and support a finding with reasonable assurance.

On the other hand, the CNWRA staff originally considered that the language of 60.122(a) requires an assessment of the siting criteria distinct from that done for 60.112 and 60.113. Under this interpretation, an evaluation of the favorable and potentially adverse conditions independent of that required to demonstrate compliance with 60.112 and 60.113 is necessary.

During later NRC-CNWRA discussions, it was noted that a similar issue exists concerning the relationship of the design requirements in 60.130 through 60.135 to the performance objectives in 60.111, 60.112, and 60.113. Eventually the larger issue became whether all the individual requirements of Subpart E are to be rolled up in the performance objectives.

Resolution of these matters has a profound effect on the NRC staff development of the Format and Content Regulatory Guide and on the CNWRA staff's effort on the Regulatory Requirements and Required Elements of Proof (RR/REOP) structure. Until these matters are resolved, neither staff effort can proceed with the confidence that it is headed in the correct direction. NRC management recognized the stalemate and established a task force to take a fresh look at the whole subject of rollup of Subpart E into the performance objectives. The task force was given one week to attempt to implement a roll up approach to Subpart E and to make recommendations to NRC management based upon its collective judgment regarding the roll up approach.

DETERMINATIONS: Based upon four full days of intensive deliberations, the task force considers that the benefits and ramifications of implementation of a roll up approach are not easy to characterize or understand. The difficulties that this task force encountered in attempting to apply the roll up approach suggest that it be used cautiously, with full recognition of the problems that the language of Part 60 inevitably creates (e.g., the potential open-ended approach to engineering solutions conveyed by the term "to the extent practicable") and that expectations regarding the benefits of roll up be restrained.

In particular, it is important to appreciate that a roll up approach cannot be expected to result in a reduction in the number of staff evaluations or the amount of staff technical work that will be involved in the review of the license application. By this statement the task force means to emphasize that no amount of analysis of Part 60 can reduce the required content of the license application or the staff time required for assessment of that license application. However, there will be a reduction in the amount of additional work that could result from the incorrect identification of certain requirements as independent of others.

With respect to the roll up of the siting criteria of 60.122 into the performance objectives of 60.112 and 60.113, the task force concluded that under the current language of 60.122(a), the potentially adverse conditions of 60.122(c) do roll up into the performance objectives. By this the task force means that the requirements of 60.122(a)(2) are met if the requirements of 60.112 and 60.113 are met. This is consistent with the NRC position. In the Recommendations section of this memorandum, the task force has two specific recommendations (2 and 4) with respect to 60.122(a) that could further clarify the relationship of 60.122(c) to 60.112 and 60.113.

However, the task force concluded that, given the current language of 60.122(a)(1), the favorable conditions of 60.122(b) do not roll up into 60.112 and 60.113. Some of the favorable conditions appeared necessary for meeting the performance objectives, and others were considered to be independent of the performance objectives, but in neither case would meeting the requirements of 60.112 and 60.113 establish that the requirements of 60.122(a)(1) were met. The regulatory significance and potential problems of the favorable conditions not rolling up while the potentially adverse conditions do roll up were discussed but not resolved by the task force. In addition, depending on the precise definition of roll up, it is recognized that there are varying opinions as to whether the favorable conditions roll up under the existing language of 60.122. However, the intent of Part 60 is that the favorable conditions should roll up, and Recommendation 2 of this memorandum proposes adding language to 60.122(a) that would establish the roll up of 60.122(b) into the performance objectives of 60.112 and 60.113.

With respect to the roll up of the design requirements of 60.130-135 to 60.111, 60.112, and 60.113, the task force concluded that some, but by no means all, of the design requirements roll up into the performance objectives. This was due in large measure, but not entirely, to the task force's acceptance of Dan Fehringer's and Seth Coplan's interpretation that the exposures and release limits of Part 20 referenced in 60.111 address normal operations and not accident conditions, while 60.131(b) and some of the other design requirements clearly pertain to accident conditions. When the task force examined the language of Part 60, the Statement of Considerations, and NUREG-0804, prior to receiving the interpretation of Dan Fehringer and Seth Coplan, it was unable to come to a consensus as to whether 60.111 applied to accident conditions. Consequently, it appears that further action is needed to bring closure to the matter of whether and how 60.111 applies to accident and off-normal conditions.

If it is deemed desirable to have 60.130-135 rolled up into the performance objectives, some vehicle--whether it be the Design Basis Accident rulemaking or something else--could partially effect that goal by such measures as establishing that 60.111 does apply to accident conditions. However, it needs to be recognized that even such an action would still leave certain design requirements independent of the performance objectives. Hence, other modifications to Part 60 would need to be made to accomplish a complete roll up of 60.130-135 into the performance objectives. The task force did not specifically address the question of what other changes would need to be made, nor of whether it would recommend that such changes be sought, but the feeling of the task force in general appeared to be that roll up is not something that needs to be forced onto the design requirements. This feeling reflects the determination expressed above about the difficulties of using the roll up approach and the need for employing it cautiously.

- RECOMMENDATIONS:
- (1) The roll up of 60.122 into 60.112 and 60.113 should be affirmed in a high level formal document such as a Commission Paper, rulemaking, or the Format and Content Regulatory Guide. This is especially important because at the present time the most visible analysis of the relationship between 60.122(c) and the performance objectives is the CNWRA's Correlation of Regulatory Requirements and Regulatory Elements of Proof for 10 CFR Part 60, which expresses the results of an evaluation that are contrary to the roll up of 60.122(c) into 60.112 and 60.113.
 - (2) Most of the task force considered that addition of the following sentence or similar language to 60.122(a) would clarify the roll up relationship of 60.122(b) and 60.122(c) to 60.112 and 60.113: "The following are favorable and potentially adverse conditions to be considered when evaluating the ability of a repository to meet the performance objectives relating to isolation of waste."
 - (3) With a few slight modifications presented in Recommendation 4 below, the present language of 60.122(a) should remain in Part 60. Most of the members of the task force felt that the present language provides valuable guidance on how the siting criteria are to be perceived and investigated.



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NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

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 - (3) With a few slight modifications presented in Recommendation 4 below, the present language of 60.122(a) should remain in Part 60. Most of the members of the task force felt that the present language provides valuable guidance on how the siting criteria are to be perceived and investigated.

- (4) Proposed modifications to the current 60.122(a) language that would also clarify the 60.122(c)/60.112 and 60.113 relationship involve changing phrases that suggest that the potentially adverse conditions may need to be analyzed as separate and independent entities. For example, in 60.122(a)(2), instead of "If any of the potentially adverse conditions...is present...", the task force proposes that some expression such as "If one or more of..." or "If a combination of..." be substituted. There are a number of places in 60.122(a) where such substitutions would be advantageous.

Newton K. Stablein

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