



### CHANGE NOTICE

CN No.: 3.2-0-3

Effective Date: 10/8/91

Affected Document: 033-YMP-QP 3.2 "Software Quality Assurance"

J. Blink  
Prepared by:

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

[Signature] 10/1/91  
Approved by: (YMP QA Manager) Date

[Signature] 10/1/91  
Approved by: (YMP Leader) Date

Training Required: Yes  No

Major Changes

Minor Changes

Reason for Change:

Clarification, to permit use of the procedure for activities not designated "quality affecting".

- 1. Section 3.2.2, Add a new last sentence :

"This procedure is optional for activities not considered to be quality affecting."

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



**CHANGE NOTICE**

CN No.: 3.2-0-2

Affected Document: 033-YMP-OP 3.2, "Software Quality Assurance," Rev.0

Prepared by: Raymond E. Hamati

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

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

Training Required:  
Yes  No

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

Currently Read as Follows:

1. Section 3.2.2, First sentence: As published
2. Section 3.2.4, First paragraph, First sentence: As published

**CHANGED TO READ:**

1. Section 3.2.2, First sentence: Replace "Quality Level I or II" with "quality affecting".
2. Section 3.2.4, First paragraph, First sentence: Replace "Quality Level I or II" with "quality affecting".

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



## CHANGE NOTICE

CN No. 3.2-0-1Affected Document: QP 3.2, "Software Quality Assurance"Revision: 0Prepared By Ronald SchwartzApproved By N/A  
Technical Area Leader DateApproved By *R. G. E. King* 3/15/89  
YMP QA Manager DateApproved By *J. Mellan* 3/15/89  
YMP Project Leader DateCurrently Reads as Follows:

1. Section 3.2.3.1, third bullet:
  - o Assuring that the Software QA Plans or Technical Implementing Procedures contain the procedures and methods which describe how the requirements of Appendix H of the LLNL QAPP are implemented.
2. Section 3.2.7, add new first paragraph  
(see below)

Changed to Read:

1. Section 3.2.3.1, third bullet:
  - o Assuring that the Software QA Plans or Technical Implementing Procedures contain the procedures and methods which describe how the requirements of Appendix H of the LLNL QAPP and 033-YMP-R 3 Section 3.0 are implemented.
2. Section 3.2.7, add new first paragraph

Quality Assurance records created by the implementation of this procedure are collected, handled, stored, and maintained in accordance with the requirements of 033-YMP-QP 17.0, "Quality Assurance Records."

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

NUCLEAR WASTE MANAGEMENT PROGRAM

CONTROLLED COPY NO. 0100

Subject:

SOFTWARE QUALITY ASSURANCE

Approved:

Approved by: *S. S. Sellen* <sup>2/23/89</sup> YMP Project Leader  
Approved by: *R. E. Schuy* <sup>2/23/89</sup> YMP Quality Assurance Manager

### 3.2.1 PURPOSE

The purpose of this procedure is to describe the control of software for the LLNL Yucca Mountain Project.

### 3.2.2 SCOPE

This procedure applies to all computer software used to produce or manipulate data in support of Quality Level I or II activities and to the planning documents which describe control of that software, such as Software QA Plans and Technical Implementing Procedures which supplement those plans. Software QA Plans may be prepared for individual activities or a single, generic Software QA Plan may be prepared for LLNL-YMP work.

### 3.2.3 RESPONSIBILITIES

#### 3.2.3.1

The responsible Technical Area Leader is responsible for:

- o Preparation and revision of the Software QA Plan, if a separate plan is used.
- o Preparation and revision of Technical Implementing Procedures which supplement the Software QA Plan, if required.
- o Assuring that the Software QA Plans or Technical Implementing Procedures contain the procedures and methods which describe how the requirements of Appendix H of the LLNL QAPP are implemented.

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- o Assuring that the software planning documents are consistent with other Project Quality Procedures such as those related to:
  - 1) Documentation of work progress.
  - 2) Document identification and control.
  - 3) Revision of controlled documents.
  - 4) Peer and technical reviews.
  - 5) Control of purchased items and services.
  - 6) Corrective Action.
  - 7) Records Management.
- o Assuring that work is performed according to and within the scope of the software planning documents.

#### 3.2.3.2

The Task Leaders are responsible for:

- o Assuring that work is performed according to and within the scope of the software planning documents. This is accomplished by periodically reviewing and approving the documentation required by the software planning documents during the progress of work.
- o Assuring that information contained in the documentation specified in the software planning documents represents a traceable path throughout the course of the work.

#### 3.2.3.3

The YMP Quality Assurance Manager is responsible for:

- o Assuring that the applicable Project Quality Procedures are addressed in the software planning documents.
- o Approval of software planning documents.
- o Performing audits and surveillances to verify compliance with QA requirements.

#### 3.2.3.4

The YMP Project Leader is responsible for:

- o Approval of software planning documents.

### 3.2.4 PREPARATION OF SOFTWARE QA PLANS

Before development, acquisition or application of software for Quality Level I or II activities, Software QA Plans are prepared which address how software will be controlled during YMP project activities. The Software QA Plans may cover a generic class of software or specific software products.

Software QA Plans are revision controlled planning documents that address the requirements specified in Appendix H of the LLNL QAPP and include:

- o Organizational responsibilities
- o Software products to which the software QA plans apply
- o Criteria for meeting requirements of Appendix H
- o Software lifecycle model used and lifecycle controls
- o Documentation required
- o Reviews required
- o Configuration management system
- o Verification and validation
- o Discrepancy reporting and corrective actions
- o Software change control
- o Control of software applications
- o Control of commercial and acquired software

The planning documents contain the procedures or methods that describe how the requirements of Appendix H are implemented.

### 3.2.5 REVIEW, APPROVAL AND REVISION OF SOFTWARE PLANNING DOCUMENTS

Software QA Plans are reviewed, approved and revised in accordance with paragraphs 2.1.4.3 through 2.1.7 of Quality Procedure 033-YMP-QP 2.1, "Preparation, Approval and Revision of Quality Procedures and Requirements". In addition to approvals by the responsible Technical Area Leader, QA Manager, Project Leader and DOE Project Office, additional Technical Area Leaders may be added to the approval list if activities interface with other technical areas.

Technical Implementing Procedures may be prepared to supplement the Software QA Plans and are reviewed and approved as described above but do not require DOE Project Office approval.

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### 3.2.6 DOCUMENTATION

If the progress of work is recorded in a scientific notebook, the documentation procedure described in the planning documents must be consistent with the applicable requirements of Quality Procedure 033-YMP-QP 3.4, "Scientific Notebooks".

### 3.2.7 RETAINED DOCUMENTATION

QA records and any other retained documentation is defined in the Software QA Plans.