

TMSS/096/2  
09/28/90  
Revision No.: 0

TECHNICAL & MANAGEMENT SUPPORT SERVICES  
STANDARD PRACTICE PROCEDURE

WBS: 1.2.9

QA: QA

TITLE:

PEER REVIEW

PROCEDURE NO.:

SP 1.62

REVISION:

1

EFFECTIVE DATE:

5/31/91

PAGE 1 OF 6

PROJECT MANAGER, T&MSS

DATE:

*5/21/91*

QUALITY ASSURANCE MANAGER, T&MSS

DATE:

*Kent B Johnson for 5/21/91*

1.0 PURPOSE

This procedure describes the process and methodology for performing peer reviews of work by the Technical and Management Support Services (T&MSS) contractor in support of the Yucca Mountain Site Characterization Project (Project). Work may be a design, a plan, a test procedure, a research report, a materials choice, or a site exploration. This procedure can be used to meet the peer review requirements in the guidance of the U.S. Nuclear Regulatory Commission's Generic Technical Position, "Peer Review for High-Level Nuclear Waste Repositories," NUREG-1297, dated February 1988.

2.0 SCOPE

2.1 This procedure applies only when the adequacy of information (e.g., data, interpretations, test results, or design assumptions) or the suitability of methods essential to showing that the repository system meets or exceeds its performance requirements with respect to radiological safety and waste isolation cannot otherwise be established through testing, alternate calculations, or references to previously established standards and practices.

2.2 This procedure applies to work for which one of the following conditions is met:

2.2.1 Critical interpretations or decisions will be made in the face of significant uncertainty, including the planning for data collection, research, or exploratory testing.

2.2.2 Decisions or interpretations having significant impact on performance assessment conclusions will be made.

2.2.3 Novel or beyond the state-of-the-art testing, plans and procedures, or analyses are or will be utilized.

2.2.4 Detailed technical criteria or standard industry procedures do not exist or are being developed.

2.2.5 Results of tests are not reproducible or repeatable.

2.2.6 Data or interpretations are ambiguous.

2.2.7 Data adequacy is questionable.

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TECHNICAL & MANAGEMENT SUPPORT SERVICES WBS: 1.2.9  
STANDARD PRACTICE PROCEDURE QA: QA  
CONTINUATION PAGE

PROCEDURE NO.:  
SP 1.62

REVISION:  
1

EFFECTIVE DATE:  
5/31/91

PAGE 2 OF 6

- 2.3 This procedure applies when the adequacy of a critical body of information can be established by alternate means, but there is disagreement within the cognizant technical community regarding the applicability or appropriateness of the alternate means.
- 2.4 This procedure applies to T&MSS as a participant for both quality affecting and non-quality affecting activities.
- 2.5 This procedure does not apply to T&MSS as a whole.

### 3.0 REFERENCES AND DEFINITIONS

#### 3.1 REFERENCES

- 3.1.1 DOE/RW-0214, "Office of Civilian Radioactive Waste Management (OCRWM) Quality Assurance Requirements Document (QARD)."
- 3.1.2 SAIC-90/8002, "Technical and Management Support Services (T&MSS) Quality Assurance Program Description (QAPD)."
- 3.1.3 YMP/89-15, "Yucca Mountain Project Glossary."
- 3.1.4 SP 1.28, "Control of Purchased Items and Services."
- 3.1.5 SP 1.31, "Initial Evaluation, Qualification, Indoctrination and Training of T&MSS Personnel."
- 3.1.6 SP 1.36, "Records Management."
- 3.1.7 SP 2.3, "Review of T&MSS Technical Documents."
- 3.1.8 NUREG-1297, February 1988, "Peer Review for High-Level Nuclear Waste Repositories."

#### 3.2 DEFINITIONS

- 3.2.1 The definitions of Standard Terms may be found in the T&MSS QAPD and the Project Glossary, References 3.1.2 and 3.1.3 respectively, in Section 3.1 of this procedure.
- 3.2.2 Cognizant APM - The Assistant Project Manager who is responsible for the work being reviewed.

**TECHNICAL & MANAGEMENT SUPPORT SERVICES** WBS: 1.2.9  
**STANDARD PRACTICE PROCEDURE** QA: QA  
**CONTINUATION PAGE**

PROCEDURE NO.: SP 1.62	REVISION: 1	EFFECTIVE DATE: 5/31/91	PAGE 3 OF 6
---------------------------	----------------	----------------------------	-------------

4.0 BACKGROUND

Peer reviews may be employed as part of the Quality Assurance actions necessary to provide adequate confidence in the work under review where the work may be a design, a plan, a test procedure, a research report, a materials choice, or a site exploration. Because of the potential uncertainty in most geotechnical data and their analyses, the need to make projections over thousands of years, the lack of unanimity among experts, and first-of-a-kind nature of geologic repository technical issues, expert judgment will need to be utilized in assessing the adequacy of work. Peer reviews are a mechanism by which these judgments may be made.

5.0 PROCEDURE

RESPONSIBILITY

ACTION

5.1 Determine peer review requirement.

Any Staff Member

5.1.1 Prepare a memo to the cognizant APM specifying the work that is believed to need a peer review. Include supporting evidence and rationale. Include concurrence/denial signature blocks for the cognizant APM, the Manager, Site Characterization Technical Support, and the Project Manager.

Cognizant APM

5.1.2 Review the request for peer review. Approve or deny the request by signing in the appropriate location. Forward the memo to the Manager, Site Characterization Technical Support, and the Project Manager.

NOTE: Cognizant APM may delegate his/her duties as he/she sees fit.

Project Manager and  
Manager, Site  
Characterization  
Technical Support

5.1.3 Review the cognizant APM's response. Approve or deny the request by signing in the appropriate location. Return memo to cognizant APM.

TECHNICAL & MANAGEMENT SUPPORT SERVICES  
STANDARD PRACTICE PROCEDURE  
CONTINUATION PAGE

PROCEDURE NO.:  
SP 1.62

REVISION:  
1

EFFECTIVE DATE:  
5/31/91

PAGE 4 OF 6

RESPONSIBILITY

ACTION

Cognizant APM

5.1.4 If a peer review is not required, prepare a record package with all documentation concerning the request for peer review, submit in accordance with SP 1.36, and exit this procedure. If a peer review is required, continue this procedure.

5.2 Develop review team

Cognizant APM

5.2.1 Prepare a peer review plan which, at minimum, describes the work to be reviewed, the review scope and objectives, the size and composition of the peer review group, and the method and schedule for preparation of a peer review report. Identify potential reviewers, designate a chairperson and secretary and estimate costs for conducting the review. Submit the plan for review in accordance with SP 1.35.

NOTE: The peer reviewers should not be employees who have participated in any way with the development of the work being reviewed. If reviewers cannot be specifically identified at this point, continue with the SP 1.35 review and specify them later.

5.2.2 At the conclusion of the SP 1.35 review, transmit the peer review plan to the Project Manager and the Manager, Site Characterization Technical Support, for approval.

Project Manager and  
Manager, Site  
Characterization  
Technical Support

5.2.3 Review peer review plan. Approve the plan and expenditure of resources or return to APM for modification.

Cognizant APM

5.2.4 Make administrative and/or contractual arrangements for services of review team. Conform to the requirements of SP 1.28, as necessary.

**TECHNICAL & MANAGEMENT SUPPORT SERVICES**  
**STANDARD PRACTICE PROCEDURE**  
**CONTINUATION PAGE**

PROCEDURE NO.:  
SP 1.62

REVISION:  
1

EFFECTIVE DATE:  
5/31/91

PAGE 5 OF 6

RESPONSIBILITY

ACTION

- 5.2.5 Ensure that all reviewers have met the requirements of SP 1.31, as necessary.
- 5.3 Conduct review
  - Peer Review Group
    - 5.3.1 Meet and conduct review in accordance with scope outlined in peer review plan. Consider factors such as validity of assumptions, alternate interpretations, uncertainty of results and consequences if wrong, appropriateness and limitations of methodology and procedures, adequacy of application, accuracy of calculations, validity of conclusions, and adequacy of requirements and criteria. The secretary will prepare minutes of all meetings.
    - 5.3.2 Prepare a peer review report and submit to the cognizant APM.
  - 5.4 Resolution of peer review comments
    - Cognizant APM
      - 5.4.1 Review the peer review report, prepare responses to the opinions and recommendations, and propose resolutions to the comments. Submit to the chairperson of the peer review group.
    - Peer Review Group
      - 5.4.2 Review comment resolutions. If in agreement, prepare a memo to the cognizant APM, with copies to the Project Manager and the Manager, Site Characterization Technical Support, documenting closure of the comments. If not in agreement, provide in the memo the documented basis for the disagreement.
    - Cognizant APM
      - 5.4.3 Prepare and submit a record package containing all comment resolution documentation in accordance with SP 1.36.

TECHNICAL & MANAGEMENT SUPPORT SERVICES  
STANDARD PRACTICE PROCEDURE  
CONTINUATION PAGE

PROCEDURE NO.:  
SP 1.62

REVISION:  
1

EFFECTIVE DATE:  
5/31/91

PAGE 6 OF 6

6.0 EXHIBITS AND FORMS REFERENCED IN THIS PROCEDURE

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7.0 RECORDS

Cognizant APM

7.1 Submit a record package containing the following to the Local Records Center in accordance with SP 1.36: all correspondence regarding the peer review; minutes of all peer review group meetings; the peer review plan; the peer review report; and comment resolution documentation.