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Scott Grace
NMSS/WM/WMRP
623 SS
U.S. Nuclear Regulatory
Commission
Washington, D.C. 20555

Dear Mr. Grace:

Enclosed is a DOE outline of "Content Requirements for Description of Studies in Chapter 8 of the SCP." This outline provides a basis for discussion at the DOE-NRC meeting scheduled for October 29, 1985. Specific examples will be provided by BWIP, SRPO, and NNWSI at the meeting. Through discussion and possible revision of the outline at the meeting, we plan to reach agreement with NRC staff on the appropriate level of detail concerning plans to be presented in Chapter 8 of the SCP.

If you have any questions concerning this material, please contact Carol Hanlon at 252-1224.

Sincerely,

Donald H. Alexander

Donald H. Alexander
Acting Branch Chief,
Technology Branch
Office of Geologic Repositories

Enclosure

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CONTENT REQUIREMENTS FOR DESCRIPTIONS OF STUDIES IN CHAPTER 8 OF THE SCP

The following outline describes the information that will be provided in the SCP with regard to the plans for studies given in Section 8.3.1 through 8.3.4. A study may involve a single test or a set of tests and analyses, as appropriate. The tests include those measurements of physical parameters, or observations of physical phenomena, that are performed in the field or in the laboratory. Test activities include preparation of procedures, test set-up, conduct of the test, data acquisition and data reduction. The analyses referred to include those calculations or other evaluations needed to establish site characteristics and support design activities. Those analyses to address performance issues are not described in Section 8.3.1 through 8.3.4, but are described in Section 8.3.5.

The items listed in the outline will be addressed for studies, tests, and analyses to the extent that each item applies. Not all items will be applicable in all studies. Furthermore, judgment will be used in deciding at what specific location in Chapter 8 each of the items can best be addressed.

I. Purpose and Objectives

- Describe the information that will be obtained in this study. Briefly discuss how this information will be used to resolve issues.

- Provide the rationale and justification for the information to be obtained by the study. It can be justified by 1) a performance goal and a confidence level in that goal (developed via the performance allocation process and results that will be described elsewhere in the SCP), 2) a design goal and a confidence level in that goal (design goals beyond those related to performance issues) and/or 3) a direct federal, state, and other regulatory requirements for specific studies. Where relevant performance or design goals actually apply at a higher level than the study (e.g., where the goals apply to a group of studies), describe the relationship between this study and that higher level goal.

II. Rationale for Selected Study

- Describe the constraints (limits) that exist for the study, and explain how these constraints affect selection of test methods and analytical approaches. Factors to be considered include:

  - Potential impacts on the site from testing

  - Whether the study needs to simulate repository conditions

  - Required accuracy and precision of parameters to be measured with test instrumentation

  - Limits of analytical methods that will use the information from the tests

- Capability of analytical methods to support the study
- Time required versus times available to complete the study
- The scale of phenomena and parameters that need to be studied

- Provide the rationale and justification for the selected tests and analyses. Indicate the alternative test and analysis methods from which they were selected, including options for type of test, instrumentation, data collection and recording and alternative analytic approaches. Describe the advantages and limitations of the various options.

III. Description of Tests and Analyses

For each type of test:

- Describe the general approach that will be used in the test. Describe the key parameters that will be measured in the test and the experimental conditions under which the test will be conducted. Indicate the number of tests and their locations (spatial location on the site; and where the test is actually performed, such as the exploratory shaft, ground surface, laboratory).

- Summarize the methods to be used for the test. Reference any standard procedures (e.g., ASTM, API) to be used. If any of the procedures to be used are not standard, summarize the steps of the test, and reference the technical procedures document that will be followed during the test. If procedures are not yet available, indicate when they will be available. Indicate the level of quality assurance that will be applied to the test.

- Specify the tolerance, accuracy, and precision required in the test, where appropriate.

- Indicate the range of expected results of the test and the basis for those expected results.

- List the equipment required to conduct the test and describe briefly any such equipment that is special.

- Describe techniques to be used for data reduction and analysis of the results.

- Discuss the representativeness of the test and indicate any limitations that will apply to the use of the results.

For each type of analysis:

- State the purpose of the analysis, indicating the testing or design activity being supported. Indicate what conditions or environments will be evaluated and any sensitivity or uncertainty analyses that will be performed.

- Describe the methods of analysis, including any analytical expressions and numerical models that will be employed.

- Identify the data requirements of the analysis.

- Describe the expected output of the analysis.

- Describe the representativeness of the analytical approach to repository conditions, and indicate any limitations that will apply to the results.

IV. Application of Results

- Briefly discuss where the results from the study will be used for the support of other areas of study, for use in performance assessment, and for use in design.

- For the support of other areas of study, refer to other investigations which use the information produced in the study described above.

- For performance assessment uses, refer to specific performance assessment analyses (described in Section 8.3.5) which will use the information produced from the studies described above, and refer to any use of the results for model validation.

- For design uses, refer to, or describe, where the information from the study described above will be used in engineering system design and development, construction equipment design and development.

V. Schedule and Milestones

- Provide the durations of and interrelationships among the principal activities associated with conducting the study (e.g., preparation of test procedures, test set-ups, testing, data analyses, preparation of reports), and indicate the key milestones associated with the study activities.

- Describe the timing of this study relative to other studies and other program activities, for those studies that will affect or be affected by the schedule for completion of the subject study.

  (Dates for activities or milestones for the study should not be provided. Only durations and interrelationships will be provided here; schedules will be provided in Section 8.5).

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Headquarters/OCRWM

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