

MEETING MINUTES
MEETING ON RENEGOTIATION OF THE MAY 7-8, 1986,
AGREEMENT ON FORMAT AND CONTENT OF U.S. DEPARTMENT OF ENERGY
STUDY PLANS, JULY 23, 1992

INTRODUCTION

On July 23, 1992, representatives of the U.S. Nuclear Regulatory Commission, U.S. Department of Energy (DOE), State of Nevada, and Nye County, Nevada, met to discuss the renegotiation of the DOE/NRC May 7-8, 1986, Agreement on Format and Content of DOE study plans. Fourteen days prior to the meeting the DOE provided participants with copies of its proposed revisions to the content requirements for descriptions of studies in study plans. That information is included as Attachment 1 to this report. The material provided by DOE was used as a basis for discussions. A copy of the meeting notice is Attachment 2; the list of attendees is Attachment 3; and viewgraphs and meeting handouts are Attachment 4.

Prior to the meeting the NRC received comments relevant to the meeting topic from the Inyo County, California, Yucca Mountain Project Assessment Office. Those comments are included as Attachment 5. That office is opposed to proposed changes to the format and content of study plans as it believes deletion of references (procedures) to quality assurance controls in study plans will seriously affect the quality of NRC's review.

GENERAL DISCUSSIONS

Introductory statements were made by attending parties. The State of Nevada representative presented a history of the Format and Content Agreement and stated that a certain level of detail was needed in the Site Characterization Plan (SCP) and in study plans. The state does not wish to see information needed in study plans (e.g., procedures) scattered throughout several documents. The NRC staff noted that it was willing to participate in discussions, but it was not ready to come to any agreements at this time. DOE stated, based on the experience gained through the development and implementation of study plans since 1986, that its aim in requesting revisions to the information required in study plans was toward more specific information in each study plan and elimination of much of the duplicative regulatory rationale for each study. In this way the content requirements would be more tailored to the type of study plan (e.g., field tests, modeling, or synthesis).

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The NRC, in its introductory statement, noted bases for its review of study plans. NRC review of study plans is based on the fact that study plans are considered an extension of the SCP which was a statutory document. Other reasons for NRC's review are to determine whether or not the study will cause adverse impacts to the site or the ability to gather data from other tests necessary for site characterization, and, as part of NRC's pre-licensing responsibility, to determine if information necessary for a complete license application is being collected.

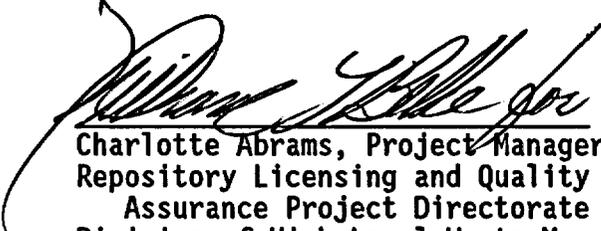
The NRC requested that an up-to-date list of applicable procedures be included with each study plan issued for review. It is acceptable for the procedures list to be an attachment to the transmittal letter for the study plan. This should allow DOE to provide the most up-to-date listing of procedures with each study plan. The NRC will continue to monitor whether or not appropriate procedures are being applied through surveillances and observations of audits.

Meeting attendees discussed specific revisions proposed by DOE in its draft. The NRC staff proposed changes to DOE's submittal (See mark-up, Attachment 6).

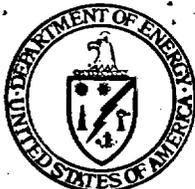
The State of Nevada requested that any revision to the format and content agreement also include the statement that "copies of all transmittals and communications, including enclosures, between DOE and NRC regarding study plans and their review as described [in the agreement] will be provided to the affected state and local governments by the originating organization at the time of its original issuance." DOE agreed to have its General Counsel give an opinion whether this is appropriate to include in a DOE/NRC agreement.

SUMMARY

Following discussions it was agreed that some time be allowed for all parties to review and discuss potential changes to the format and content agreement. NRC staff will review the DOE detailed revised version of the agreement and a future date will be established for resolution of the proposed revisions to the format and content for study plans.


 Charlotte Abrams, Project Manager
 Repository Licensing and Quality
 Assurance Project Directorate
 Division of High-Level Waste Management
 U.S. Nuclear Regulatory Commission

 9/30/92
 Christian E. Einberg
 Regulatory Integrations Branch
 Office of Civilian Radioactive
 Waste Management
 U.S. Department of Energy



Department of Energy

Washington, DC 20585

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Mr. Joseph J. Holonich, Director
 Repository Licensing & Quality Assurance
 Project Directorate
 Division of High-Level Waste Management
 Office of Nuclear Material Safety
 and Safeguards
 U.S. Nuclear Regulatory Commission
 Washington, D.C. 20555

Dear Mr. Holonich:

In preparation for the July 23, 1992 DOE/NRC management meeting on the level of detail agreement for Study Plans, the DOE has prepared a revised draft DOE/NRC agreement for review by the NRC (enclosure 1). The rationale for the proposed changes is summarized in the following paragraphs. This revised agreement would replace the May 7 & 8, 1986 and the December 15, 1988 agreements. These agreements predated the acceptance of the Site Characterization Plan (SCP) and the DOE's quality assurance (QA) program by the NRC. Since these documents were signed, the Yucca Mountain Site Characterization Project (YMP) has developed a detailed plan for the management of site characterization. SCP Study Plans are an integral part of this process. However, the current format and procedures that relate to Study Plans are not producing the optimum product for the project. Experience gained in the site characterization program during the last six years has led the DOE to propose a revision to the DOE/NRC level of detail agreement on Study Plans. The DOE believes that the following major points should be addressed.

1. How the format of SCP Study Plans can be revised to optimize their role in the plan for management of the Yucca Mountain Site Characterization Project?
2. How NRC concerns about adverse effects on the site can be addressed in an efficient and timely manner, i.e., without delaying the initiation of work any more than necessary?

The revised agreement that is being proposed by DOE involves new "content requirements for descriptions of studies in study plans" (attachment 1 to enclosure 1) and procedural agreements identified as points 2 through 4 of the agreement. The purpose of a new agreement is to more accurately reflect the present YMP site characterization program and to streamline and improve the process of study plan preparation, review, approval and revision.

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The proposed agreement includes changes that the DOE believes are needed in the format of study plan documents. This includes changes to the requirement for referencing technical procedures and recognition of YMP procedures that should eliminate the requirement for 3 to 6 month hold on the beginning of work while the NRC conducts a "Phase I review".

The proposed format for study plans represents an improvement designed to streamline and clarify the preparation and review of the documents. At present, the format contains unnecessary material, as discussed above, and is unsuited to much of the work involved in site characterization. The present format refers to "tests and analyses". DOE believes that the broader term "activities" would be more appropriate and consistent with the hierarchy and nomenclature in the SCP. We believe that this change in terminology should be accompanied by a change in the organization and requirements of the study plan outline. The present organization is structured by the idea that the work being described will involve data collection in a laboratory setting or from instrumentation in a borehole or a similar situation. However, many site characterization activities do not fit such a format. For instance, geologic mapping involves activities such as observing and interpreting geometric and spatial relations in the field. This revision aims to improve and broaden the format for the description and evaluation of these activities.

The proposed format distinguishes four types of activities: (1) observation and description of field relations, (2) laboratory or field-based testing, (3) data analyses, and (4) synthesis and modeling. The information required for each type of activity is provided in the Study Plan annotated outline (attachment 1 to enclosure 1). We believe that our improved format will facilitate reviews by emphasizing important material and removing duplicative material from the study plan. For a comparison to the old agreement see enclosure 2. DOE believes that this will significantly shorten the time involved in the preparation, review and approval of study plans.

Certain material should not be required in study plans written in the future. All discussion of regulatory rationale is unnecessary, because this information is provided in the SCP and has, subsequently, been baselined and controlled by the DOE. All reference to QA controls on the work to be performed is unnecessary, because QA requirements are now specified in documentation that is maintained outside of Study Plans.

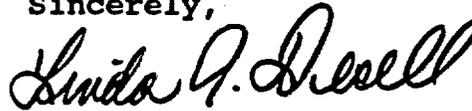
All technical procedures that have been written and approved are available to the NRC for information purposes. There is now a requirement for each Study Plan to contain a list of technical procedures to be used in that study. It has proven difficult to keep these lists current with the advent of new procedures and revisions. It leads to unnecessary paperwork with no improvement in quality, because of the potential to continually revise study

plans as procedures are developed and/or modified. We recommend that a list be maintained by each participant that identifies all technical procedures that are being used for each study plan that falls within the participants' area of responsibility. These lists would be available to the NRC on-site representative who could request copies of any procedure for review, either directly from the participant organization or from the YMPO. DOE does not maintain schedules for the preparation and approval of participant procedures. Job Packages are prepared prior to starting work and include verification that required technical procedures are approved and available.

DOE suggests that the completion of reviews by the NRC, to identify major concerns and objections, should no longer be required to start work on studies that have met YMP requirements. We believe that there is good justification for making this change. The NRC Phase I Review addresses major concerns with study activities, "that, if started, could cause significant and irreparable adverse effects on the site, and the site characterization program, or the eventual usability of the data for licensing". The YMP has developed internal procedures that address these concerns in a systematic way. All of these procedures are subject to quality assurance (QA) surveillance and audit. Test planning packages for each study activity include a waste isolation analysis and a test interference evaluation. These analyses are available for audit by the NRC. In addition, the NRC Phase I review was initiated before DOE and participant quality assurance programs were accepted by the NRC. All project participants, as well as DOE's, quality assurance programs have since been accepted by the NRC and all work is done under approved procedures that are traceable to the requirements in each participant's quality assurance program description.

Should you have any questions or require more information, please contact Chris Einberg at (202) 586-8869.

Sincerely,



for John P. Roberts
Acting Associate Director for
Systems and Compliance
Office of Civilian Radioactive
Waste Management

Enclosures:

1. Draft 1992 DOE/NRC Agreement on Study Plans
2. DOE Content Requirements for Descriptions of Studies in Study Plans

cc: w\enclosures
Alice Cortinas, CNWRA, San Antonio, TX

cc: w\enclosures
C. Gertz, YMPO
R. Loux, State of Nevada
M. Baughman, Lincoln County, NV
J. Bingham, Clark County, NV
B. Raper, Nye County, NV
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F. Mariani, White Pine County, NV
V. Poe, Mineral County, NV
E. Wright, Lincoln County, NV
J. Pitts, Lincoln County, NV
R. Williams, Lander County, NV
J. Hayes, Esmeralda County, NV
M. Hayes, Esmeralda County, NV
B. Mettam, Inyo County, CA
C. Abrams, NRC

Predecisional Draft
Preliminary Draft

Preliminary Predecisional Draft

ENCLOSURE 1
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AGREEMENT ON STUDY PLANS

1. Study Plans are documents that present details of the studies and activities from Chapter 8.3.1 of the YMP Site Characterization Plan (SCP). Study Plans are developed by the YMP participant organizations and are approved by the YMPO. The content requirements for study plans are presented in attachment 1. These requirements are not retroactive to Study Plans that have already been submitted to the YMPO. The DOE will determine if any Study Plans now approved or in review would benefit from conversion to the revised format.
2. Technical procedures for the site characterization activities described in the study plans are developed and approved by the YMP participant organizations. A current list of approved technical procedures for each approved study plan will be maintained by the participants and will be available to the NRC. The listed procedures will be provided to the NRC staff or on-site representative upon request. Technical procedures are not required to be referenced in Study Plans.
3. Some references cited in Study Plans may not be readily available to the NRC. Examples of not-readily-available references are listed in attachment 2. Not-readily-available references for approved Study Plans may be requested by the NRC staff or on-site representative and will be provided by DOE.
4. The NRC may conduct an initial acceptance review or a more detailed technical review of any approved Study Plan at its discretion. The completion of such NRC reviews is not required for DOE to start work on activities described in approved Study Plans that have met all YMP prerequisites.

Joseph J. Holonich
Director, Repository
Licensing and QA
Project Directorate

John P. Roberts
Acting Associate
Director for Systems
and Compliance

Carl P. Gertz
Project Manager
YMPO

Attachments:

1. DOE Content Requirements for Descriptions of Studies in SCP Study Plans.
2. Examples of not-readily-available references.

Predecisional Preliminary Draft

ATTACHMENT 1
DOE CONTENT REQUIREMENTS FOR DESCRIPTIONS
OF STUDIES IN SCP STUDY PLANS

The test program presented in Chapter 8.3.1 of the SCP will be subdivided into a hierarchy of increasing detail. The SCP test program hierarchy will include (in increasing detail): generic program, investigation, study, activity and test procedures. Details for the studies, listed in Chapter 8.3.1 of the SCP, will be presented in the study plans. Study plans will be separate from the SCP proper and will be issued as required for site characterization. Individual test methods will be discussed in study plans.

The following outline describes the information on studies that will be presented in SCP study plans. A study plan may involve a single activity or a set of activities, as appropriate. An activity includes preparation of procedures, set-up, data acquisition and data reduction. Analyses include those calculations or other evaluations needed to assess site characteristics and support design activities. All site characterization studies will be completed under DOE's quality assurance program, that has been accepted by the NRC.

The items listed in the outline will be addressed for studies and activities to the extent that each item applies. Not all items will be applicable to all studies.

In some cases, activities may be planned for later stages in the study when detailed plans depend on the results of earlier activities. Under these circumstances, it will not be possible to provide the same level of detail for all activities at the time the study is first issued. In such cases, revision 0 of the study plan will present complete descriptions of activities that occur early in the study and less detailed information for activities that occur later.

I. Purpose and Objectives

Describe the objectives of this study. What technical issues, of importance to the project, will be addressed by this study? What aspect of site characterization will be accomplished through this study?

II. Scope of Work

Describe the general approach for completing the study, including (as appropriate) an evaluation of existing literature; a description of the key parameters that will be measured or observed and analyzed in the study, and a description of the methods that will be used to complete the study including a discussion of the technical procedures to be used. Provide illustrations such as maps, cross sections and schematic layouts of tests or other planned activities.

If the study proposes the observation and description of features in the field, provide discussion on:

- The area to be studied.
- Aspects of the area that are unknown or poorly known.
- Type of data to be collected.
- Methodology or classification system to be used.
- Product, maps, cross-sections, etc., to be produced.

If the study proposes laboratory or field testing, provide:

- The test methods to be used.
 - The representativeness of the test in terms of spatial and temporal variability of the parameters that will be measured.
 - Specific constraints on testing described in the study.
- Factors to be considered include:

1. Potential impacts on the site from testing.
2. Whether the test needs to simulate repository conditions.
3. Applicability of tests conducted in the laboratory to the scale of phenomena in the field.
4. Generic and site specific test to test interference.
5. Significant interference between tests and design and construction of the Exploratory Studies Facility.
6. Alternative test methods and a rationale for selecting a specific method, if appropriate.

If the study proposes analyses, provide discussion on:

- The purpose of the analysis. Indicate any sensitivity or uncertainty analyses that will be performed.

Preliminary Draft Predecisional Draft

- The methods of analysis, including any analytical expressions or statistical methods that will be employed.
- The data input requirements of the analysis.
- The representativeness of the analytical approach (e.g. with respect to spatial and temporal variability of existing conditions and future conditions) and indicate limitations and uncertainties that will apply to the results.

If the study proposes synthesis and modeling, provide discussion on:

- Scope of the data to be included in the study.
- The methods to be used, including computer software, if applicable.
- The objectives, or problems, that will be addressed by the study.
- The relationship of this study to pre-existing models or syntheses.
- Sensitivities of the model to input and calculation methods.
- How the model, or synthesis, will be tested against data and other models.
- How the model will be updated to incorporate new data.

III. Application of Results

Discuss how the results of this study will support performance assessment and design activities and other site characterization studies. Provide specific information about the way data from this study will be used in other activities, including performance assessment, design and site characterization. Discuss the technical issues that will be addressed by the data collected under this study.

IV. Schedule

Summarize the schedule for the study, including the estimated length of the investigation and any milestones and decision points for the study. Show the interrelationship with other studies, indicating dependencies on data derived from other studies and activities that will affect or be affected by the scheduled completion of this study.

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ATTACHMENT 2
Examples of Not-Readily-Available References

1. Contractor and participant reports that will not be captured in the national data base for government-sponsored information (National Technical Information Service).

Such items as USGS Open-File Reports, SAND Reports, etc. are captured in the National Technical Information Service.

2. Foreign national journals and books that would not be expected to be found in a good research library (i.e. Library of Congress).
3. State publications.
4. Symposium, meeting, and workshop abstracts and papers that are not published.
5. Commercial and trade contract reports (e.g. EPRI).
6. Academic M.S. theses (dissertations are not included because they can be obtained from University Microfilms Inc., of Ann Arbor, Michigan).
7. Participant management plans, QA plans, etc.
8. Computer code manuals.
9. Draft, unpublished, or "letter" reports and documents.
10. Personal communications (written only) (oral or personal communications are not included).
11. Manuscripts of "in press," "in review," or "in preparation" works are to be provided only if the publication outlet is a medium defined in this list.
12. Monograph reports and handbooks from Federal agencies (e.g., local USDA soil reports).

ENCLOSURE 2

DOE CONTENT REQUIREMENTS FOR DESCRIPTIONS OF STUDIES
IN STUDY PLANS

The test program presented in Chapter 8.3.1 of the SCP will be subdivided into a hierarchy of increasing detail. The SCP test program hierarchy will include (in increasing detail): generic program; investigation; study; activities; ~~tests, and analyses;~~ and test procedures. Details for studies and ~~activities test and analyses,~~ listed in Chapter 8.3.1 of the SCP, will be presented in study plans. Study plans will be separate from the SCP proper and will be issued periodically throughout site characterization. Individual test methods will be discussed in study plans.

The following outline describes the information on studies ~~and tests and analyses~~ that will be presented in SCP study plans. A study plan may involve a single activity or a set of activities ~~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.~~ Testing activities includes preparation of procedures, test set-up, conduct of the test, data acquisition, and data reduction. The analyses include those calculations or other evaluations needed to assess site characteristics and support design activities. All site characterization studies will be completed under DOE's quality assurance program, that has been accepted by the NRC.

The items listed in the outline will be addresses for studies and ~~activities tests and analyses~~ to the extent that each item applies. Not all items will be applicable to all studies.

In some cases, ~~activities test and analyses~~ may be planned for later stages in the study when for ~~which~~ detailed plans depend on the results of earlier ~~activities tests and analyses.~~ Under these circumstances, it will not be possible to provide the same level of detail for all ~~activities tests and analyses~~ at the time the study is first issued. In such cases, the ~~initial~~ revision 0 of the study plan will present complete descriptions of ~~activities tests and analyses~~ that occur early in the study and less detailed information for ~~activities tests and analyses~~ that occur later.

I. ~~Purpose and Objectives of studies:~~

- Describe the ~~objectives information that will be obtained~~ in of this study. ~~Briefly discuss how this information will be used, and~~ What technical issues, of importance to the project, will be addressed by this study? What aspect of site characterization will be accomplished through this study?
- ~~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 the results that will be described elsewhere in the SCP); 2) a design goal and a confidence level in that goal (a design~~

~~goal beyond those related to performance issues; 2) 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:~~

- ~~• Provide the rationale and justification for the selected tests and analyses (including standard tests). Indicate the alternative test and analytical methods from which they were selected, including options for the type of test, instrumentation, data collection and recording, and alternative analytical approaches. Describe the advantages and limitations of the various options; and~~
- ~~• Provide the rationale for the selected number, location, duration, and timing of tests with consideration to various sources of uncertainty (e.g., test method, interference with other tests, and estimated parameter variability). This rationale should also identify reasonable alternatives, summarize reasons for not selecting these alternatives and reference, if available, reports which evaluate alternatives considered (refer to NRC Observation 8);~~
- ~~• Describe the constraints. (see Section II)~~

II. Scope of Work

Describe the general approach for completing the study, including (as appropriate) an evaluation of existing literature; the key parameters that will be measured, or observed and analyzed in the study; including a discussion of the technical procedures to be used. Provide illustrations such as maps, cross sections, and schematic layouts of tests.

If the study proposes the observation and description of features in the field provide discussion on:

- The area to be studied.
- Aspects of the area that are unknown or poorly known.
- Type of data to be collected.
- Methodology or classification system to be used.
- Product, maps, cross-sections, etc., to be produced.

~~• Since studies are comprised of tests and analyses, provide~~
If the study proposes laboratory or field testing, provide for each type of test provide discussion on:

~~Describe the general approach that will be used in the test. Describe 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 (e.g. spatial location relative to the site, exploratory shaft facility elements, repository layout, stratigraphic units, depth, and test location).~~

~~Summarize the test methods to be used. Reference any standard procedures (e.g. ASTM, API) procedures to be used. If any of the procedures to be used are not standard, or if a standard procedure will be modified, summarize the steps to test, how it will be modified, and reference the technical procedures that will be followed during the test. If the procedures are not yet available, indicate when they will be available. Indicate the level of quality assurance and provide a rationale for any tests which are not judged to be QA level 1. Reference the applicable specific QA requirements that will be applied to the test.~~

~~Specify the tolerance, accuracy, and precision required for the test, where appropriate.~~

~~Indicate the range of expected results of the test and the basis for these expected results.~~

~~List the equipment required for the test and describe 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 including why the test results are considered representative of future conditions or the in terms of spatial and temporal variability of the parameters that will be measured existing conditions. Also indicate limitations and uncertainties that will apply to the use of the results, and~~

~~Provide illustrations such as maps, cross sections, and facility design drawings to show the locations of tests and schematic layouts of tests.~~

~~Relationship of the test to the set of performance goals and confidence levels.~~

Describe The specific constraints on testing described in the study 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 test study needs to simulate repository conditions;

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

- ~~----- Limits of analytical methods that will be used to use the information from the tests.~~
- ~~----- Capability of analytical methods to support the study and~~
- ~~----- Time required versus time available to complete the study.~~
- ~~----- The scale of the phenomena, especially the limitations of the equipment relative to the scale of the phenomena to be measured and the~~
- Applicability of tests studies conducted in the laboratory to the scale of the phenomena in the field.
- ~~----- Interrelationships of tests involving significant interference with other tests and how plans have been designed or sequenced to address such interference.~~
- Generic and site specific test to test interference.
- ~~----- Interrelationships involving significant interference among tests and exploratory shaft facility design and construction (as appropriate, refer to Section 8.4 of the SGP or its references for specific exploratory shaft facility design information such as design drawings or specifications) (refer to NRC observation 4).~~
- Significant interference among tests and design and construction of the Exploratory Studies Facility.
- If appropriate, describe alternative test methods and provide a rationale for selecting a specific method, if appropriate.

For If the study proposes each type of analyses provide discussion on:

- ~~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; Discuss the relationship of the analysis to the set of performance goals and confidence levels.~~
- Describe the methods of analysis, including any analytical expressions and numerical models that may well be employed;
- ~~----- Reference the technical procedures document that will be followed during the analysis. If procedures are not yet available, indicate when they will be available. Indicate the level of quality assurance that will be applied to the analysis and provide a~~

- ~~- rationale for any analyses which are not judged to be QA level 1. Reference the applicable QA requirements;~~
- Identify the data input requirements of the analysis;
- ~~- Describe the expected output and accuracy of the analysis; and~~
- Describe the representativeness of the analytical approach (e.g., with respect to spatial and temporal variability of existing conditions and future conditions) and indicate limitations and uncertainties that will apply to the results.

If the study proposes synthesis and modeling provide discussion on:

- Scope of the data to be included in the study.
- The methods to be used, including computer software, if applicable.
- The objectives, or problems, that will be addressed by the study.
- The relationship of this study to preexisting models or syntheses.
- How the model, or synthesis, will be tested against data and other models.
- How the model will be updated to incorporate new data.

III. Application of results

Briefly discuss how the results of this study will support performance assessment and design activities and other site characterization studies. Provide specific information about the way data from this study will be used in other activities, including performance assessment, design and site characterization. Discuss the technical issues that will be addressed by the data collected under this study.

- ~~- Briefly discuss where the results from the study will be used for the support of other studies performance assessment, design, and characterization studies.~~
- ~~- For performance assessment uses, refer to specific performance assessment analyses (described in Section 6.3.5 of the SCA) 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~~

~~construction equipment design and development and engineering system design design and development (e.g., waste package, repository engineered barriers, and shafts and borehole seals); and~~

~~For characterization uses, refer to, or describe, where the information from the study described above will be used in planning other characterization activities.~~

IV. Schedule and milestones

Summarize the schedule for the study, including the estimated length of the investigation and any milestones and decision points for the study. Show the interrelationship with other studies, indicating dependencies on data derived from other studies and activities that will affect or be affected by the scheduled completion of this study.

~~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 including decision points associated with the study activities.~~

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

~~Data for activities or milestones, including durations and interrelationships, for the study plans will be provided. These should reference the master schedules provided in Section 6.5 of the SCP.~~

JUL 6 1992

MEMORANDUM FOR: Joseph J. Holonich, Director
 Repository Licensing and Quality Assurance
 Project Directorate
 Division of High-Level Waste Management

FROM: Charlotte Abrams, Senior Project Manager
 Repository Licensing and Quality Assurance
 Project Directorate
 Division of High-Level Waste Management

SUBJECT: FORTHCOMING NUCLEAR REGULATORY COMMISSION/U.S. DEPARTMENT OF
 ENERGY MEETING ON FORMAT AND CONTENT OF STUDY PLANS

DATE: July 23, 1992

TIME: 9:00 a.m. - 5:00 p.m.

LOCATION:* One White Flint North
 11555 Rockville Pike
 Rockville, MD 20852
 Room 4-B-11

PURPOSE: To hold discussions on the renegotiation of the May 7-8, 1986,
 Agreement on Format and Content of U.S. Department of Energy (DOE)
 Yucca Mountain study plans.

PARTICIPANTS:

NRC
 J.Holonich
 C.Abrams
 D.Brooks
 K.McConnell

DOE
 J.Roberts
 C.Einberg
 S.Jones
 S.Skuchko

State of Nevada
 C.Johnson
 S.Frishman
 T.Hickey

NH16.11
 Wm-11
 102.8

Affected Local Governments

- S. Bradhurst, Nye County, NV
- D. Bechtel, Clark County, NV
- V. Poe, Mineral County, NV
- R. Williams, Lander County, NV
- C. Schank, Churchill County, NV
- B. Mettam, Inyo County, CA

- M. Baughman, Lincoln County, NV
- P. Niedzielski-Eichner, Nye County, NV
- F. Sperry, White Pine County, NV
- P. Goicoechea, Eureka County, NV
- L. Vaughan II, Esmeralda County, NV

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Charlotte E. Abrams, Senior Project
 Manager
 Repository Licensing and Quality Assurance
 Directorate
 Division of High-Level Waste Management

cc: S. Goldberg, OMB
 D. Weigel, GAO
 P. Meyer, NAS

Enclosure: Meeting agenda

* Meetings between NRC and DOE are open to members of the public, petitioners, intervenors, or other interested parties wishing to attend as observers pursuant to the spirit of "Open Meeting Statement of NRC Staff Policy," 43 Federal Register 28058, dated June 28, 1978, which details the open meeting policy for applicants and licensees.

DISTRIBUTION

Central File	BJYoungblood	JJLinehan	RBallard	LSS
On-Site Reps	JHolonich	CNwRA	MFederline	LPDR
CAbrams	DBrooks	ACNW	KMcConnell	PDR
HLPD R/F	NMSS R/F	CAbrams		

OFC	HLPD <i>CA</i>				
NAME	CAbrams/dh				
DATE	07/7/92				

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OFFICIAL RECORD COPY

Enclosure

AGENDA

DOE/NRC Meeting on Renegotiation of the May 7-8, 1986,
Agreement on Format and Content of DOE Yucca Mountain Study Plans

July 23, 1992, 9:00 a.m. - 5:00 p.m.
One White Flint North, Room 4-B-11
Rockville, MD

Welcome/Protocol/Opening Remarks

NRC
DOE RW-331
State of Nevada
Counties

Purpose of Meeting

DOE

Rationale for New Agreement
Lessons Learned
Recommended Changes

DOE

Discussion

All

Summary Remarks

NRC
DOE
State of Nevada
Counties

Ajourn

DOE/NRC Management Meeting
Renegotiation of Study Plan Agreement

July 23, 1992

<u>Name</u>	<u>Organization</u>	<u>Telephone #</u>
1. Chris Einberg	DOE/HQ RW-331	202-586-8869
2. Steve Frishman	State of NV	702/687-3744
3. Keith McConnell	NRC/NMSS	301/504-2532
4. David Brooks	NRC/N	301/504-3457
5. Dick Keefer	USGS/Denver	303/236-0450
6. Dan Dresser	R.F. Weston	202 646 6781
7. Ray Wallace	U.S. Geological Survey	202 586-1244
8. JAN DOCKA	Weston	202 646 6720
9. MARTHA PENDELTON	WCAP	
10. NORMAN FEDERLINE	NRC/NMSS/DNLMH/WCAP	301-504-3396
11. Rex Wescott	NRC/NMSS/HLP	301-504-2167
12. Judy Treichel	STATE OF NV	702-778-1885
13. STAN ECHOLS	Winston Strawn	202-371-5777
14. Tom Statton	M'gO/Woodward-Clyde	702 794 1830
15. Steven E. LeRoy	CRUXUS 1070/Duke-LV	702-794-7836
16. Sharon Skuchko	DOE/HQ - RW-331	202-586-4590
17. Ralph Rogers	M'gO/Woodward-Clyde	702-794-1892
18. Thomas W. Gerstedt	DOE/YMPO	702-794-7590
19. MARY L. BIRCH	M'gO/DEKE	703-204-8862
20. Kenneth R. Hoots	NRC	(301) 504-2447
21. John Buckley	NRC	301-504-2513
22. Mal Murphy	Hope County	202-7521-6001
23. LINDA DESELL	DOE/RW-331	(202) 586-1462
24. SUSAN JONES	DOE/YMPO	(702) 794-7613
25. Dick Crawley	DOE/YMPO	(702) 794-7585
26. Charlotte Abrams	NRC/HLPD	(301) 504-3403
27. Joe Holovich	NRC/HLPD	(301) 504-3391

Principle Changes to the Study Plan Annotated Outline

I. Deleted regulatory rationale

This rationale was established in the SCP and is baselined in the Site Characterization Program Baseline (SCPB). The preliminary goals and confidence levels from the SCP performance allocation will be revisited during site characterization. Revisions to this performance allocation will be documented in the SCPB -- not in the study plans.

II. Deleted additional rationale and moved constraints on testing (as appropriate) to the discussion of the study (new section II).

This section applies to field and laboratory testing and is more logically a subsection of the description of the study rather than a stand alone section.

III. Deleted references to QA levels and QA requirements.

QA levels are no longer part of the DOE's QA program. QA requirements are documented in grading packages which can be audited by the NRC.

Principle Changes to the Study Plan Annotated Outline (continued)

III. *Deleted references to technical procedures.*

The DOE has delegated the review, approval, and control of technical procedures to the technical participants. Study Plans, on the other hand, are DOE documents that are reviewed, approved and controlled by the DOE. Programmatically, the appropriate level to maintain current lists of approved technical procedures is with the technical participants and not in DOE study plans.

The term "nonstandard procedure" is not utilized by the project participants. Under the current QA program, prototype/experimental work is documented in scientific notebooks. Once a procedure is approved by a participating organization, they are considered standard procedures.

Deleted information that is more appropriately discussed in technical procedures (tolerance, accuracy, and precision).

III. *Text clarification.*

IV. *Text clarification. Deleted reference to the master schedule in Section 8.5 of the SCP.*

Interference Evaluation
•INFORMATION CHECKLIST•

The following documents describe essential criteria and planning for proposed boreholes:

- Criteria Letter(s)
- Request(s) for Test Planning Package(s)
- ESFDR
- SBTFRD

Needed information:

- A. Location (including topographic map)
 - 1. legible topographic map showing borehole location, repository block, other nearby boreholes and features
- B. Purpose of the Borehole
- C. Physical Dimensions of Borehole
 - 1. depth
 - 2. diameter
 - 3. angle from vertical
 - 4. expected amount of deviation
- D. Proximity
 - 1. other boreholes
 - a. existing
 - b. planned
 - 2. repository
 - 3. other underground facilities, experiments, etc.
 - 4. significant geologic features immediately in the area within 1000 feet of the borehole
 - 5. water table
 - 6. other surface-based testing studies
- E. Drilling Methods
 - 1. wet/dry - conventional or reverse circulation
 - 2. use of tracer gases
- F. Handling of In Situ Water
 - 1. below water table drilling
 - 2. encountering perched water

G. Borehole Construction

1. casing
 - a. surface casing
 - b. borehole casing to TD
2. grouting
 - a. casing grouting
 - b. borehole grouting

H. Expected Borehole Conditions

1. borehole geology
2. anticipated faults borehole will/may encounter
3. expected fracture conditions, rock quality

I. Access Roads

1. new roads construction
2. dust control methods

J. Drill Pad Construction

1. pad dimensions
2. pad's affect on surface topography and water drainage
3. dust control methods

K. Experiments and Operations

1. materials used and purpose
2. duration
3. materials/objects permanently left behind

**General Concerns in Evaluations
of the Impacts of Surface Drillholes on Waste Isolation**

I. Water

1. Surface sources

- A. Roadwatering for dust control**
- B. Drill pad dust control and rig washdown**
- C. Runoff**
- D. Cuttings piles**
- E. Accidental water spillage**

2. Underground

- A. Water loss during drilling**
 - i. Normal**
 - ii. Fishing**
 - iii. Unexpected**
- B. Recovered or produced during drilling**
 - i. Perched water**
 - ii. Water table**

II. Materials (other than water)

1. Surface construction

- A. Dust control**
- B. Pad construction**

2. Used in borehole construction

- A. Use of grout for surface casings**
- B. Drilling fluids**
- C. Other materials left in the borehole**

III. Sealing Considerations

- 1. Conductivity of Seals**
- 2. Seals may not achieve design objectives**

IV. Fast pathways

- 1. To the water table**
- 2. Gas flow to the surface**

- **Access Roads**
 - **New**
 - **Size**
 - **Location**
 - **Identification of existing roads that will be used**
 - **Proximity to repository**
 - **Dust control methods**
- **Pad Construction**
 - **Dust control methods**
 - **Materials and purpose**
 - **Surface topography**
 - **Drainage**
- **Experiments/operations**
 - **Materials used and purpose**
 - **Duration**
 - **Materials/objects permanently left behind**

**Necessary Information for Evaluating
the Impacts of Surface Drillholes on Waste Isolation**

- Purpose
- Location on a topographic map
- Physical dimensions (Diameter, Depth)
- Proximity
 - Other boreholes
 - Repository
 - Other underground facilities, experiments, etc.
 - Significant features such as faults
 - Water table
 - Flood plain (*flood analysis*)
- Drilling methods
 - Wet/Dry
 - Other
- Methods for handling cuttings
 - Fluid preparation
 - Disposal
- Borehole construction
 - Casing
 - Material
 - Depth
 - Method of setting
 - Drilling fluid
 - Other materials and purpose
 - Size of rig
- Expected drilling conditions
 - Anticipated geology
 - Expected hole conditions
 - Fractures
 - Rock Quality
 - Anticipated problems and countermeasures



PLANNING DEPARTMENT

YUCCA MOUNTAIN REPOSITORY ASSESSMENT OFFICE

DRAWER L • INDEPENDENCE • CALIFORNIA 93526

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County of
INYO

Roger DeHart
Planning Director

Brad Mettam
Project Coordinator

July 15, 1992

Joseph J. Holonich, Director
Repository Licensing and Quality Assurance
Project Directorate
Division of High-Level Waste Management
Office of Nuclear Material Safety
and Safeguards
U.S. Nuclear Regulatory Commission
M/S 4H3
Washington, D.C. 20555

Dear Mr. Holonich:

Inyo County would like to go on record as being opposed to the proposed changes to the format and content of the SCP Study Plans by the DOE, as described in their July 8, 1992 letter (Roberts-Holonich). Inyo County, an affected unit of local government under the Nuclear Waste Policy Act as Amended, is approximately fourteen miles from the proposed repository site at Yucca Mountain. As Inyo County is also hydrologically down-gradient from the site, we have specific concerns about the geologic and hydrologic site characterization activities the DOE will perform.

The proposed deletion of reference to QA controls will seriously affect the quality of the review performed by statutory and regulatory oversight agencies, as the implementation of QA controls in the Study Plan activities can only be seen if the controls are cited in the plans. The deletion of both the QA controls and technical procedures is also inconsistent with the DOE's stated goal of ultimately determining both the suitability and the licensability of Yucca Mountain as a repository for High-Level waste. In addition, elimination of the NRC Phase I Review seems guaranteed to encourage "activities that ... could cause significant and irreparable adverse effects on the site". Inyo County is specifically concerned with boreholes through the repository

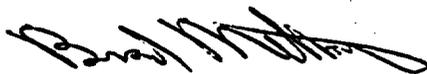
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PDR WASTE
WM-11 PDR

NH03/10
102.7
11-11

horizon to the saturated zone. We consider the potential for creation of a migration path to the aquifer to be great, but have been unable to generate any concern on the DOE's part for this potential disqualifier.

Continued review of detailed Study Plans by the NRC and affected parties is crucial to a site characterization program that is both scientifically and publicly acceptable.

Sincerely,



Brad Mettam
Project Coordinator

NRC REVISION TO ENCLOSURE 1

DRAFT 1992 DOE/NRC
AGREEMENT ON STUDY PLANS

1. Study plans are documents that present details of the studies and activities from Chapter 8.3.1 of the YMP Site Characterization Plan (SCP). Study plans are developed by the YMP participant organizations and are approved by the YMPO. The content requirements for study plans are presented in attachment 1. These requirements are not retroactive to study plans that have already been submitted to the YMPO. The DOE will determine if any study plans now approved or in review would benefit from conversion to the revised format. NRC will be provided a list of study plans to be converted or developed under the revised format.

DOE agrees
2. Only those study plans transmitted from DOE headquarters, Office of the Associate Director for Systems and Compliance, will be considered official transmittals for NRC review. The time allowed for NRC review will only start after the study plan, not transmittal letter, is received *as indicated by the date on the controlled document receipt form.*
3. Technical procedures for the site characterization activities described in the study plans are developed ~~and approved~~ by the YMP participant organizations. A current list of approved technical procedures for each approved study plan will be maintained by the participants, and will be submitted to NRC as an attachment to the study plan transmittal letter. The listed procedures will be provided to the NRC staff or on-site representative upon request. Technical procedures are not required to be listed in a study plan if a list is provided as stated above. The NRC staff should be notified by DOE when any technical changes to procedures result in changes to activities in the study plan.
4. Not-readily-available references (Attachment 2) should be made available to NRC by telephone request, within five working days of that request, *if the references are critical to NRC's Phase I Review.*
5. NRC should receive all study plans in sufficient time prior to the start of work (90 days). If NRC's review has not been received after that 90-day period, DOE may begin work, at its own risk. For studies that ~~do not~~ involve ~~not~~ surface disturbance or penetration, DOE has the option to begin work (again, at its own risk) as soon as the study plan is submitted to the NRC. ~~DOE may request expedited reviews of study plans~~ *NRC will consider exemptions on a case-by-case basis.*
6. NRC will conduct an initial acceptance review or a more detailed technical review of any DOE approved study plan at its discretion.
7. If a study plan is revised after the NRC has conducted its review, *the* DOE should notify NRC of the study plan's revision and conduct an analysis of whether or not changes to the study plan activities will have an impact on the site, other tests, or the site's ability to isolate waste. If no impacts are determined, DOE should submit the revised study plan to NRC for information. If there are potential impacts, the study plan revision should be submitted to NRC for review.

DOE transmittal letter will summarize the technical changes, and specifically highlight changes to discussions of potential impacts or interferences.

8. Study plans should describe in sufficient detail what work is planned and how it will be conducted. Without sufficient detail the NRC staff may have to rely on information contained in the technical procedures. The study plan should be in sufficient detail to stand alone.

ATTACHMENT 2

REFERENCES THAT DOE WILL SUPPLY UPON REQUEST

- NOT previously transmitted*
1. Contractor and participant reports such as Open-File Reports, Sandia reports, Los Alamos reports, etc.
 2. Reports published in foreign national journals and books.
 3. State publications.
 4. Symposium, meeting, and workshop abstracts and papers.
 5. Commercial and trade contract reports (e.g., EPRI).
 6. Academic M.S. theses and dissertations.
 7. Participant management plans, QA plans, etc.
 8. Computer code manuals.
 9. Draft, unpublished, or "letter" reports and documents.
 10. Personal communications (oral ~~or personal~~ communications are not acceptable in study plans).
 11. Manuscripts of "in press" works (manuscripts "in review" or "in preparation" are not acceptable in study plans).
 12. Monograph reports and handbooks from Federal agencies (e.g., local USDA soil reports).