



**CHANGE NOTICE**

CN No.: 2.4-0-2

Affected Document: 033-YMP-OP 2.4, "Technical Review", Rev.0

Prepared by: Raymond E. Hamati

Approved by: N/A  
(Technical Area Leader) (Date)

Approved by: RK Damm 2-14-91  
(YMP QA Manager) (Date)

Training Required:  
Yes  No

Approved by: J. J. Jacobine 2/20/91  
(YMP Project Leader) (Date)

Currently Read as Follows:

- 1. Section 2.4.1, First sentence: As published

**CHANGED TO READ:**

- 1. Section 2.4.1, First sentence: Replace "Quality Level I and II" by "quality affecting"

**NOTE: THIS CHANGE NOTICE IS TO BE FILED AT THE FRONT OF THE AFFECTED DOCUMENT**



## CHANGE NOTICE

CN No. 2.4-0-1Affected Document: QP 2.4, "Technical Review"Revision: 0Prepared By Ronald SchwartzApproved By N/A

Technical Area Leader

Date

Approved By

R. W. E. Schultz  
YMP QA Manager3/15/89

Date

Approved By

J. P. Mellan  
YMP Project Leader3/15/89

Date

Currently Reads as Follows:

1. Section 2.4.5, first paragraph, second bullet:
  - o Review comment records.

Changed to Read:

1. Section 2.4.5, first paragraph, second bullet:
  - o Review comment records and comment resolution.

**NOTE:** THIS CHANGE NOTICE IS TO BE FILED AT THE FRONT OF THE AFFECTED DOCUMENT

NUCLEAR WASTE MANAGEMENT PROGRAM

CONTROLLED COPY NO. 0100

No.: 033-YMP-QP 2.4

Revision: 0

Date: FEB 24 1989

Page: 1 of 5

Subject: TECHNICAL REVIEW

Approved:

Approved by:

*J.S. Sallan* 2/23/89  
Yucca Mountain Project Leader

Approved by:

*R.H.E. [Signature]* 2/23/89  
YMP Quality Assurance  
Manager

#### 2.4.1 PURPOSE

This procedure describes the requirements for the technical review of Quality Level I and II activities performed under the direction of the Yucca Mountain Project (YMP). This procedure also prescribes documentation requirements associated with the review process. The intent of this procedure is to satisfy the requirements related to verification of scientific investigations/designs as specified in the YMP QAPP.

#### 2.4.2 SCOPE

This procedure provides for the review and verification of the adequacy of specific designs/scientific investigation such that study documents (scientific notebooks, drawings, calculations, specifications, analysis, reports, etc.) are correct, satisfactory, and in compliance with requirements. The extent of the review is a function of the importance to safety or waste isolation of the system under consideration. The complexity of the investigation, the state of the art, and the similarity of the system to previous reviewed systems are also considered.

This procedure also applies to those scientific investigations that do not produce sufficient documentation to allow technical review by qualified individuals with out recourse to the originator. In these cases the review is based upon an oral presentation to a review board.

Technical reviews are scheduled as specified by the Task Leader. The review addresses objective evidence such that a technically qualified person may review, understand, and verify the work.

This procedure does not apply to those design/investigation activities that involve the use of data collection or analysis procedures and design methods that are untried, beyond the state of the art, or where detailed technical criteria and requirements do not exist or are being developed. For these cases a review conducted in accordance with the provisions of Procedure No. 033-YMP-QP 2.2, "Peer Review" applies.

No.	Revision:	Date:	Page
033-YMP-QP 2.4	0	FEB 24 1989	2 of 5

### 2.4.3 RESPONSIBILITIES

It is the responsibility of YMP staff who have managerial duties at the technical area, project, and program levels to implement this procedure as appropriate to fulfill the objectives of the technical review process.

The Task Leader is responsible for initiating the technical review process, coordinating technical review meetings, documenting the review results, and maintaining documentation for QA record purposes.

The QA Manager is responsible for monitoring compliance with this procedure and for assuring adherence to quality procedure requirements.

### 2.4.4 PROCEDURE

The following represent minimum items for technical review:

#### 2.4.4.1 Schedule

Technical reviews are provided for in the work planning document of the technical area under investigation. The specific schedule for the technical review is established by the Task Leader with the concurrence of the Technical Area Leader.

#### 2.4.4.2 Review Board

The Task Leader with the concurrence of the Technical Area Leader determines the membership of the technical review board. The review is performed by qualified individuals other than those who performed the work. In exceptional cases, the originator's immediate supervisor can participate in the review if there is a limited number of technically qualified individuals, and if the need is individually documented and approved in advance with the concurrence of the QA Manager.

The review board should consist of the minimum number of members to provide representation of appropriate disciplines.

#### 2.4.4.3 Review Check List

The Task Leader or designee prepares a check list for the review board to consider during their technical review. As a minimum the check list addresses:

- a) Applicable Input - whether the selection of site characterization data, criteria letters, design basis, performance and regulatory requirements, codes, standards, manufacturer's design data, and quality standards have been properly identified, approved, documented, and correctly applied to the design/scientific investigation.
- b) Input Changes - whether approved changes to the input have been identified, documented, and correctly applied to the design/scientific investigation.

No. 033-YMP-QP 2.4	Revision: 0	Date: FEB 24 1989	Page 3 of 5
-----------------------	----------------	----------------------	----------------

c) Investigation/Design - whether the investigation/design has been performed and documented in sufficient detail regarding purpose, method, assumptions, design/study input, references, and units to be understandable.

#### 2.4.4.4 Review Material Distribution

The Task Leader obtains the necessary technical material and backup documentation for distribution to the review board. Documentation of investigation/design include the following: (1) objective(s), (2) method(s) used in the analysis, (3) design inputs and their sources, (4) applicable references, (5) results of literature searches, (6) assumptions [and their verifications if completed], (7) identification of computer calculations [including computer type, program name, revision, input, output, evidence of program verification] and the basis of application to the specific analysis.

Sufficient time is allowed for the review board to become familiar with the design or investigation. The material distributed should include appropriate forms to identify the activity being reviewed along with adequate space to record comments and suggested disposition of the comments. A deadline for comment submittal and the date and location of the comment resolution meeting is stated in the distribution material.

For those reviews that encompass activities that produce little or no documentation, especially in the early stages of the activity, technical documentation may consist of presentation handouts or "viewgraphs" of material used in an oral presentation.

#### 2.4.4.5 Technical Review

The technical review is a detailed critical review process intended to provide assurance that the design/investigation is correct and satisfactory. As a minimum, the following are considered by the technical review board during the review and the results of the deliberations documented:

- a) Whether the design/investigation inputs are correctly selected.
- b) Whether the assumptions necessary to perform the activity are adequately described and are reasonable. Where necessary, the assumptions are identified for subsequent reverifications when the detailed design/investigation activities are completed.
- c) Whether an appropriate method(s) has been used.
- d) Whether or not the design/investigation inputs are correctly incorporated into the activity.
- e) Whether the design outputs are reasonable when compared to the inputs.
- f) Whether the necessary design input and verification requirements for interfacing organizations have been specified in the study/design documents or in supporting procedures or instructions.

No.: 033-YMP-QP 2.4	Revision: 0	Date: FEB 24 1989	Page: 4 of 5
------------------------	----------------	----------------------	-----------------

- g) Whether the computer programs used for analysis are identified and verified in accordance with Procedure No. 033-YMP-QP 3.2, "Software Quality Assurance".

#### 2.4.4.6 Comment Resolution Meeting

The intent of the technical review board comment resolution meeting is to develop a consensus among the review board regarding the disposition of comments and to provide a program record of whether the design or investigation is in compliance with program requirements.

The Task Leader receives the review comments for consolidation. "No comment," is an acceptable response, but an explanation for this response must be included. The consolidated comments are distributed at the comment resolution meeting. The comment resolution meeting is chaired by the Technical Area Leader.

The Principal Investigator (or scientific staff responsible for the work) attends the comment resolution meeting and is provided an advance copy of the consolidated comments to allow preparation of appropriate responses.

With prior concurrence of the Technical Area Leader, the comment resolution meeting may be combined with an oral technical presentation, however, documentation reflecting the applicable review aspects of Section 2.4.4.5 must be prepared.

#### 2.4.4.7 Unresolved Comments

Comments that cannot be resolved during the review meeting are elevated to the next management level (Project Leader) for disposition.

#### 2.4.4.8 Technical Review Approval

Each review board member signs one technical review approval sheet attesting that the applicable aspects of Section 2.4.4.5 have been considered. The intent is to produce a single document. Interim approval (or approval with qualification) may be given subject to technical revision.

The Technical Area Leader signs the review approval sheet signifying concurrence with the conclusions of the technical review board. The conclusions of the review board may be (1) the design/investigation is acceptable, and no changes are required, (2) the work to date is acceptable with the incorporation of recommended changes, or (3) the work to date is unacceptable and a revision to the work planning document must be made.

No.:	Revision:	Date:	Page
033-YMP-QP 2.4	0	FEB 24 1989	5 of 5

#### 2.4.5 RETAINED DOCUMENTATION

Quality assurance records that result from this procedure are collected, stored, and maintained in accordance with Procedure No. 033-YMP-QP 17.0, "Quality Assurance Records." QA records include the following:

- o Technical review approval sheet(s).
- o Review comment records.
- o Recommendations for future action.

Other documents that result from this procedure are retained until the final review or report publication of the design or scientific investigation. At that point quality assurance records are produced and retained under Procedure No. 033-YMP-QP 3.3, "Review of Technical Publications". Documents retained until report publication include the following:

- o Original drafts of the review documents. In some cases this may not be possible (e.g., scientific notebooks, etc.). The document retention requirement then can be met by a statement regarding the location of the original document.