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Mr. Hubert J. Miller
Chief, Repository Projects Branch
Division of Waste Management
U.S. Nuclear Regulatory Commission
Mail Stop 623-SS
Washington, D.C. 20555

Re: Notice of Availability; NRC Draft Generic
Technical Position on In Situ Testing During
Site Characterization for High-Level Waste
Repositories (49 Federal Register 39,763)

Dear Mr. Miller:

These comments are submitted on behalf of the Edison Electric Institute (EEI) and Utility Nuclear Waste Management Group (UNWMG). We have reviewed the above-referenced Draft Generic Technical Position on In Situ Testing During Site Characterization for High-Level Waste Repositories ("Draft GTP" or "Draft") and believe that it provides helpful guidance concerning the conduct of underground tests for site characterization purposes. We also believe, however, that the document could be improved, and offer the specific suggestions contained in the enclosed Detailed Comments.

In particular, we wish to emphasize that, while in situ testing may be important, it will require integration with other testing. Further, in situ testing has its own limitations. In the final analysis, the nature, details and importance of such testing will vary from one location to another, depending upon site characteristics and the scope and detail of other investigative work.

This perspective on in situ testing is recognized in the Draft GTP in a number of places (see, e.g., Draft, pp. 9, 12, 16-19). Certain portions of the Draft, however, appear to overemphasize the importance of in situ testing. For example, page seven of the Draft contains the statement that "in situ testing is required to meet...[certain specified] provisions of the [Nuclear Waste Policy] Act," even though none of the indicated sections, in fact, refer to in situ testing at all. By overemphasizing the importance of in situ testing -- particularly in absolute terms without reference to the need for considering specifics pertinent to individual sites -- the Draft tends to suggest the need for large, expensive, time-consuming programs,

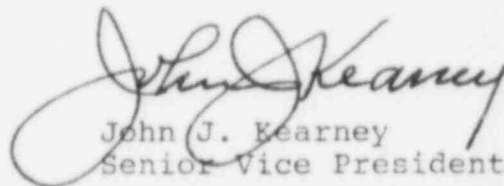
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irrespective of specific project needs. The enclosed Detailed Comments consider this matter further, and offer suggestions for improvement in terms of specific Draft GTP language.

In concluding, we would like to express our appreciation for the opportunity to comment on the Draft GTP and encourage the NRC staff to continue providing DOE with timely guidance concerning those aspects of the high-level waste repository program over which the Commission exercises authority. Please let us know if you would like to discuss our comments in greater detail, or other issues pertinent to your Draft GTP.

Sincerely yours,



John J. Kearney
Senior Vice President

JJK:jhd
Enclosure

EEI/UNWVG DETAILED COMMENTS ON DRAFT GENERIC
TECHNICAL POSITION ON IN SITU TESTING DURING SITE
CHARACTERIZATION FOR HIGH-LEVEL WASTE REPOSITORIES

Page 5

The first full paragraph on this page notes that:

Site characterization includes borings, surface excavations, excavation of exploratory shafts, limited subsurface lateral excavations and borings, and in situ testing at depth needed to determine the suitability of the site for a geologic repository, but does not include preliminary borings and geophysical testing needed to decide whether site characterization should be undertaken.

The underlining, however, should be extended to include the words "needed to determine the suitability of the site," in order to more properly present the scope of in situ testing as being bounded by need.

In addition, the third paragraph states that:

The objectives of in situ tests are: 1) to obtain data which will assess the suitability of a particular site and a particular geologic medium to host high-level nuclear waste, and 2) to provide realistic and representative input parameters for the design of a geologic repository and analysis of its performance.

However, as noted in the last sentence of the second paragraph and elsewhere, in situ testing is only one of a number of elements making up site characterization. Accordingly, the objectives should be reworded as follows:

1) to obtain data to facilitate assessment of the suitability of a particular site and a particular geologic medium to host high-level nuclear waste, and 2) to assist in providing realistic and representative input parameters for the design of a geologic repository and analysis of its performance.

Page 6 The words "the reliability of their outputs" should be inserted between the words "and" and "are" in the first line to more clearly reflect the intended meaning of the sentence.

Page 7 The last sentence of the first full paragraph on this page states that in situ testing "is required" to meet Sections 113(b)(1)(A)(ii), 113(b)(1)(B) and, 113(b)(1)(C) of the Nuclear Waste Policy Act. These sections, however, do not specifically require such testing. Accordingly, the last sentence of the paragraph should be reworded to state that:

In situ testing will assist in meeting these provisions of the Act.

Similarly, the last sentence of the second full paragraph states that "In situ test data will form a substantial part of the basis for site approval and construction authorizations." As noted elsewhere in the GTP, however, the overall need for in situ testing is site-specific. Accordingly, the quoted sentence should be reworded to state that:

In situ test data may form a substantial part of the basis for site approval and construction authorization.

Page 9 The first full sentence on this page states that "[I]n situ testing should significantly contribute to reducing uncertainties about the suitability of the host rock to provide long-term isolation and containment of the high-level nuclear waste." In addition, the first full paragraph on the page states:

An in situ testing program should consist of the following two major components: (1) observation of host rock characteristics and measurement of its properties prior to construction and waste emplacement (for example, in situ hydraulic head, permeability, in situ stress and ambient temperature fields, in situ geo-chemical characteristics, distribution of discontinuities, thermal conductivity, and geologic structure, etc.); (2) determination of response characteristics of the host rock and engineered components to construction and waste emplacement (for example, response to thermally, mechanically or hydraulically induced stresses).

The major end results obtained from in situ testing, however, will vary from site to site. Accordingly, the word "should" in the two sentences quoted above should be changed to "may."

In addition, the last two sentences of the second full paragraph state:

[I]n the absence of in situ test results confidence in the predictions based on borehole and laboratory testing alone will be extremely limited. Therefore, it is important to realize that while in situ testing is necessary, it is not sufficient by itself and requires integration with all other testing.

With respect to the first quoted sentence, however, confidence in predictions based on borehole and laboratory testing will vary from site to site. Accordingly, the words "will be extremely" should be changed to "may be." In addition, the second sentence does not necessarily follow from the first sentence. Accordingly, the word "therefore" should be eliminated.

Page 10

This page contains five "unique features that make in situ tests an essential element of site characterization and rational design of the repository." In situ testing, however, is by no means perfect. For example, in connection with the second of the listed features ("The Rock Mass in its Natural Conditions can be Tested"), practical factors may make the selection of a sample size difficult, boundary conditions may not be easy to define, and the interpretation of results is likely to present problems. Accordingly, the first sentence on the page should be reworded to state that "The following features, while not without certain off-setting aspects, make in situ testing an important element of site characterization and rational design of the repository."

Page 11

Item two on this page requires that the test program "be developed such that it has little or no adverse effect on long term repository performance." The actual effect, however, will vary from site to site. Accordingly, the above quoted language should be changed to state that the program must be "developed so as to minimize adverse effects on long term repository performance."

Page 14

The third sentence of the last full paragraph on this page states that:

The in situ test plan should identify issues that must be resolved by testing, provide a rationale for testing, discuss the types of analyses to be applied to the test data, describe the testing, and delineate, at least by reference, the quality assurance programs under which testing will be conducted.

The planning stage, however, may be too early for complete identification of issues, and in situ testing may not be expected to completely resolve any of them. Accordingly, the above quoted sentence should be reworded to state:

The in situ test plan should identify, to the extent practicable, issues that should be addressed by testing ...

Page 15

The fourth sentence of the second full paragraph on this page calls for the development of a testing rationale before the establishment of a test plan. In view of the importance of such a rationale, however, the desirability of a dialogue between the DOE and NRC should be specifically noted at this point.

In addition, the last sentence of this paragraph states:

[T]he test plan should identify; (a) all issues requiring resolution by in situ testing, and measurements (b) the information needs that must be satisfied in order to meet the performance criteria and regulatory requirements; and (c) the tests and their procedures, capabilities and limitations.

As indicated in comments above, in situ testing does not, by itself, guarantee the resolution of issues. Accordingly, the words "resolution by" in the sentence should be changed to "consideration through."

Page 17

The last two full sentences on this page read as follows:

When a construction authorization application is submitted for a particular site, that application must be complete and fully supported by the data and analyses necessary for a decision on construction authorization. It is essential that fundamental test results must be in place at the time of license application.

The meaning of the word "fundamental" in the last sentence, however, is unclear. Further, the sentence itself is unnecessary in view of the one which precedes it. Accordingly, the second sentence quoted above should be eliminated.