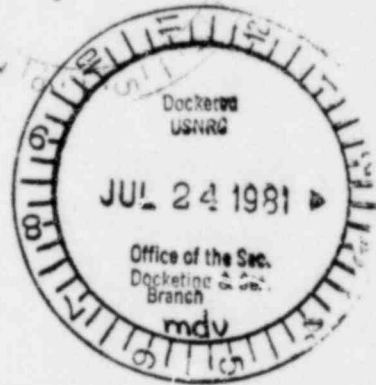


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Utility Nuclear Waste Management Group

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DOCKET NUMBER
PROPOSED RULE

PR-Misc Notice
Reg Guide

July 22, 1981

Secretary of the Commission
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555
Attention: Docketing and Service Branch

Dear Mr. Secretary:

Subject: Regulatory Guide - GS027-4, "Standard Format And Content Of Site Characterization Reports For High-Level Waste Geologic Repositories"

Our general comments are:

1. Since we understand that the proposed rule 10 CFR Part 60, Technical Criteria, has been revised, R.G. GS027-4 should be re-worked to assure it is consistent with the proposed rule and reissued for comment.
2. The draft guide asks for information in the SCR's that more properly belongs in the Safety Analysis Report or NEPA site selection documents.
3. The draft guide confuses the central purpose of site characterization, i.e., to address the suitability of a site to acceptably isolate and contain high-level waste, with concerns that relate to questions of safety during the active operational phase of the repository.
4. Since the draft rule has been modified in extensive Commission meetings, there are inconsistencies. To this end, it is not clear that the stated objective on page xii of the guide relating to the determination of compliance with Part 60 is appropriate. A few general examples highlight this. The definition of waste package in footnote number 1 on page 11-1 is not in agreement with the latest version presented to the Commission. Also, the treatment of Mineral Resources (Section 3.9) requires extensive analyses for site screening. Paragraph (c)(13) of 60.21 requires similar effort for the Safety Analysis Report (SAR). There are other instances where the SCR guide requests information/data that is called for in the SAR. Since the

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draft technical rule has not yet been published, it does not seem appropriate to prejudge it by expanding the requirements of 10 CFR 60.11 by including exhaustive requirements for waste package and performance assessment.

5. Objective 4 of the SCR, as stated on page xii of the guide, is to identify gaps in information that would affect determining full compliance with Part 60. It appears presumptuous that anyone can determine what additional assurance is needed at the SCR phase to fully determine compliance. This is especially troublesome when the guide is specific on the topics sought in the SCR. These topics go beyond 60.11 and add items from 60.21 (as yet not published for comment). Information more relevant to an SAR is being sought in the SCR. Since the SCR will also be required to be updated on a 6-month basis, the burden of updating SAR-level information in the SCR may detract important DOE resources from proceeding on the program.
6. Part D of the guide is supposed to be the essence of the site characterization program. It consists of 3 pages. This is contrasted by the voluminous requirements specified for Sections A and B.

In addition to such general observations, specific items are also noted. For example, it is not clear regarding the extent DOE has to address human intrusion in the SCR, as contrasted to the construction or license applications. Although elements of the technical rule may be addressed in the SCR, the degree to which they are should be examined. For example, there was extensive rewriting of the rule by the Commission regarding human intrusion. The guide apparently did not have benefit of such discussions and requires, on page 2-1 a discussion of "technical criteria" which include resource evaluation, human activity, waste form and retrievability. These are called technical criteria used for screening and site selection. Such segregation of a complex subject does not acknowledge the interrelationships and may lead to further confusion.

Certain aspects of this problem appear later in the guide. On page 3-17 there is a listing of items required for the SCR relative to mineral resources. Proposed 60.21(c)(13)

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clearly requires this same information and assessment at the SAR stage. There appears to be an inconsistency in these requirements.

Regarding waste form/host rock interactions, the guide requires extensive treatment of waste form, engineered barriers, and near-field environment. Several sections of the guide focus on each item separately, in a manner that is proposed for the SAR. This scattered treatment of a complex problem in the SCR does not appear conducive to a timely NRC, State or public review. Again, if SAR-level information is required in advance, such details should be clearly explained.

Section 7.2, Floods, implies analyses to address a 10,000-year period. In the discussion, failure of future hydraulic structures is required. This requires projection of future events and subsequent postulation of failure, in accordance with subsection 7.2.2.2. The general discussion is confusing since it appears to be oriented toward operations at a repository. The continual reference to PMF is misleading. Such flood levels are important to operational safety but may not be relevant to long-term performance. The implication is that a repository may be sited on the banks of a stream or river, much like a reactor facility. A distinction should be made between siting from an isolation standpoint and siting from an operational standpoint. If flooding is a potential concern for operations, it ought to be identified. However, the degree to which the SCR requires consideration of long-term (10,000-year) flooding raises uncertainties that are mostly speculation.

Section 8, Climatology, is another example of the guide placing undue emphasis on operation, as contrasted with isolation. The requirements for the operational aspects consume four pages while long-term aspects have only two pages or requirements. This appears to be the result of extensive reactor licensing experience biasing the information needs. For example, the guide requires on-site meteorological measures for dispersion calculations. Subsection 8.1.2.1 calls for an on-site program analogous to that expected from a reactor applicant. At least one annual cycle of data from the on-site program is required and at least 2 additional years prior to facility construction. This clearly contradicts subsection 8.1.1 which requires details only to the extent that they can impact design and allows use of representative data. Such transfer of preapplication requirements from reactor licensing to geologic repositories is questionable. For example, what definition will be used for "facility construction"? Extensive collection of on-site meteorological

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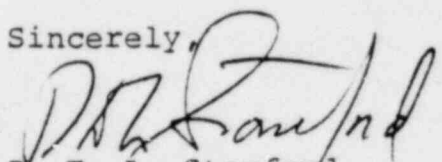
data may be misleading since the topography during operations may be substantially different due to surface storage of spoils. This type of consideration detracts from one's ability to focus on site selection. Obviously, an on-site meteorological program is called for in the SAR, but it is not clear how such dispersion estimates in the SCR can influence the uncertainty associated with the containment and isolation capabilities of a site.

Section 9, Environmental, Land-Use and Socioeconomic Characteristics, is another example of information that detracts from a site characterization program. This section introduces additional considerations that are not related to the qualifications of the site relative to containment or isolation. The Site Selection NEPA documentation may be a more appropriate vehicle for presenting this information. Section 9 appears to be an abbreviated EIS format and content guide. As such, it includes a subsection entitled Geology (9.1.3) and acknowledges cross-referencing from Chapter 3. This complicates the SCR.

Section 12, Performance Analysis, contains a discussion which highlights the deficiency of the guide. It clearly acknowledges that the DOE site characterization program may be different from that envisioned by NRC. Subsection 12.2 states that submittal of the SCR should not be contingent on development of information for these sections. The proposed technical rule envisions these details in an SAR. As also indicated in the guide, successive upgrading of models is foreseen with time. Is it NRC's intent to use the SCR as the mechanism to obtain inputs from DOE on a six-month cycle relative to SAR preparation? If the SCR is to undergo State and public comment, the readers will expect the DOE to follow the guide. However, it is not clear how this section assists the reader in making a comparative assessment among multiple sites.

In summary, the guide apparently was issued by NRC staff prior to a complete staff review. Furthermore, there have been extensive revisions of the Part 60 draft by the Commissioners in the interim. It is suggested that the guide be rewritten as necessary to satisfy the requirements of the proposed rule and reissued for public comment.

Sincerely,



R. E. L. Stanford
Program Manager