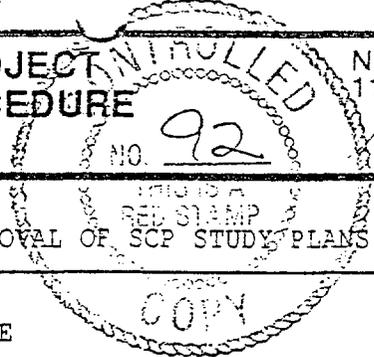


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Title

AP-1.10Q PREPARATION, REVIEW, AND APPROVAL OF SCP STUDY PLANS

1.0 PURPOSE AND SCOPE

This procedure defines the requirements and responsibilities for preparation, review, and approval of the Yucca Mountain Project Site Characterization Plan (SCP) Study Plans. This procedure implements the U.S. Department of Energy/U.S. Nuclear Regulatory Commission (DOE/NRC) Format and Content Requirements for SCP Study Plans (Exhibit 1).

2.0 APPLICABILITY

This procedure applies to all Study Plans developed by the Project participants to support the Yucca Mountain Project SCP.

3.0 DEFINITIONS

3.1 INTERIM CHANGE NOTICE (ICN)

An ICN is an approved and controlled document that is used to temporarily change an approved Study Plan prior to revising the affected plan or is used to provide notice of a change to temporarily change the SCP for consistency with an approved Study Plan or in response to internal comments on the SCP in accordance with this procedure, AP-3.3Q (Change Control Process), and AP-3.6Q (Configuration Management). An ICN to the SCP is initiated only if a change is required to a section of the SCP which is under formal change control, in accordance with AP-3.3Q, Change Control Process.

3.2 MANDATORY COMMENTS

Mandatory (or major) comments are those a reviewer determines represent major technical concerns or inconsistencies with applicable DOE policies and regulatory requirements. A major technical concern must be of sufficient importance that the failure to resolve the concern may jeopardize the success of the study or activity. Mandatory comments require resolution by the author(s) and reviewer. Reviewers should cite the applicable requirement, quality assurance provision, or technical rationale for changing the SCP Study Plan and should provide a proposed resolution.

3.3 NONMANDATORY COMMENTS

Nonmandatory (or minor) comments are those the reviewer designates for consideration by the author(s) about the organization or content of the document. Failure to resolve a nonmandatory comment would not compromise the ability to complete the work described in the Study Plan to meet the objectives of the SCP. Nonmandatory comments are incorporated at the

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discretion of the author(s). Dispositions of all nonmandatory comments must be documented on comment response forms.

3.4 EDITORIAL COMMENTS

Editorial comments are grammatical or typographical errors and are resolved at the author's discretion. Editorial comments are recorded directly on the text of the Study Plan and do not become part of the permanent record.

3.5 PRINCIPAL INVESTIGATOR (PI)

The PI is the individual who has the technical responsibility for a particular technical task. This responsibility includes, but is not limited to, planning and cost control, the day-to-day technical direction and control of the item or activity, and the assembly of a support team to accomplish the item or activity. This term may be synonymous with task leader or project engineer, depending on the Yucca Mountain Project participants.

3.6 QUALITY ASSURANCE REVIEW

A quality assurance review is an examination of a document to determine its compliance with the Yucca Mountain Project Quality Assurance Plan (NNWSI/88-9) and Project quality-related administrative procedures.

3.7 SCP STUDY PLAN

An SCP Study Plan is a DOE document that describes the studies, activities, tests, and analyses that constitute site characterization activities as defined by the Nuclear Waste Policy Act of 1982 as amended. The plan is consistent with the descriptions presented in Chapter 8 of the SCP or supplemented in SCP progress reports. The required level of detail, format, and content of the Study Plans is defined in the May 7 and 8, 1986, agreement between the NRC and the DOE (Exhibit 1) and as amended by Section 5.1.1 of this procedure.

3.8 SCREENING REVIEW

A screening review is a documented, traceable review conducted by a single qualified reviewer prior to initiation of formal technical or quality reviews to insure that the document is complete and addresses all applicable DOE and NRC requirements.

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3.9 TECHNICAL REVIEW

A technical review is a documented, traceable review performed by qualified reviewers who are independent of the work described in the plan and have demonstrated expertise in their area of review. Technical reviews are in-depth, critical analyses and evaluations of documents, material, or data.

4.0 RESPONSIBILITIES

4.1 YUCCA MOUNTAIN PROJECT MANAGER

The Project Manager or a designee is responsible for insuring the implementation of this procedure for the Yucca Mountain Project.

4.2 DIRECTOR, REGULATORY AND SITE EVALUATION DIVISION (R&SED)

The Director, R&SED, or a designee is responsible for coordinating the preparation, review, and approval of SCP Study Plans in accordance with this procedure, including the resolution of comments generated by the OCRWM and the NRC.

4.3 DIRECTOR, QUALITY ASSURANCE DIVISION (QAD)

The Director, QAD, or a designee, is responsible for reviewing and verifying that SCP Study Plans meet all applicable QA requirements and for monitoring Study Plan review activities in accordance with NNWSI/88-9.

4.4 BRANCH CHIEF, REGULATORY INTERACTIONS BRANCH (RIB)

The Branch Chief, RIB, is responsible for assisting the Director, R&SED, with coordination of the Study Plan preparation, review, revision, and approval. The Branch Chief, RIB, is responsible for all Yucca Mountain Project actions other than final approvals and letters of direction, and coordinates Yucca Mountain Project Study Plan reviews among the divisions of the Yucca Mountain Project Office (Project Office).

4.5 TECHNICAL PROJECT OFFICERS (TPOS)

The TPOs are responsible for providing qualified technical staff to prepare and review SCP Study Plans in their area of program responsibility in accordance with the Quality Assurance Plan (QAP) and the Work Breakdown Structure (WBS), for submitting approved Study Plans to the Yucca Mountain Project, for providing qualified technical experts for independent Project technical reviews of SCP Study Plans, and for resolving comments from the Project, the OCRWM, and the NRC reviews.

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4.6 TECHNICAL AND MANAGEMENT SUPPORT SERVICES (T&MSS)

The T&MSS is responsible for assisting the Project Office in review and approval of the SCP Study Plans, including reviews completed by the Project, the OCRWM, and the NRC, and for tracking the status of Study Plan preparation and review.

4.7 OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT

The OCRWM is responsible for interfacing with the NRC and providing guidance to the Project Office in the area of Study Plan completion. The OCRWM reviews and approves SCP Study Plans in accordance with OCRWM's line implementing procedure.

5.0 PROCEDURE

5.1 STUDY PLAN PREPARATION

5.1.1 The TPOs designate a principal investigator or other technical staff to prepare Study Plans in accordance with the following requirements:

1. Plans should be editorially consistent with the OCRWM Production Guidance Manual (1985) to the extent practicable.
2. Plans should conform to level of detail, format, and content specified in the May 7 and 8, 1986, DOE/NRC agreement (Exhibit 1).
3. Plans should include an abstract provided in front of the table of contents.
4. Plans should include an appendix that provides additional information on the quality assurance measures that will be applied to Study Plan activities. The appendix must include quality assurance level assignments developed in accordance with AP-5.4Q as well as the QA grading package developed in accordance with AP-5.17Q for the activities contained in the study, unless previously approved quality assurance level assignments are still in effect.
5. Plans should be consistent with the descriptions of the study given in Section 8.3 of the Statutory SCP, unless an ICN (Exhibit 2) is provided.

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5.1.2 Participating organizations perform technical and quality assurance reviews of Study Plans prepared by them, by staff other than the authors, in accordance with their procedures prior to submittal to the Yucca Mountain Project.

5.1.3 The TPO or a designee ensures that the Study Plans meet the requirements given in paragraph 5.1.1 and that the plans are prepared and reviewed by qualified staff.

5.1.4 If the Study Plan differs significantly from the Technical Planning Basis: SCP in objectives, scope, or testing methods, then the TPO, or a designee, prepares an ICN (Exhibit 2) to request changes to the SCP.

5.1.5 The TPO or a designee submits the participant approved Study Plan, any ICNs and documentation of the qualifications of the principal investigators to the Director, R&SED.

5.2 PROJECT REVIEW OF STUDY PLAN

5.2.1 Upon receipt of a draft Study Plan, the Branch Chief, RIB, or a designee initiates a screening review of the Study Plan. This review will focus on (1) consistency with DOE policies and programmatic interfaces, including SCP schedules and technical integration, (2) consistency with applicable NRC requirements and agreements, and (3) completeness of any ICNs.

5.2.2 Comments generated in the screening review are documented on comment resolution forms (Exhibit 3).

5.2.3 If deficiencies identified in the review are severe enough that, in the judgment of the Branch Chief, RIB, the Study Plan is not acceptable for Project Review, the Branch Chief, RIB, returns the Study Plan to the TPO for revision with the comment resolution forms.

5.2.4 When a Study Plan is judged to be acceptable for Project Review, the Branch Chief, RIB, or a designee initiates quality assurance and technical reviews of the Study Plan in accordance with this procedure. The written request establishes the review criteria, the proposed reviewers, and the schedule for completing the review. The Study Plan may, at this time, be transmitted to OCRWM for review in parallel with the Project Office review. In cases where OCRWM will conduct a technical review (Section 5.5), the Branch Chief, RIB, may specify that the review conducted by OCRWM in accordance with OCRWM procedures, meets the requirements defined for technical review by this procedure.

5.2.5 For ongoing studies, the Yucca Mountain Project Office may approve the Study Plan after the screening review is completed with concurrence from the Director, QAD.

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5.2.6 Reviews of Study Plans are performed only by qualified staff. Documentation of the qualifications of reviewers will be completed internally by participant organizations prior to initiation of the Project review.

5.2.7 Review criteria shall be consistent with the following review criteria in this procedure and may be supplemented by the Director, R&SED, if necessary.

5.2.7.1 The quality assurance reviewers examine the document for consistency with the quality assurance requirements of the Project, including as a minimum the quality assurance level assignments and QA grading packages for the planned work and consistency with AP-5.4Q and AP-5.17Q.

5.2.7.2 The technical reviewers evaluate the technical adequacy of the Study Plan, including the descriptions of proposed tests and analyses, interrelationships with other studies, ties to performance and design issues and consideration of alternative test methods. This review should include an evaluation of (1) whether or not the planned tests will provide the information required by the SCP, (2) whether or not the Study Plan is consistent with Section 5.1.1 of this procedure, and (3) whether or not the technical descriptions in the Study Plan are correct and adequate, within the reviewer's area of expertise.

5.2.8 Reviewers document mandatory and nonmandatory comments on comment resolution forms (CRFs, Exhibit 3) and Section 2 of Exhibit 4. A proposed resolution should be included. Reviewers record editorial comments on the text and attach the text to the set of CRFs. Editorial comments marked on the text will not become part of the permanent comment-response record. After completion of the review, the responsible TPO or a designee returns the completed CRFs, and Exhibit 4 to the Branch Chief, RIB.

5.3 COMMENT RESOLUTION

5.3.1 The Branch Chief, RIB, or a designee consolidates the CRFs from all reviews. Comments that are redundant, out of scope, or technically incorrect may be withdrawn from the set of CRFs with concurrence from the original reviewer(s). The Branch Chief, RIB, then forwards this consolidated set to the responsible TPO. After the principal investigator(s) review the comments, a comment resolution meeting may be scheduled to discuss mandatory comments. As a minimum, representatives of the principal investigator(s); the Branch Chief, RIB; and reviewers will attend the meeting.

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5.3.2 If the principal investigator(s) and reviewers are unable to resolve a mandatory comment, the Director, R&SED, develops a final disposition with the concurrence of appropriate YMP manager(s) and the responsible TPO. The final disposition is based on the Director's judgment and may involve activities such as the development of agreeable compromise or independent review. The disposition will be documented on correspondence traceable to the CRF. The responsible TPO coordinates revision of the Study Plan to address mandatory comments and submits the revised Study Plan and completed CRFs to the Branch Chief, RIB.

5.3.3 The Branch Chief, RIB, or a designee distributes the revised Study Plan and CRFs for mandatory comments to the reviewers.

5.3.4 The reviewers will verify resolutions of their mandatory comments. If their mandatory comments have been resolved, the reviewers sign and return their CRFs, and Exhibit 4 to the Branch Chief, RIB.

5.3.5 If the reviewer considers resolution of mandatory comments inadequate, the Director, R&SED, or a designee develops a final disposition in accordance with section 5.3.2 of this procedure. The Branch Chief, RIB, then returns the disputed CRF(s) to the TPO with instructions for revision.

5.4 YUCCA MOUNTAIN PROJECT APPROVAL

Upon completion of the quality assurance and technical reviews, a copy of the revised Study Plan and the CRFs are submitted to the Director, R&SED, and the Director, QAD, for Study Plan approval, or for transmittal to OCRWM for review (see section 5.5).

5.5 OCRWM REVIEW AND APPROVAL

5.5.1 The OCRWM reviews SCP Study Plans in parallel with or following the Project review. The Director, R&SED, provides the lead Branch Chief, OCRWM, copies of the Study Plan and any SCP ICNs. The OCRWM review of the Study Plan is completed in accordance with their procedures.

5.5.2 After the OCRWM has completed their Study Plan review and consolidated their comments on OCRWM CRFs, a comment resolution meeting may be scheduled to discuss the OCRWM mandatory comments and to reach agreement with the Project on the proposed resolutions. At a minimum, the principal investigator(s) and the Branch Chief, RIB, or their designees participate in the comment resolution meeting with OCRWM.

5.5.3 If the participants in the OCRWM comment resolution meeting are unable to resolve a mandatory comment, then the lead OCRWM Branch Chief and the Director, R&SED, and the responsible TPO develop a final resolution. If

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resolution cannot be obtained at this level, the appropriate Headquarters Division Director and the Yucca Mountain Project Manager are consulted to facilitate comment resolution.

5.5.4 The responsible TPO coordinates resolution of the comments and revision of the Study Plan. The responsible TPO submits the revised text and completed OCRWM CRFs to the Branch Chief, RIB.

5.5.5 The Branch Chief, RIB, or a designee reviews the revised Study Plan to verify the adequacy of the changes to the text and advises the Director, R&SED, of the results. If the OCRWM comment resolution is incomplete, the Director, R&SED, returns the Study Plan to the responsible TPO for additional revision. If the resolution of OCRWM comments is deemed to be adequate, the Director, R&SED, forwards the Study Plan and OCRWM CRFs to the OCRWM for approval.

5.6 NRC REVIEW

5.6.1 After OCRWM approval, the Study Plan is sent to the NRC for review and to the State of Nevada for their information. The OCRWM also forwards a copy of the completed OCRWM CRFs to the Director, R&SED, for the Project file.

5.6.2 The Branch Chief, RIB, or a designee documents written comments received from the NRC on CRFs (Exhibit 3). If appropriate, based on the judgment of the Director, R&SED, and the responsible Branch Chief, OCRWM, the Branch Chief, RIB, and the PI(s) may work with the OCRWM to develop proposed resolutions to the NRC written comments. This may include meetings with the NRC for clarification of the written comments and for discussion of proposed resolutions to the written comments.

5.6.3 The TPO coordinates revision of the Study Plan according to the proposed resolutions to address major NRC comments and submits the revised Study Plan and completed CRFs to the Director, R&SED.

5.6.4 The Branch Chief, RIB, or a designee reviews the revised Study Plan to verify that the NRC comments have been adequately addressed. If the comment resolution is incomplete, the Director, R&SED, returns the Study Plan to the responsible TPO for revision. If the comment resolution is adequate, the Director, R&SED, and the Project Quality Manager sign the approval sheet (Exhibit 4). The Project Manager forwards the Study Plan to the OCRWM for their approval.

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5.7 REVISION OF APPROVED STUDY PLANS

If revisions to approved Study Plans prove to be necessary, proposed revisions are incorporated by the principal investigator or a designee as directed by the Project Office. Revisions may be initiated by the principal investigator(s), the TPO, or representatives of the Yucca Mountain Project. Changes will be implemented in accordance with AP-3.3Q and AP-3.6Q.

5.7.1 Revision and review of changes to the objectives, testing strategy, test methods, and quality assurance level assignments follow the procedures outlined in Sections 5.2 through 5.6 for the preparation and review of the original Study Plan.

5.7.2 As a temporary method to identify changes to an approved Study Plan, the TPO or a designee prepares an ICN (Exhibit 2). The responsible TPO approves the ICN and submits the signed ICN to the Director, R&SED, for review and approval.

5.7.2.1 The Director, R&SED, evaluates the scope of the ICN and, if necessary, prepares a transmittal letter to initiate a Project review of the ICN. A Project review is only required if the Director, R&SED, does not consider the proposed revisions to be minor. The transmittal letter will define the types of review and approval required for ICN approval.

5.7.2.2 The reviewer(s) documents all comments regarding the ICN and proposed resolutions to the comments on CRFs (Section 5.2.8).

5.7.2.3 The Director, R&SED, compiles a complete set of CRFs and forwards this set to the responsible TPO. Comment resolution follows the procedures established in Section 5.3 of this procedure.

5.8 DISTRIBUTION OF SCP STUDY PLANS AND ICNS

Study Plans and ICNs are maintained and controlled in accordance with implementing procedure AP-1.5Q, Issuance and Maintenance of Controlled Documents. Study Plans and ICNs are distributed by T&MSS to individuals designated by the Branch Chief, RIB, or a designee.

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6.0 REFERENCES *

NWPA (Nuclear Waste Policy Act), 1983. "Nuclear Waste Policy Act of 1982," Public Law 97-425, 42 USC 10101-10226, Washington, D.C.

NWPAA (Nuclear Waste Policy Amendments Act), 1987. Amendments to the Nuclear Waste Policy Act of 1982 - Public Law 100-203 - December 22, 1987, 100th Congress.

U.S. Department of Energy, Office of Civilian Radioactive Waste Management, Site Characterization Plan, Yucca Mountain Site, Nevada Research and Development Area, Nevada, 1988.

U.S. Department of Energy, Office of Civilian Radioactive Waste Management, 1985. Production Guidance Manual.

U.S. Department of Energy, Yucca Mountain Project Office, Quality Assurance Plan, NNWSI/88-9.

AP-1.5Q, Issuance and Maintenance of Controlled Documents.

AP-1.7Q, Records Management

AP-3.3Q, Change Control Process.

AP-3.6Q, Configuration Management.

AP-5.4Q, Assignment of Quality Assurance Levels.

AP-5.17Q, Application of Graded Quality Assurance.

* Latest revision.

7.0 EXHIBITS AND ATTACHMENTS

Exhibit 1. DOE Content Requirements for Descriptions of Studies in Study Plans.

Exhibit 2. Interim Change Notice.

Exhibit 3. Study Plan Comment Resolution Form.

Exhibit 4. Study Plan Review Checklist.

Exhibit 5. Approval Form for Study Plan.

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8.0 RECORDS

The following documents shall be Quality Assurance Records and shall be maintained in accordance with AP-1.7Q, Records Management:

Document submitted for review.
Transmittal letter initiating Project review.
Documentation of personnel qualifications.
Complete copy of the comment resolution record.
Approved Interim Change Notices.
Approved revisions of the Study Plan.

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DOE CONTENT REQUIREMENTS FOR DESCRIPTIONS OF STUDIES
IN STUDY PLANS

The test program presented in Chapter 8 of the SCP will be subdivided into a hierarchy of increasing detail. The SCP test program hierarchy will include (in increasing detail): generic program; specific program; investigation; study; tests and analyses; and test procedures. Details for studies and tests and analyses, listed in Chapter 8 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 procedures will be referenced in the study plans.

The following outline describes the information on studies, tests, and analyses that will be presented in the study plans. 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 include those calculations or other evaluations needed to assess site characteristics and support design activities.

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

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

1. Purpose and Objectives of Studies:

1.1 Objectives of the Study

Describe the information that will be obtained in this study.
Briefly discuss how this information will be used; and

Exhibit 1. DOE Content Requirements for Descriptions of Studies in Study Plans.

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1.2 Regulatory Rationale and Justification

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); (3) 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.

2. Rationale for Selected Study:

2.1 Technical Rationale and Justification

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 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.

2.2 Constraints on the study

Describe the constraints 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;

Exhibit 1. DOE Content Requirements for Descriptions of Studies in Study Plans (continued).

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- Limits of analytical methods that will use the information from the tests;
- Capability of analytical methods to support the study;
- 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 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; and
- Interrelationships involving significant interference among tests and ESF design and construction, as appropriate (refer to Section 8.4 of the SCP or its references for specific ESF design information).

3. Description of Tests and Analyses:

o Since studies are comprised of tests and analyses, provide for each type of test:

- 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, ESF elements, repository layout, stratigraphic units, depth, and test location);
- Summarize the test methods. Reference any standard procedures (e.g., ASTM, API) 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 of the test, how it will be modified, and reference the technical procedures 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 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 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 for the test and describe briefly any such equipment that is special;

Exhibit 1. DOE Content Requirements for Descriptions of Studies in Study Plans (continued).

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- 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 spatial variability of existing conditions. Also indicate limitations and uncertainties that will apply to the use of the results;
 - Provide illustrations such as maps, cross sections, and facility design drawings to show the locations of tests and schematic layouts of tests, and
 - Relationship of the test to the set performance goals and confidence levels.
- o 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. Discuss the relationship of the analysis to the set performance goals and confidence levels;
 - Describe the methods of analysis, including any analytical expressions and numerical models that will 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 that 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 variability of existing conditions and future conditions) and indicate limitations and uncertainties that will apply to the results.

4. Application of Results:

Briefly discuss where the results from the study will be used for the support of other studies (performance assessment, design, and characterization studies);

Exhibit 1. DOE Content Requirements for Descriptions of Studies in Study Plans (continued).

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4.1 Resolution of Design and Performance Issues

For performance assessment uses, refer to specific performance assessment analyses (described in Section 8.3.5 of the SCP) that 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 and development (e.g., waste package, repository engineered barriers, and shafts and borehole seals); and

4.2 Interfaces with other site characterization studies

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

5. Schedules and Milestones:

- o 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;
- o Describe the timing of this study relative to other studies and other program activities that will affect, or will be effected by, the schedule for completion of the subject study; and
- o Dates for activities or milestones, including durations and interrelationships, for the study plans will be provided. These should reference the master schedules provided in Section 8.5. of the SCP.

Exhibit 1. DOE Content Requirements for Descriptions of Studies in Study Plans (continued).

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Title

AP-1.10Q PREPARATION, REVIEW, AND APPROVAL OF SCP STUDY PLANS

INTERIM CHANGE NOTICE		T-AD-086
SCP AND SCP STUDY PLANS		3/89
ICN NUMBER:	EFFECTIVE DATE:	PAGE of
APPLIES TO:		
SCP Section Number _____		
Title _____		
or:		
Study Plan Number _____ Revision _____		
Title _____		
REQUIRED CHANGES:		
SECTION/PAGE NUMBER: _____ CHANGE TO: _____		
APPROVALS:		
Technical Project Officer _____	Date: _____	
Director, R&SED _____	Date: _____	
Project Quality Manager _____	Date: _____	
OCRWM: Chief, Siting and Geoscience* _____	Date: _____	
*if required		

Exhibit 2. Sample of Interim Change Notice.

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Title

AP-1.10Q PREPARATION, REVIEW, AND APPROVAL OF SCP STUDY PLANS

INTERIM CHANGE NOTICE CONTINUATION SHEET		T-AD-086		
SCP AND SCP STUDY PLANS		3/89		
ICN NUMBER:	EFFECTIVE DATE:	PAGE of		
APPLIES TO:				
REQUIRED CHANGES: <table style="width:100%; border: none;"> <tr> <td style="border: none;"><u>SECTION/PAGE NUMBER:</u></td> <td style="border: none; text-align: right;"><u>CHANGE TO:</u></td> </tr> </table>			<u>SECTION/PAGE NUMBER:</u>	<u>CHANGE TO:</u>
<u>SECTION/PAGE NUMBER:</u>	<u>CHANGE TO:</u>			

Exhibit 2. Sample of Interim Change Notice (continued).

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Title

AP-1.10Q PREPARATION, REVIEW, AND APPROVAL OF SCP STUDY PLANS

STUDY PLAN COMMENT RESOLUTION FORM		T-AD-069 12/89
Comment Number ____ of ____ Date _____	Type of Review: Screening _____ Technical _____	Quality Assurance _____
1. Reviewer _____	6. Section _____	
2. Organization _____	7. Page _____	
3. Study Plan No. _____	8. Paragraph _____	
4. Title _____	9. Category _____	
5. Revision No./Date _____	(mandatory/non-mandatory)	
10. Comment		
11. Proposed Resolution		
12. Actual Disposition		

Exhibit 3. Sample of Study Plan Comment Resolution Form.

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Title

AP-1.10Q PREPARATION, REVIEW, AND APPROVAL OF SCP STUDY PLANS

STUDY PLAN REVIEW CHECKLIST		T-AD-087 12/89
1. Title/Rev. No. _____		
Type of Review: Screening _____ Technical _____ Quality Assurance _____ Date _____		
2. Reviewer's Statement: I have reviewed the above referenced Study Plan in accordance with AP-1.10Q. My conclusions with respect to the review criteria of AP-1.10Q are:		
Review Criteria	Yes: Adequate	No: See Comment(s) No.
Screening:		
A. Consistency with DOE policies and programmatic interfaces.	_____	_____
B. Consistency with applicable NRC agreements/requirements.	_____	_____
Technical:		
A. The planned tests will provide the information required by the SCP.	_____	_____
B. The format and content of the Study Plan are consistent with the requirements of Section 5.1.1 of AP-1.10Q.	_____	_____
C. The technical descriptions in the Study Plan are correct and adequate.	_____	_____
Quality Assurance:		
A. The Study Plan is consistent with the QA requirements of the Project.	_____	_____
Comments 1 through _____ are attached.		
Reviewer _____		Date _____
3. Comment Resolution Record		
The revised Study Plan adequately addresses my mandatory comments.		Yes _____ No _____
The following mandatory comments have not been adequately addressed:		
Reviewer _____		Date _____
Mandatory comments not resolved between the reviewer and the author have been resolved by Yucca Mountain Project Management.		
Director, R&SED _____		Date _____
Director, QAD _____		Date _____

Exhibit 4. Study Plan Review Checklist.

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Title

AP-1.10Q PREPARATION, REVIEW, AND APPROVAL OF SCP STUDY PLANS

YUCCA MOUNTAIN PROJECT		T-AD-688 12/89	
<p>Study Plan Number _____</p> <p>Study Plan Title _____</p> <p>_____</p> <p>Revision Number _____</p> <p align="center">Prepared by:</p> <p align="center">Date:</p> <p align="center">_____ Director, Regulatory and Site Evaluation Division / Date</p> <p align="center">_____ Director, Quality Assurance Division / Date</p>			

Exhibit 5. Sample of Approval Form for Study Plan.

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