

NEVADA NUCLEAR WASTE STORAGE

INVESTIGATIONS

QUALITY ASSURANCE PLAN

NNWSI/88-9

REVISION 3

SIGNATURE PAGE



YMP PROJECT QUALITY MANAGER

1/4/90

DATE



PROJECT MANAGER, YMP

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NEVADA NUCLEAR WASTE STORAGE INVESTIGATIONS PROJECT

QUALITY ASSURANCE PLAN

REVISION 3

UNITED STATES DEPARTMENT OF ENERGY
NEVADA OPERATIONS OFFICE
LAS VEGAS, NEVADA

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PREFACE

This document is the ninth revision of the Nevada Nuclear Waste Storage Investigations (NNWSI) Project Quality Assurance (QA) Plan. This document has been revised to accommodate the transition between the existing procedural system and a revised Project Office procedural system. This change is needed to support implementation of the enhanced Program Management system which is an effort to upgrade the existing Project Office plans and procedures. The purpose of this revision is to allow the use of procedures for the development of the program associated with the revised Project Office procedural system. Anywhere that specific Project Office procedural terms are used (i.e., Administrative Procedures, Administrative Procedures Manual or Quality Management Procedures, etc.) these terms are replaced with the words, "Project Office approved procedures".

This NNWSI Project QA Plan is a requirements document which was developed from QA requirements imposed on the NNWSI Project by the Office of Civilian Radioactive Waste Management (OCRWM), the U.S. Department of Energy (DOE), and the U.S. Nuclear Regulatory Commission (NRC). Accordingly, this document establishes the QA requirements that are applicable to the NNWSI Project participants.

Note that the term Nevada Nuclear Waste Storage Investigations (NNWSI) Project is superseded by Yucca Mountain Project and the term Waste Management Project Office (WMPO) is superseded by Yucca Mountain Project Office (Project Office). These changes will be reflected in a future revision to this document.

The eighth revision reflected changes made to the Introduction, Sections II, III, V, VI, XII, XV, XVIII, Appendix A, Appendix E, Appendix I, and Appendix J. In addition, Appendix K was added. The changes made to this document are noted with line-by-line revision indicators throughout. In addition, the changes are summarized as follows:

- o The signature page and title page were revised to correspond to the revision level of the document.
- o The Preface was revised to indicate the basis for the changes to NNWSI/88-9, Rev. 1 and to provide a revised summary of the changes.
- o The Table of Contents was updated to revise page numbers as necessary.
- o The List of Effective Revisions was updated to reflect the current revision level of each section of the NNWSI QA Plan and to correct editorial errors.
- o The Introduction, para. 2.2.2 was revised to remove the requirement for OCRWM review and approval of Project quality-related administrative procedures. This is consistent with the OCRWM QA Requirements document. In addition, editorial corrections were made to para. 2.8.1.

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- o Section II, para. 1.0, first subparagraph, was revised to remove requirements relative to Project Office submittal of quality-related administrative procedures to OCRWM for review and approval (see above bullet). In addition, the scope of the Quality Assurance Program was clarified.
- o Section II, para. 1.0, third subparagraph was revised to insert "higher-tier" before "documents" in the third line for clarification and to exclude the CFRs.
- o Section II, para. 1.2 was revised to remove the requirement for WMPO review and approval of NNWSI Project Participant non-technical implementing procedures based on OCRWM direction.
- o Section II, para. 1.2, second paragraph was revised to be consistent with the OCRWM QAR.
- o Section II, para. 1.5.1 was deleted to eliminate redundancy. (i.e. Appendix A contains a definition of "Q-List"). In addition the heading for para. 1.5.2 was deleted and para. 1.5.2 was revised for consistency with Appendix I. The heading for para. 1.5 was revised to be consistent with the remaining text.
- o Section II, paras. 2.1.1/2.1.4/2.2.4. Changes were made to these paragraphs to clarify that QA requirements can be selectively applied to Level I items and activities commensurate with its importance to safety and/or waste isolation.
- o Section III, para. 1.1.1.1 was revised to require that scientific investigation planning documents describe the proposed methodology for performing the work and that these planning documents provide identification, explanation, and justification for areas where scientific notebooks will be used.
- o Section III, para. 1.1.2 was revised to clarify control of site characterization activities and to provide reference to Appendix K for study plan requirements.
- o Section III, para. 1.3.1 was revised to remove the statement regarding cursory supervisory reviews since the definition of technical reviews in Appendix A adequately precludes a cursory review.
- o Section III, para. 1.6.1 was revised to clarify the controls for scientific investigations when scientific notebooks are used to document the work. In addition, provisions were made for modifications to technical implementing procedures and the first sentence was revised for editorial clarity.

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- o Section III, para. 1.6.2 was revised to add requirements for the modification of technical implementing procedures. In addition, the parenthetical notation "as required" was removed from the fourth bullet since it was redundant with the lead in sentence which contains the words "as appropriate" and applies to all the bullet items.
- o Section III, para. 1.6.2, seventh bullet was changed to "methods of data reduction" since data analysis is adequately covered by paragraph 1.4 of Section III.
- o Section III, para. 1.6.4.1 was revised to provide additional requirements for the initial entries to scientific notebooks and to clarify that these initial entries are considered to be the "general procedure" for performing the work. Additionally, provisions were established for modifications to these initial entries.
- o Section III, para. 1.6.4.2. The last bullet was revised to clarify documentation of the final results of scientific investigations and renumbered as para. 1.6.4.4.
- o Section III, para. 2.4.6.1, last bullet was revised to remove reference to the NNWSI Project Administrative Procedure Manual.
- o Section III. A new paragraph 3.1.6 was inserted to provide for the use of computer software which has not been verified or validated. Subsequent paragraphs were renumbered accordingly. Paragraph 3.1.9 (old paragraph 3.1.8) was modified to remove reference to the NNWSI Project Administrative Procedures Manual.
- o Section III, para. 3.2, last sentence was revised for editorial clarity.
- o Section V, para. 1.0 and 3.0, were revised to clarify that requirements for work performed using the scientific notebook method are contained in Section III, para. 1.6. In addition, para. 3.0 of this section was modified to reflect that scientific notebooks are subject to QA records requirements.
- o Section V, para 2.0 was revised to clarify review criteria for instructions, procedures, plans and drawings.
- o Section VI, para. 2.1 was revised to clarify review criteria for changes to documents.
- o Section XII, para. 2.1 was revised to clarify the control of M&TE when used to determine specified tolerance requirements.

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- o Section XV, para. 1.4.4. The last two bullets were deleted since para. 3.0 establishes requirements for periodic trending of nonconformances for root cause determination.
- o Section XVIII, para. 1.2.2. The last portion of the paragraph was renumbered as para. 1.2.3 and titled "Joint Audits". In addition, requirements for external audits were strengthened.
- o Section XVIII, para 2.3. The fifth bullet was modified to clarify nonconformance control requirements for surveillances.
- o Appendix A. The term "Computer Code Validation" was changed to "Computer Model Validation" to correspond more accurately with the definition.
- o Appendix A. The terms "Authentication" and "Validation" are new and were added to enhance understanding of QA Records
- o Appendix A. The term "Q-List" was modified and the term Quality Activities List was added for consistency with Appendix I.
- o Appendix A. The definition of "Corroborative Data" was revised for consistency with Appendix G and NUREG-1298.
- o Appendix H, paragraph 1.0 was revised to clarify software QA requirements. Requirements for verification and/or validation of computer software were revised and relocated to paragraph 5.0. Paragraph 2.0 was revised to clarify applicability. Paragraphs 4.0, 4.1 and 4.1.2 were revised to clarify that flexibility exists for the selective application of software QA requirements. Editorial clarifications were made to Section 5.1, 5.2 and model validation approaches were enhanced. In Sections 6.1, 6.2 and 6.3, configuration management controls were revised and clarified. Section 7.0 was revised to accommodate participant software QA development documentation plans and Section 7.3 and 7.4 were clarified. Section 8.0, 8.1, 8.3 and 8.4 were also edited to improve review activities. In addition, editorial enhancements were made to paragraphs 11.0 and 12.0.
- o Appendix I was revised for consistency with NUREG-1318 requirements.
- o Appendix J, paragraphs 4.1 and 6.1 were revised for consistency with NUREG-1297.
- o Appendix K is a new appendix which was added to establish requirements for the format and content of study plans. These requirements were extracted from the SCP management plan.

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N-QA-040
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LIST OF EFFECTIVE REVISIONS

<u>Title</u>	<u>Revision No.</u>	<u>Effective Date</u>
Signature Page	3	1/12/90
Title Page	3	1/12/90
Preface	3	1/12/90
Table of Contents	2	12/9/88
List of Effective Revisions	3	1/12/90
Policy Statement	0	5/19/88
Introduction	2	12/9/88
Section I - Organization	0	5/19/88
Section II - Quality Assurance Program	2	12/9/88
Section III - Scientific Investigation and Design Control	2	12/9/88
Section IV - Procurement Document Control	0	5/19/88
Section V - Instructions, Procedures, Plans, and Drawings	2	12/9/88
Section VI - Document Control	2	12/9/88
Section VII - Control of Purchased Items and Services	0	5/19/88
Section VIII - Identification and Control of Items	0	5/19/88
Section IX - Control of Processes	0	5/19/88
Section X - Inspection	0	5/19/88
Section XI - Test Control	1	8/26/88
Section XII - Control of Measuring and Test Equipment	2	12/9/88
Section XIII - Handling, Shipping and Storage	0	5/19/88
Section XIV - Inspection, Test, and Operating Status	0	5/19/88

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Section XV - Control of Nonconforming Items	1	12/9/88
Section XVI - Corrective Action	0	5/19/88
Section XVII - Quality Assurance Records	0	5/19/88
Section XVIII - Audits	2	12/9/88
Appendix A - Terms and Definitions	2	12/9/88
Appendix B - Design Inputs	0	5/19/88
Appendix C - Requirements for Inspection and Test Personnel	0	5/19/88
Appendix D - Requirements for NDE Personnel	0	5/19/88
Appendix E - List of Typical QA Records	0	5/19/88
Appendix F - Requirements for Audit Personnel	0	5/19/88
Appendix G - Requirements for Qualification of Existing Data not Generated Under the Control of the NNWSI Project QA Plan	1	8/26/88
Appendix H - Requirements for Computer Software	1	12/9/88
Appendix I - Requirements for Q-List	1	12/9/88
Appendix J - Requirements for Peer Review	1	12/9/88
Appendix K - Format and Content Requirements for SCP Study Plans	0	12/9/88

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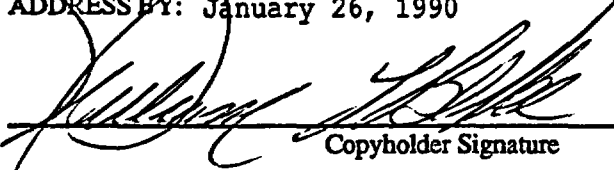
REPLACE THE FOLLOWING PAGES OF REVISION 2 WITH REVISION 3
DATED 1/12/90:

Page i - Signature Page; Page ii - Title Page; Pages iii, iv, v, and vi - Preface Pages; and Pages xv and xvi - List of Effective Revisions.

NOTE: This document is being issued for the interim use pending OCRWM approval. A new signature page will be issued after receiving OCRWM approval signature. This revision constitutes minor changes needed to accommodate implementation of a revised Project Office Procedure system. As such, the only organization affected by this revision is the Project Office. Accordingly, the Project Office has revised the Project Office QA Program Plan (QAPP) to reflect this change. No revisions to Project participant QAPPs are required.

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