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**U.S. DEPARTMENT OF ENERGY
OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT
OFFICE OF QUALITY ASSURANCE**

SURVEILLANCE REPORT

OF THE

**JOINT HEADQUARTERS QUALITY ASSURANCE DIVISION (HQAD) AND
YUCCA MOUNTAIN QUALITY ASSURANCE DIVISION (YMQAD) SURVEILLANCE**

OF

M & O CONTRACTOR (TRW)

**Vienna, VA
Las Vegas, NV**

SURVEILLANCE NUMBER HQ-SR-93-07

September 8-17, 1993

PRIMARY ACTIVITY EVALUATED

**Preparation, review, issue and flowdown of requirements for the Dispose of Waste System
Requirements Documents, Design Requirements Documents and Design Documents**

Prepared by: *Marlin Horseman* Date: *10/20/93*
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Approved by: *R. W. Clap* Date: *10/28/93*
for **Donald G. Horton
Director
Office of Quality Assurance**

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1.0 EXECUTIVE SUMMARY

Surveillance HQ-SR-93-07 was conducted to evaluate the development, preparation, review, issue, and flowdown of requirements for the Dispose of Waste System Requirements Documents, Design Requirements Documents, and Design Documents. The surveillance was conducted at the M&O offices in Vienna, VA on September 8-10 and in Las Vegas, NV on September 13-17, 1993. This was a joint surveillance conducted by personnel from HQAD and YMQAD of the Office of Quality Assurance (OQA).

It was determined by the surveillance team that implementation of the QA program for the preparation, review, and issue of the documents evaluated is satisfactory.

The surveillance team identified three (3) deficiencies during the surveillance that resulted in the issuance of three (3) Corrective Action Requests (CARs). CAR HQ-93-031 addressed cases where there was inadequate transition of requirements from the CRD to the MGDS-RD and from the WMSR Volume IV to the MGDS-RD. CAR YM-94-002 addressed the inadequate documentation supporting derived requirements in the SD&TRD, ESFDR, and the SBTFRD. CAR YM-94-003 addressed the lack of configuration controls for source input evaluation information and inconsistencies in the documentation of unqualified data. Six (6) deficiencies were identified that were corrected prior to the conclusion of the surveillance as described in Section 5.4.2 of this report. Twenty recommendations were made by the surveillance team for M&O management consideration. These recommendations are detailed in Section 6.0 of this report.

2.0 SCOPE

Surveillance HQ-SR-93-07 was conducted to evaluate the effectiveness of the QA program for the preparation and issue of technical requirements documents and design documents. Specifically, the surveillance addressed the development, preparation, review and issue of the Mined Geologic Disposal System Requirements Document (MGDS-RD), the Site Design and Test Requirements Document (SD&TRD), the Exploratory Studies Facility Design Requirements (ESFDR), the Surface Based Testing Facilities Requirements Document (SBTFRD), and associated design documents. Emphasis was placed on the flowdown of requirements from the Civilian Waste Management System Requirements Document (CRD). Only a limited review of design documents below the level of the ESFDR and SBTFRD was performed due to in-process or planned revisions.

The scope of the surveillance included verification of corrective actions for Corrective Action Requests (CARs) HQ-92-012 and HQ-93-019. Corrective actions for CAR HQ-93-019 were determined to be incomplete and a request for extension of the corrective action due date was submitted. Therefore, CAR HQ-93-019 was excluded from the surveillance and will be verified separately when all corrective actions are complete.

The surveillance team used checklists based on the requirements of the following OCRWM Reference Documents:

1. QAAP 2.1 *Indoctrination and Training, Revision 2*
2. QAAP 2.2 *Verification of Personnel Qualifications, Revision 1*
3. QAP 3.5 *Technical Document Preparation, Revision 2*
4. QAP 6.2 *Document Review, Revision 1*
5. QAAP 17.1 *QA Records Management, Revision 2*
6. QMP-02-01 *Project Office Indoctrination and Qualification Training, Rev. 6*
7. AP-1.10Q *Preparation, Review, Approval, and Revision of Site Characterization Plan Study Plans, Revision 6*
8. AP-1.18Q *Records Management: Las Vegas Record Source Responsibilities, Revision 1*
9. AP-3.3Q *Change Control Process, Revision 5*
10. AP-5.21Q *Field Work Activation, Revision 3*
11. AP-5.32Q *Test Planning and Implementation Requirements, Revision 3*
12. *Technical Document Preparation Plan (TDPP) for the Preparation of System Requirements Documents, Revision 0*
13. *Technical Document Preparation Plan (TDPP) for the Preparation of MGDS Design Requirements Documents, Revision 2*

3.0 SURVEILLANCE TEAM AND OBSERVERS

The following is a list of surveillance team members and their assigned areas of responsibility (VA=Vienna, LV=Las Vegas), and the participating observers:

<u>Name/Organization</u>	<u>Function</u>	<u>Assignment (Ref. Documents)</u>
Marlin Horseman, QATSS	Surveillance Team Leader	All
Robert Clark, DOE/RW-3.1	Surveillance Team Member	LV-13
James George, QATSS	Surveillance Team Member	VA-12, LV-6,7,8,9,10,11
Gerard Heaney, QATSS	Surveillance Team Member	LV-3
Robert Howard, QATSS	Surveillance Team Member	VA, LV-Technical Flowdown
Dennis Threatt, QATSS	Surveillance Team Member	VA-1,2,3,4,5, LV-4,6,8
Terry Grant, SAIC	Technical Specialist	VA, LV-Technical Flowdown
Arul Mozhi, Weston	Technical Specialist	LV-Technical Crosswalk
Trieu Truong, DOE/RW321	Technical Specialist	VA-Technical Crosswalk
William Belke, NRC	Observer	
William Boyle, NRC	Observer	
Jack Spraul, NRC	Observer	
Rod Weber, NRC	Observer	

4.0 PERSONNEL CONTACTED

See Attachment 1 for the list of personnel contacted during the course of the surveillance.

5.0 SUMMARY OF SURVEILLANCE RESULTS

5.1 Program Effectiveness

The surveillance team evaluated the adequacy of the process by which technical documents are prepared and issued including the development, preparation, review, and issue of the MGDS-RD, SD&TRD, ESFDR, SBTFRD, and associated design documents. In addition, the surveillance team evaluated the technical adequacy of the documents to fulfill their intended purpose. Overall, the surveillance team found the process for the preparation and issue of the technical documents to be effective. Evaluation of the technical content of the documents determined (based on a relatively small sample) that the documents were adequate for their intended use.

5.2 QA Program Surveillance Activities

The QA program surveillance activities focused on evaluating the effectiveness of implementation of QAP 3.5 and QAP 6.2 for the preparation and review of requirements documents; QAAP 2.1, QAAP 2.2, and QMP-02-01 for the training and qualification of document preparers and reviewers; and QAAP 17.1 and AP-1.18Q for the collection and maintenance of QA Records. The activities included verifying implementation of corrective action for CAR HQ-92-012. Details of the QA program surveillance activities are provided in Attachment 2. A list of objective evidence reviewed during the surveillance is provided in Attachment 3.

5.3 Technical Surveillance Activities

The technical surveillance activities addressed the adequacy of the requirements documents in interpreting regulatory and design requirements. In addition, the surveillance included evaluation of the requirements documents to ensure adequate flowdown of requirements and to ensure the documents provided sufficient accuracy and detail to support design development. Details of the technical surveillance activities are provided in Attachment 2.

5.4 Summary of Deficiencies

The surveillance team identified nine (9) deficiencies during the surveillance of which six (6) were corrected prior to the conclusion of the surveillance.

5.4.1 Corrective Action Requests (CARs)

As a result of the surveillance, the following CARs were issued (Draft copies of the CARs are provided in Attachment 4):

CAR HQ-93-031

Based on a review of requirements from the CRD, Table 6.3, it was determined that some requirements were not adequately addressed in the MGDS-RD. Also, based on a review of requirements in WMSR Volume IV, it was determined that a corresponding MGDS-RD requirement did not reference the correct source.

CAR YM-94-002

Based on a review of requirements in the SD&TRD, ESFDR, and the SBTFRD, it was determined that there was no documentation supporting derived requirements in the technical documents as required by QAP 3.5 and the TDPP for the preparation of DRDs.

CAR YM-94-003

No objective evidence was identified to indicate that configuration controls were being applied to source input evaluation information. Also, the DRDs are inconsistent in addressing unqualified data. The ESFDR and SBTFRD do not define the use of "TBV" for unqualified data.

5.4.2 Deficiencies Corrected During the Surveillance

Deficiencies which are considered isolated in nature and only requiring remedial action can be corrected during the surveillance. The following deficiencies were corrected prior to the conclusion of the surveillance:

- a) Contrary to the requirements of Baseline Change Proposal 00-93-0002, the WMSR to CRD crosswalk had not been completed. The required matrix providing cross reference between the WMSR Volume I requirements and the CRD requirements had not been developed. The M&O corrected this deficiency during the surveillance by developing and issuing the matrix and providing a copy to the surveillance team for review. The cross reference matrix was reviewed by the Technical Specialist and the results indicated that the matrix met the requirements of BCP 00-93-0002.

- b) **MGDS-RD requirement 3.7.3.B.2 references DOE letter dated 2/27/90 from Appel (OCRWM) to Linehan (NRC) as a requirement source. The letter was not included in the QA records package as a source document for the MGDS-RD. The M&O corrected this deficiency prior to the conclusion of the surveillance by submitting a copy of the letter for inclusion in the MGDS-RD records package. In addition, objective evidence was presented that at least two of the reviewers had evaluated the contents of this letter as part of their review.**

- c) **Contrary to the requirements of the TDPP, the TDPP for the Preparation of DRDs, Revision 2, was not in the SD&TRD record package. The TDPP, Section 4.3.1 requires that the TDPP and any revisions be maintained as a QA record. This deficiency was corrected prior to the surveillance exit meeting by incorporating a copy of the revised TDPP into the SD&TRD record package.**

- d) **Contrary to the requirements of AP-1.18Q, records in the SD&TRD record package submitted to the LRC, contained errors and inconsistencies. A review of the SD&TRD record package in the LRC disclosed several errors and inconsistencies in the DRRs contained in the record package. One DRR cover page was missing, several DRRs had corrections made with no initials and date, and some comment response sheets attributed comments to the wrong reviewer. The M&O corrected this deficiency prior to the conclusion of the surveillance by reviewing the SD&TRD record package for any additional errors, preparing corrected record copies to correct the discrepancies, and submitting the corrected records to the LRC for inclusion in the SD&TRD record package. A review of other record packages (ESFDR and SBTFRD) being prepared for submittal to the LRC indicated that the errors were an isolated occurrence.**

- e) **Contrary to the requirements of AP-1.18Q, all training to AP-1.18Q for preparers of DRDs (Reference the TDPP for the preparation of DRDs, paragraph 4.3) had not been accomplished. The TDPP states that records management for the DRDs shall be in accordance with AP-1.18Q. AP-1.18Q requires that Record Sources be trained in the requirements of AP-1.18Q. A review of the training records indicated that the document preparers had not completed training as required. The M&O corrected this deficiency prior to**

completion of the surveillance by ensuring that all document preparers received the required training. Copies of completed training matrices were provided to the surveillance team as objective evidence that the training had been accomplished.

- f) Affected Document Notices (ADNs) contained errors. The SNL response for the SD&TRD ADN identified the wrong documents. Also, the ADN incorrectly stated that the SCPB and the old SBTFRD would be revised. ADNs for the ESFDR and the SBTFRD did not list documents reviewed in the "Documents Reviewed" section. Since the evaluation of the impact of the requirements document issuance had not been completed, these records were still in-progress and were corrected prior to the conclusion of the surveillance.

6.0 RECOMMENDATIONS

The following recommendations are presented for M&O management consideration:

- 6.1 During the evaluation of the MGDS-RD QAP 6.2 review process, it was noted that review criteria A8 required that the reviewers review the MGDS-RD for organization and format. A check of the MGDS-RD verified that the document format was not in accordance with the TDPP. However, the section of the TDPP which specifies format states "Sections which do not apply to a specific requirements document may be modified or deleted."

It is recommended that future TDPPs specify a particular format or, if the option to modify or delete specific sections is desirable, the format statement should be written to allow modifications or deletions but require that the modifications or deletions be noted in the requirements document. This will allow reviewers to see that a specific decision had been made to change a section, rather than having been overlooked.

- 6.2 In reviewing the horizontal cross-reference between the WMSR Volume IV and the MGDS-RD, it was noted that some requirements did not transfer correctly (i.e., referenced to incorrect paragraphs). It is recommended that a systematic review of the cross-reference be performed to verify all requirements are correctly referenced.

- 6.3 It is recommended that the source references for requirements in the text of all the requirements documents reference only the source specified in the next higher-level requirements document in lieu of the ultimate regulatory source for the requirement.

- 6.4 The quality of a document cannot be "reviewed in" and the responsibility for quality should not be placed on the document reviewers. The M&O management and document preparers need to realize that the prime responsibility for the accuracy of the document is always with the document preparers. The preparers have the greatest expertise in the topic and have done the detailed research necessary to prepare the document. Reviewers aid the process by providing other viewpoints and expertise but cannot duplicate the detailed work of the document preparer. Reviewers also do not assume responsibility for the document by virtue of completing a review. Document preparers must address mandatory comments; however, they do not have to accept and incorporate comments if the comments are inaccurate or create continuity problems in the flowdown of requirements as noted in this surveillance. It is the responsibility of the preparer to verify the acceptability of a comment and respond accordingly. This philosophy should be emphasized by M&O management.
- 6.5 It is recommended that the M&O provide a statement of qualification (non-System 80) in the document records package. This should include an indication that the review of experience, education, and specified training for the task had been performed in accordance with approved procedures.
- 6.6 The surveillance team recommends that the M&O review the adequacy of training provided to reviewers, especially in the area of documenting reviews to specific review criteria and also training for the proper completion of the DRR form.
- 6.7 Recommendation for the DRD and ESF Design Package review process.
- Several responses to comments by reviewers are open ended and are not specific. Several of these responses discuss revisions to other documents but there is no documentation to ensure the proposed changes are tracked with the referenced documents for inclusion in the next revision. The surveillance team recommends that a commitment tracking system be established that captures changes that need to be made to other documents.
 - It is recommended that the M&O review the process for comment resolution to ensure that the responses to the comments are specific and can be closed within the scope of each DRD or Design Package.
- 6.8 The surveillance team recommends that the M&O provide consistent use of acronyms identifying unqualified or unavailable data. The acronyms "TBV", "TBP", and "TBD" should be addressed more consistently between the TDPP and the requirements documents.

- 6.9 It is recommended that the M&O prepare a horizontal traceability matrix to trace requirements between the SCPB and the SD&TRD in accordance with BCP 00-93-0002.
- 6.10 Table A-1 of the SD&TRD indicates that requirement 3.2.4.1 of the MGDS-RD is not applicable to the SD&TRD. Requirement 3.2.4.1 of the MGDS-RD references ASTM D4256. Table 3-10 of the SD&TRD cites ASTM D4256 as an additional requirements source. It is recommended that the inconsistency between table 3-10 and Table A-1 of the SD&TRD be resolved during the next document revision.
- 6.11 In some cases a requirements document references the Code of Federal Regulations (CFR) but when the requirement is transcribed to a subtier document, the reference is changed to the United States Code (USC). Although the requirements are equivalent, it is recommended that a more consistent approach to citing requirements be applied in future documents and revisions.
- 6.12 In future revisions of the requirements documents, the references to the sources for requirements in the text (shown in brackets) should follow the definition of the derived requirements given in the TDPP. It is recommended that requirements that contain greater detail or specificity than the higher level requirements be referenced as "Derived from ..."
- 6.13 The surveillance team recommends that the M&O review the personnel training needs relative to DRD content, effectivity, and impact of change to other documents.
- 6.14 In reviewing the SD&TRD, it was noted that several objectives would require verification. There was no definition of the process by which verification of the objectives was to be accomplished. It is recommended that implementing procedures be developed to define this process and define responsibilities.
- 6.15 It is recommended that the M&O revise the TDPP for DRDs, paragraph 4.1.3, relative to the RASs in the records package.
- 6.16 The surveillance team recommends that the M&O revise the horizontal traceability matrix for the SBTFRD to include all requirements from the old SBTFRD along with a comment column to account for each requirement.
- 6.17 It is recommended that the M&O compare SBTFRD requirement 3.2.3.4.1G with Field Change Request (FCR) 93/398. There appears to be a conflict between these two requirements documents that may require a revision to one of them.

- 6.18** SBTFRD requirement 3.2.4.2H requires as-built drawings for drill pads and boreholes. No similar requirements appear in Section 3.2.3.4.1 for the trenches and soil pits although Section 3.2.2.11A appears to require such information for all trenches, roads, excavations and drillholes. It is recommended that a check for consistency between sections for facilities with similar generic requirements be conducted during the next revision cycle to provide more uniformity on the level of application where generic requirements appear in the document.
- 6.19** Recommendations on the 90% Reviews of the ESF Packages 1B and 2A.
- It is recommended that the procedure for the 90% Review allow for a concurrence review cycle, whereby the reviewers will be able to see how their resolved comments were incorporated.
 - The M&O, Vienna, should track, evaluate and ensure implementation of recommendations made in Kubo letter dated 8/31/93 to Shelor (RW-30) on ESF Package 2A.
- 6.20** During a review of personnel qualification and training record packages at the YMP Training Center, the surveillance team noted that one individual had recently transferred within the M&O and that the appropriate qualification and training records had been transferred from the M&O files into the YMP training files. Upon review of the records, the team noticed that there was no record to indicate a training update was provided for a recently revised procedure. The training records indicated that the procedure was part of the individual's required maintenance training. The reason given for the failure to provide the training update was that the individual was in transit when the procedure revision was issued. Therefore, the individual was overlooked and training was not completed.

The surveillance team recommends that the supervisor or other designated responsible person review the individual qualification and training records, for personnel who are transferring within the M&O, to determine if any updated training is required.

7.0 LIST OF ATTACHMENTS

Attachment 1: Personnel Contacted during the Surveillance

Attachment 2: Surveillance Details

Attachment 3: Objective Evidence Reviewed During the Surveillance

Attachment 4: Information Copies of CARs

ATTACHMENT 1

Personnel Contacted During the Surveillance

<u>Name</u>	<u>Organiz.</u>	<u>Title</u>
Samir Bannout	M&O	Systems Engineer
Hugh Benton	M&O	Manager, Waste Package Development
George Carruth	M&O	Manager, Systems Integration
Eugene Chulick	M&O	Manager, M&O Training
John Clark	M&O	Engineering Supervisor
Betty Cruz	M&O	Manager, Configuration Management
Hubert Dameron	M&O	QA, Senior Technical Specialist
J. C. De La Garza	DOE	Engineer
Larry Engwall	M&O	ESF Surface Facilities Supervisor
Richard Fournier	M&O	Review Secretary
Dale Foust	M&O	Nevada Site Manager
James Frank	M&O	Manager, Support Operations
Douglas Franks	M&O	QA Audits Manager
Tom Geer	M&O	Manager, Systems Engineering
Hank Greene	QATSS	QA Division Manager
Robert Harpster	QATSS	QA Specialist
Phil Horsman	M&O	QA Technical Specialist
Jim Houseworth	M&O	PA Group Leader
Jack Jackson	M&O	Manager, Nevada Site M&O QA
Gary Janis	M&O	Writer
Kathy Jerome	M&O	Records Clerk
Judy Justice	M&O	Training Coordinator
Robert Justice, Jr.	M&O	Manager, Quality Engineering
Ken Keener	M&O	Acting Records Manager
Daniel Klimas	QATSS	QA Specialist
Arthur Kubo	M&O	Assistant General Manager, Systems
William Law	M&O	Systems Engineer
Bill Leonard	M&O	Project Engineer
Larry Lindsay	M&O	Systems Engineer
Mike Lugo	M&O	Manager, Regulatory & Licensing
Melinda Martin	M&O	Editor
Paul McKie	M&O	Subsurface Design
John Miller	M&O	Manager, Systems Engineering
Robert Morgan	M&O	Manager, M&O QA
Frank Nash	M&O	Quality Assurance

ATTACHMENT 1 (Continued)

Personnel Contacted During the Surveillance

<u>Name</u>	<u>Organiz.</u>	<u>Title</u>
Terry Paul	M&O	Systems Engineer
Mike Penovich	M&O	Manager, Nevada Site Training
John Peters	M&O	Principle Mining Engineer
Paul Pimentel	M&O	Manager, Surface Design
Bobbie Pope	M&O	TSLCC
Sam Rindskopf	M&O	System Requirements Manager
Roland Robertson	M&O	General Manager
Teresa Roberts	M&O	Records Specialist
Tom Rodgers	QATSS	Quality Audit Lead
Ron Ruth	M&O	Quality Assurance
Bob Sandifer	M&O	Manager, MGDS Development
Randolph Schriener	RSN	Systems Engineer
Mark Senderling	DOE	General Engineer
Scott Sinnack	M&O	Senior Staff
Gary Teraoka	M&O	Systems Engineer
Barry Thom	M&O	Systems Engineer
Jim Tierney	M&O	Manager, Quality Engineering
Frank Van Der Laan	M&O	Systems Engineer
Glenn Vawter	M&O	Deputy Site Manager
Bernard Verna	DOE	Engineer
James Watson	M&O	Training Supervisor

ATTACHMENT 2

Surveillance Details

1. Mined Geologic Disposal System Requirements Document

The surveillance team reviewed checklist items, examined objective evidence, and interviewed personnel to verify that the requirements were met in the preparation, review, and issue of the MGDS-RD. QAP 3.5 required that a Technical Document Preparation Plan be approved and issued prior to the preparation of the MGDS-RD. A Technical Document Preparation Plan (TDPP) was issued for the preparation of Systems Requirements Documents (SRDs) and this TDPP was used for the preparation of the MGDS-RD. The preparation of the MGDS-RD followed the requirements of QAP 3.5 and the TDPP including the consideration of the appropriate review criteria, qualification of inputs, and identification of interfaces. The preparers of the MGDS-RD did not completely follow the format specified in the TDPP but the TDPP did allow for exceptions to the format (See Recommendation 6.1).

The review of the MGDS-RD was accomplished according to the requirements of QAP 6.2. The reviewers were selected based upon their areas of expertise and certification of qualification was appropriately documented for each reviewer. Each reviewer was provided with a review package that included applicable requirements documents for self-study prior to performing the review. A review of I & T Matrices for each reviewer indicated that the self-study was completed prior to performing the review. Each reviewer was also provided with a Document Review Record (DRR) and Comment Sheet upon which to document comments. The DRRs were appropriately completed and returned to the review coordinator. The comments were responded to as required. A review of subsequent drafts of the MGDS-RD indicated that mandatory comments were incorporated as appropriate.

For training and qualification of preparers and reviewers, a review of checklist items, examination of objective evidence, and interviews with personnel responsible for training and qualification records indicated that the procedural requirements were adequately met. The education and experience of document preparers and reviewers had been verified. Training to the applicable documents governing work was completed prior to performing quality affecting activities. Records generated by this activity were properly maintained in accordance with DOE System 80 requirements.

To evaluate compliance with QA records requirements, the surveillance team reviewed checklist items, examined objective evidence, and interviewed personnel to determine if the requirements of QAAP 17.1 were met. The MGDS-RD QA record package was assigned a QRP identification number (91-0569.00) and the number was entered into the

log maintained by the originating organization. A review of the record package verified that the records were appropriately marked "QA" and drafts were marked "Draft". Corrections to records were appropriately made, the records were correctly assembled, and the record package was in the process of being submitted to the QRC for safekeeping.

The reviews of the QA record packages, TDPP, and MGDS-RD included: reviewing the Requirements Document for format; verifying that system functions in the document are based on the functions as identified in the Physical System Requirements document; reviewing and verifying that the Requirements Allocation Sheets (RASs), Design Constraint Sheets (DCSs), Issue Clarification and Derived Requirements Document (IC&DRDs) forms, and Technical Document Input Control (TDICs) forms, and Verification Matrices were correctly developed, completed, reviewed and maintained; verifying that reviews were performed and that preparers and reviewers were adequately indoctrinated and trained to the TDPP and applicable procedures; verifying that the TDPP, MGDS-RD, all review documentation, and qualification and training records are maintained as QA Records; verifying education and experience of preparers and reviewers; and verifying that requirements included in the document as "TBR" or "TBD" are qualified in accordance with QA procedures. Again, although the process and documents were acceptable, the team did note an area of concern. Several sections in the MGDS-RD did not have the same titles or the same information required in the format section of the TDPP (See Recommendation 6.1). Also, the Table of Contents listed paragraph H as being on page 102 instead of 103 and did not list Appendices A, B, or C. The inconsistencies in the format came from the M&O understanding that the format contained in the TDPP was only a suggested format. However, after further discussion, the M&O agreed that a specified format is required by the governing procedure and that this requirement will be addressed in future TDPPs and revisions to current TDPPs. As for the inconsistencies in the Table of Contents, the M&O agreed to review the document and correct these and any others they find during the next revision.

A technical crosswalk review was performed to ensure that WMSR-Volume IV technical requirements traced to the new MGDS-RD. In reviewing the requirement defined in BCP 00-93-0002 and the supporting documentation, it was noted that the cross-reference matrix between the WMSR Volume I and the CRD had not been performed. This deficiency was corrected during the surveillance (See Section 5.4.2a). The review of documents to determine the technical adequacy of the MGDS-RD included: reviewing the horizontal cross-reference of requirements between the WMSR-Vol. IV and the MGDS-RD to see that requirements were adequately addressed in the new document; reviewing how requirements were transferred from documents being replaced; reviewing analyses or justifications for selecting, modifying, or deleting requirements contained in superseded documents, or for adding new requirements not contained in superseded documents; and reviewing RASs, DCSs, TDICs, and IC&DRDs to evaluate the technical defensibility of the process used for selecting old requirements for inclusion in the new document.

Although the process and documents appeared to be acceptable, the team did discover a few errors and inconsistencies during the reviews. Based on a sample size of fifty percent of the WMSR-Vol. IV to MGDS-RD horizontal cross-reference, the team found requirements that either did not transfer correctly (See Recommendation 6.2) or were missed (See CAR HQ-93-031).

For the technical flowdown evaluation of the MGDS-RD, the surveillance team used Table 6-3 in the MGDS-RD along with the RASs and the IC&DRD forms developed for the MGDS-RD to verify the flowdown of requirements from the CRD. The team found that the sampled requirements, with the exceptions noted, were adequately traceable to CRD requirements. Because of the number of variances noted in a small sample of requirements, this condition should receive further review by the M&O. The deficiency identified in the flowdown of a requirement source from the CRD to the MGDS-RD is documented on CAR HQ-93-031.

As an example of the deficiency, CRD requirement 3.5.1.2 was traced to the MGDS-RD. The requirement was listed as "derived" for the MGDS in the CRD and relates to the need for test equipment calibration. The original review draft of the MGDS-RD correctly transcribed the CRD requirement without modification. However, the reference in the text did not indicate the CRD as the source, but listed 10CFR60.131(a)(6) and 10CFR20 as sources. These documents discuss radiation alarm systems. It appears to have been a general practice to not list the CRD source for the requirement in the MGDS-RD but to attempt to list the ultimate regulatory source. The requirement given in the draft MGDS-RD was checked against the regulations referenced in the text and it was noted that the statements on test equipment calibration and radiation monitoring equipment did not correspond. Because of the way the text was referenced, it was not apparent that the requirement was derived from the CRD. The document preparers responded to the comment by deleting the CRD requirement and replacing it with the 10CFR60 requirement on a different topic. The net result was that a CRD requirement on test equipment calibration that should have flowed down to the SD&TRD was changed to a repository requirement on radiation alarm systems in the MGDS-RD. The CRD requirement did not flow down to the proper lower-tier documents. This deficiency is documented on CAR HQ-93-031. The M&O plans to include the CRD references in the next revision of the MGDS-RD (See Recommendation 6.4).

The team compared CRD requirement 3.5.4.2.B to the MGDS-RD for traceability and flowdown. Table 6-3 identifies MGDS-RD requirements 3.7.1.3.B.2 and 3.7.3.B.3 as the flowdown requirements. MGDS-RD requirement 3.7.3.B.2 references DOE letter dated 2/27/90 from Appel (OCRWM) to Linehan (NRC) as a requirement source. The letter was not included in the QA records package as a source document for the MGDS-RD (it was, however, approved as an input source for the CRD and was documented on a TDIC form). This deficiency was corrected during the surveillance (See Section 5.4.2b).

A contributing factor to the variances in the flowdown of requirements from the CRD to the MGDS-RD appears to have been the view that variances were justified because they were the result of mandatory comments made by reviewers; that the final text was acceptable because reviewers concurred on the final draft; and that the text was correct because no reviewer had made a comment on it (See Recommendation 6.5).

The team reviewed the comment sheets for all the Systems Engineering reviewers to determine whether reviewers were checking the flowdown of requirements from the CRD to the MGDS-RD. The comments were categorized into those that referred to flowdown and those that did not. Of the systems engineering reviewers, 5 of 251 comments were related to flowdown of requirements. However, one reviewer's comment related to flowdown was actually an umbrella comment with 32 separate comments on flowdown. Because of the volume of comments from the one reviewer, it appears that the reviewer made an effort to adequately review flowdown from the CRD to the MGDS-RD.

The team investigated the derivation of MGDS-RD Requirement 3.2.6.1.D by reviewing the supporting documentation in the records package. This requirement covers the method for selecting the design basis earthquake for the design of surface waste handling facilities. The DCS for this requirement lists DOE Order 6430.1A as the source for this requirement. The IC&DRD form (page 22 of 50) states the need for a requirement in this area. The discussion on the form indicates that the QAP 6.2 review by one reviewer recommended the use of UCRL 15910 for this requirement (The DOE order requires the use of this report for seismic design). Review of the original comment sheet (page 12 of 45) indicates that the actual comment was to use UCRL 15910 for seismic design in the ESFDR (i.e., for ESF design not surface waste handling facility design). In generalizing the comment from ESF issues to waste handling facilities the preparers lost sight of the difference between licensed and non-licensed facilities and apparently did not review the Program and NRC positions on this issue. Both the approach listed in the SCP and that stated by members of the NRC staff differ from the approach given in UCRL 15910. The selection of the approach to a seismic design basis is primarily a licensing strategy issue. Requirements documents should be careful not to inadvertently set DOE policy for such strategy decisions.

2. Site Design and Test Requirements Document

The surveillance team reviewed checklist items, examined objective evidence, and interviewed personnel to verify that the requirements were met in the preparation, review, and issue of the SD&TRD. QAP 3.5 required that a Technical Document Preparation Plan be approved and issued prior to the preparation of the SD&TRD. A TDPP was issued for the preparation of Design Requirements Documents (DRDs) and this TDPP was used for the preparation of the SD&TRD. The SD&TRD was prepared in accordance

with the requirements of QAP 3.5 and the TDPP, however, no objective evidence was identified that indicated that source input, evaluation and configuration controls were being used (See CAR YM-94-003). The preparers of the SD&TRD did not completely follow the format specified in the TDPP but the TDPP did allow for exceptions to the format (See Recommendation 6.1). It was noted during the review that the TDPP for DRDs had been revised to correct errors but the latest revision was not included in the SD&TRD records package as required. This deficiency was corrected during the surveillance (See Section 5.4.2c).

The review of the SD&TRD was accomplished according to the requirements of QAP 6.2. The reviewers were selected based upon their areas of expertise, however, no documentation of qualification and training for the reviewers was included in the SD&TRD records package (See Recommendation 6.6). A review of I & T Matrices for each reviewer indicated that the required self-study was completed prior to performing the review. Each reviewer was also provided with a DRR and Comment Sheet upon which to document comments. The DRRs, although marginally acceptable except as noted in Section 5.4.2d, of this report, were completed and returned to the review coordinator (See Recommendation 6.7). The comments were responded to as required, however, some comments had open-ended responses (See Recommendation 6.8). A review of subsequent drafts of the SD&TRD indicated that mandatory comments were incorporated as appropriate.

A review of checklist items, examination of objective evidence, and interviews with individuals responsible for training and qualification records indicated that the procedural requirements for training and qualification of preparers and reviewers were adequately met. The education and experience of document preparers and reviewers had been verified. Training to the applicable documents governing work was completed prior to performing quality affecting activities. Records generated by this activity were properly maintained in accordance with DOE System 80 requirements.

A review of checklist items, examination of objective evidence, and interviews with personnel relative to responsibilities for records indicated that the procedural requirements were met. Documents directing the conduct of quality affecting activities (e.g. TDPPs, QAP 6.2 Document Reviews, QMP-02-01 Indoctrination & Training and Qualification Verification forms, and RASs used to develop the documents) were adequately identified and were included in record packages. Records were identified, controlled and submitted to the LRC by the designated individuals. One item of concern noted by the team was the lack of documented training to AP-1.18Q for the preparers (i.e. Record Sources per the procedure) responsible for generating records. The M&O interpreted the requirement to mean that an individual, who was assigned to assemble record packages, needed training to the procedure and that person could then perform the duty for others. However, the procedure states that record sources are those individuals or organizations

responsible for generating records. The M&O agreed that their position was not consistent with the procedural requirement. Training to the current revision of the procedure was completed by the preparers and evidence of such training was presented to the surveillance team. Additional training will be required for all others originating records in the future. This appears to have been an isolated occurrence due to a misunderstanding of the procedure and was corrected during the surveillance (See Section 5.4.2c).

The review of documents to determine the technical adequacy of the SD&TRD included: reviewing the SD&TRD for format; verifying that system functions in the document are based on the functions as identified in the old baseline; reviewing and verifying that the RASs, and Verification Matrices were correctly developed, completed, reviewed and maintained; and verifying that requirements included in the document as "TBR" or "TBD" are qualified in accordance with QA procedures. It was noted during the review that the acronyms "TBD", "TBP", "TBR", and "TBV" were used inconsistently between the TDPP and the requirements documents (See Recommendation 6.9). The technical evaluation included a review to determine if requirements from the SCPB were adequately transferred to the SD&TRD. The requirements traceability from the SCPB to the SD&TRD had not been performed in a manner that could be reviewed easily (See Recommendation 6.10). A review of the Affected Document Notice (ADN) for the SD&TRD identified errors made in completing the document. The SNL response identified the wrong documents and the ADN incorrectly stated that the SCPB and old SBTFRD will be revised. A review of ADNs for the ESFDR and SBTFRD turned up additional errors in that the "Documents Reviewed" section did not list the documents reviewed. These errors were corrected prior to the conclusion of the surveillance (See Section 5.4.2f).

For the technical flowdown evaluation of the SD&TRD, the surveillance team used Table A-1 in the SD&TRD and the RASs developed for the SD&TRD to verify the traceability and flowdown of requirements from the MGDS-RD to the SD&TRD. The surveillance team reviewed the RASs for SD&TRD requirements 3.2.9.4.A through 3.2.9.4.E. These derived requirements related to the ESF contain a substantial amount of detail compared with the upper-tier source requirements. The RASs simply restated the requirement as it appeared in the SD&TRD. The RASs did not provide additional information identifying the source nor any analyses as required by the TDPP. The surveillance team discussed this with the M&O to determine if there was any additional documentation regarding the rationale for derived requirements. M&O representatives indicated that some rationale may be in the DRRs related to those requirements but stated that the derived requirements were acceptable without additional rationale because subject matter experts had reviewed and accepted the requirements during the QAP 6.2 review process (See Recommendation 6.5). This position is contrary to the M&O General Counsel recommendation regarding documentation of engineering decisions dated June 17, 1993. The surveillance team

reviewed the DRRs from the QAP 6.2 reviewer designated as the ESF subject matter expert. There was no objective evidence that the reviewer commented on the derived requirements. The surveillance team interviewed the ESF subject matter expert to find out the rationale for the requirements. The ESF subject matter expert was not aware of the rationale for the derived requirements. CAR YM-94-002 documents the deficiency related to inadequate source documentation for derived requirements.

The surveillance team interviewed M&O personnel to determine the methodology for the preparation of the Verification Table in Section 4 of the SD&TRD and the bases for the selection of verification methods. According to the M&O, engineering judgement was used in deciding the necessary type of verification. No documentation of rationale exists for the table itself. This is another example of the deficiency documented in CAR YM-94-002.

As part of the sample, the team traced the requirements from Table 3-8 (MGDS-RD requirement 3.7.3.B.3) in the MGDS-RD to the SD&TRD. Table 3-8 identifies the requirements as applicable to Site Characterization facilities "to the extent that they actually impact on design, construction or operations as determined in project-level design analysis." The surveillance team interviewed M&O representatives to determine if SD&TRD preparers performed any project level design analyses to determine if the requirements in MGDS Table 3-A were applicable to the SD&TRD. SD&TRD document preparers did not perform a formal analysis. The requirements were transferred to Table 3-7 and Table 3-10 of the SD&TRD. Additionally, MGDS-RD requirement 3.2.4.1 which references ASTM D4256 for decontaminability of protective coatings was identified as not applicable to the SD&TRD in SD&TRD Table A-1. However, ASTM D4256 is identified as an applicable requirement in SD&TRD Table 3-10 (See Recommendation 6.11)

The surveillance team evaluated CRD requirement 3.5.1.2, which was not adequately addressed in MGDS-RD requirements 3.5.1.2.A and 3.5.1.2.B as noted in CAR HQ-93-031, to determine if the requirement was translated to the SD&TRD. SD&TRD Table A-1 indicates that MGDS-RD requirements 3.5.1.2.A and 3.5.1.2.B are not applicable to the SD&TRD.

The surveillance team reviewed the flowdown from Section 3.7.1.3.B.3 (Table 3-8) of the MGDS-RD to the SD&TRD using SD&TRD Table A-1. There were some errors noted in Table A-1 (in the SD&TRD column, Section 3.3.7 should have been cited and Section 3.7.G shown on the table does not exist in the text). The flowdown to applicable sections in the SD&TRD was generally satisfactory, with the exception that where a CFR section was cited in the MGDS-RD, the corresponding USC section was sometimes cited in the SD&TRD instead (See Recommendation 6.12).

SD&TRD Sections 3.2.9.4, 3.2.10.1, and 3.3.6.4 were reviewed. The team found that the references to source documents in brackets in the text did not differentiate between a requirement that was directly transcribed from the listed source and a requirement that was derived from general requirements in the source document. Since the derived requirements can add extensive interpretation and detail, it was recommended that the reference differentiate a derived requirement from a directly transcribed requirement (See Recommendation 6.13).

The surveillance team discussed with the M&O how the site characterization objectives in the SD&TRD flow down to site characterization testing documents such as study plans and Test Planning Packages (TPPs). Although no procedure or documentation of this exists, the M&O believes that the SD&TRD objectives flow down to the study plans. The M&O has been setting up training meetings with the Principal Investigators (PIs), who prepare study plans, to introduce them to the document. It was recommended that more emphasis be placed on training for implementation of the SD&TRD and that AP-1.10Q be reviewed and revised as necessary to provide the procedural framework for implementing the SD&TRD objectives in study plans (See Recommendation 6.14).

The surveillance team discussed with the M&O how the verification of site characterization objectives defined in Section 4 of the SD&TRD is to be implemented. It was indicated that the responsibility for verification rested with the Regulatory and Site Evaluation Division (RSED) Director. The M&O may also be involved through its Title III activities. There is no formalization of how the verification is to be implemented (See Recommendation 6.15).

3. Exploratory Studies Facility Design Requirements

For the programmatic evaluation of the development, preparation, review, and issue of the ESFDR, the surveillance team examined the process according to the requirements of QAP 3.5 and QAP 6.2. The TDPP for the preparation of DRDs was used for the preparation of the ESFDR. The preparation of the ESFDR followed the requirements of QAP 3.5 and the TDPP including the consideration of the appropriate review criteria and identification of interfaces. The ESFDR addressed unqualified data but not in the same manner as the SD&TRD. The ESFDR did not define the use of "TBV" for unqualified data (See CAR YM-94-003).

The review of the ESFDR was accomplished according to the requirements of QAP 6.2. The reviewers were selected based upon their areas of expertise, however, no documentation of qualification and training for the reviewers was included in the ESFDR records package (See Recommendation 6.6). A review of I & T Matrices for each reviewer indicated that the required self-study was completed prior to performing the review. Each reviewer was also provided with a Document Review Record and Comment

Sheet upon which to document comments. The DRRs were appropriately completed and returned to the review coordinator. The comments were responded to as required, however, some comments had open-ended responses (See Recommendation 6.8). A review of subsequent drafts of the ESFDR indicated that mandatory comments were incorporated as appropriate.

A review of checklist items, objective evidence, and interviews with individuals responsible for training and qualification records indicated that the procedural requirements for training and qualification of preparers and reviewers were adequately met. The education and experience of document preparers and reviewers had been verified. Training to the applicable documents governing work was completed prior to performing quality affecting activities. Records generated by this activity were properly maintained in accordance with DOE System 80 requirements.

A review of checklist items, objective evidence, and interviews with personnel relative to responsibilities for records generated during development of the requirements documents indicated that the procedural requirements were met. Documents directing the conduct of quality affecting activities (e.g. TDPPs, QAP 6.2 Document Reviews, QMP-02-01 Indoctrination & Training and Qualification Verification forms, and RASs used to develop the documents) were adequately identified and were included in record packages. Records were identified, controlled and submitted to the LRC by the designated individuals.

A review of TDPP technical checklist item numbers 3 and 7, examination of objective evidence, and interviews with personnel responsible for preparing the ESFDR indicated that the document was prepared in accordance with the requirements contained in the TDPP. A technical crosswalk review was done to ensure that ESF requirements from the old baseline traced to the new ESFDR. Some sections of the ESF did not transfer verbatim to the ESFDR and were not noted as such on the cross-reference. This condition was discussed with M&O personnel who indicated that some professional judgement was used in rewording the requirements, however, the requirements were not changed. Additionally, some sections of the ESFDR were changed and not noted on the cross-reference due to changes in the SD&TRD which were flowed down into the document. These changes were reviewed by the surveillance team and the team concurred with the M&O's explanations.

For the technical flowdown evaluation of the ESFDR, flowdown of selected requirements from the SD&TRD to the ESFDR was reviewed using ESFDR Appendix D. This included the flowdown of SD&TRD requirements 3.2.5.1.1.A-C and 3.2.5.4.2.A-C (both not allocated to ESF because they relate to radiological safety per ESFDR Appendix D), 3.2.9.3.G.1.a-e, and flowdown from SD&TRD 3.7.B.3 to ESFDR 3.2.1.10.1.F. The flowdown of these requirements was considered to be satisfactory.

The flowdown from SD&TRD 3.7.B.3 to ESFDR 3.2.1.AB includes a reference to ASTM D4256. This requirement was dropped from the SD&TRD based on nonapplicability as a radiation safety requirement. However, it was specifically added back to the document in the table in Section 3.7.B.3. This ASTM was carried down to the ESFDR apparently without an evaluation of its relevance. A recommendation was made to resolve the inconsistencies related to this requirement in the SD&TRD (See Recommendation 6.7). It is also recommended that evaluation process be reviewed at the ESFDR level to assure that requirements have been reviewed for applicability.

The surveillance team reviewed the RASs for the ESFDR and found that derived requirements for the ESFDR were restated on the RASs just as they appeared in the ESFDR. No additional information identifying the source nor any analyses was provided on the RASs as required by the TDPP. This is the same condition found with the derived requirements in the SD&TRD and the SBTFRD. CAR YM-94-002 documents this deficiency. It was noted during the review that the RASs had not been completed and included in the QA record package as indicated in the TDPP. The M&O stated that the TDPP would be revised to address this condition (See Recommendation 6.16).

4. Surface Based Testing Facilities Requirements Document

For the programmatic evaluation of the development, preparation, review, and issue of the SBTFRD, the surveillance team examined the process according to the requirements of QAP 3.5 and QAP 6.2. The TDPP for the preparation of DRDs was used for the preparation of the SBTFRD. The preparation of the SBTFRD followed the requirements of QAP 3.5 and the TDPP including the consideration of the appropriate review criteria and identification of interfaces. The SBTFRD addressed unqualified data but not in the same manner as the SD&TRD. The SBTFRD did not define the use of "TBV" for unqualified data (See CAR YM-94-003).

The review of the SBTFRD was accomplished according to the requirements of QAP 6.2. The reviewers were selected based upon their areas of expertise, however, no documentation of qualification and training for the reviewers was included in the SBTFRD records package (See Recommendation 6.6). A review of I & T Matrices for each reviewer indicated that the required self-study was completed prior to performing the review. Each reviewer was also provided with a DRR and Comment Sheet upon which to document comments. The DRRs were appropriately completed and returned to the review coordinator. The comments were responded to as required, however, some comments had open-ended responses (See Recommendation 6.8). A review of subsequent drafts of the SBTFRD indicated that mandatory comments were incorporated as appropriate.

A review of checklist items, examination of objective evidence, and interviews with

personnel responsible for training and qualification records indicated that the procedural requirements for training and qualification of preparers and reviewers were adequately met. The education and experience of document preparers and reviewers had been verified. Training to the applicable documents governing work was completed prior to performing quality affecting activities. Records generated by this activity were properly maintained in accordance with DOE System 80 requirements.

A review of checklist items, examination of objective evidence, and interviews with personnel relative to responsibilities for records indicated that the procedural requirements were met. Documents directing the conduct of quality affecting activities (e.g. TDPPs, QAP 6.2 Document Reviews, QMP-02-01 Indoctrination & Training and Qualification Verification forms, and RASs used to develop the documents) were adequately identified and were included in record packages. Records were identified, controlled, and submitted to the LRC by the designated individuals.

A technical review was performed to ensure that surface based testing requirements from the old baseline traced to the new SBTFRD. This included a review of a sample of entries in the cross reference of requirements between the old SBTFRD and the new SBTFRD and determining if the requirements were adequately addressed in the new SBTFRD. It was determined that in some cases requirements in the old SBTFRD were not addressed in the Horizontal Traceability Matrix (See Recommendation 6.17).

For the technical flowdown evaluation of the SBTFRD, the following SD&TRD sections were checked for flowdown to the SBTFRD: 3.2.5.1, 3.3.1.B, 3.2.2.19.A, 3.2.7.1.A, 3.2.3.4.1, and 3.2.3.3.1.B. Those requirements that flowed down without modification were found to be accurately transcribed. Most of the corresponding requirements in the SBTFRD represent the addition of considerable design detail. The modified requirements are not indicated as "derived requirements" in the text. The SBTFRD text only provides a reference back to the higher-level generic requirement. The surveillance team reviewed the RASs and found that derived requirements for the SBTFRD were restated on the RASs just as they appeared in the SBTFRD. No additional information identifying the source nor any analyses was provided on the RASs as required by the TDPP. The generation of these derived requirements was discussed with the M&O. Most of these requirements came from the old SBTFRD according to the M&O. CAR YM-94-002 documents this deficiency.

The team interviewed M&O representatives in order to determine the mechanisms used for allowing variances from the SBTFRD requirements for specific field activities and how such variances are reflected in the SBTFRD. As an example, the team asked about SBTFRD requirement 3.2.3.4.1.G. This requirement calls for originally excavated material to be used to backfill trenches and test pits. Field Change Request (FCR) 93/398 changes the Raytheon Services Nevada (RSN) specifications on trenches and pits to allow

backfilling with drill cuttings. The M&O was asked how such variances would be treated at the SBTFRD level. It was the M&O's view that an Interim Change Notice (ICN) would be issued to the SBTFRD before such a variance would be permitted. A recommendation was made that the specific example cited be evaluated to resolve the conflict and determine the impact to ongoing field activities (See Recommendation 6.18).

The team reviewed the requirements in Sections 3.2.3.4.1 and 3.2.3.4.2 of the SBTFRD for consistency since these requirements are for similar facilities. Section 3.2.3.4.2.H has a requirement for as-built drawings that is not present in Section 3.2.3.4.1. This was discussed with the M&O. It was noted that there is a generic concern in Section 3.2.2.11 that would apply to both these sections and would require the preparation of as-built drawings. A recommendation was made to review the document for consistency in the next revision so that requirements are stated at the same level throughout the document in order to avoid confusion on when a requirement may apply (See Recommendation 6.19).

5. Exploratory Studies Facility (ESF) Package 1B and Package 2A Title II Ninety Percent Design Review

A limited review of ESF packages 1B and 2A 90% design review was performed to verify that these reviews addressed requirements flowdown from the new ESFDR. The ESF documents below the ESFDR are currently being worked (Packages 1B and 2A) or are planned for rework (Package 1A) in response to the new requirements baseline and these design documents have yet to be issued. The Basis For Design (BFD) document for ESF Package 1A and the associated design documents are currently planned for revision. The BFD and associated design documents for ESF Packages 1B and 2A are currently being worked and are not yet issued. These documents are in the process of implementing the new requirements baseline, therefore, evaluation could not be completed at this time.

Some concerns were identified during the limited review that should be addressed when the documents are revised. First, some responses to comments made during the technical reviews were open-ended and in some cases were not completely addressed (See Recommendation 6.8). Secondly, there was no process identified whereby reviewers were provided with a review copy of the updated document to ensure the comments were adequately incorporated. Also, a letter from Kubo to Shelor dated 8/31/93 contained recommendations that should be tracked and addressed (See Recommendation 6.20).

6. Verification of Corrective Action Requests (CARs)

A. Verification of CAR HQ-92-012.

A review of checklist items, examination of objective evidence, and interviews with the individuals responsible for completion and implementation of corrective actions indicated that all actions required for CAR HQ-93-012 had been completed with the following exceptions: A review of the Remedial Actions for Condition B found that one of the requirements from WMSR Vol. IV, noted as missing in the ESFDR, was not included on Table 2 "Disposition of Requirements Not Found in the ESFDR". Discussions and objective evidence presented to the surveillance team showed that this item had been considered but had been inadvertently dropped from the table. During the surveillance, the responsible personnel prepared an amended response to the CAR detailing the disposition of this missing item. A review of the amended response by the surveillance team determined that it was acceptable and concluded the required corrective actions.

One additional item was noted by the surveillance team concerning the "Action to Preclude Recurrence" for Conditions A&B. Document preparers for each of the design documents were to be adequately trained to QAP 6.2, "Document Review". The surveillance team found that one of the preparers had not received training to the most recent revision of the procedure although the individual had been trained to the previous revisions. During interviews with the individual, it appears that this person was in the process of relocation during the time the review to the newer revision was taking place. Furthermore, this individual was a preparer, did not perform a review, and had not performed any reviews since the new revision was in effect. Based on a review of training records for other reviewers, the surveillance team concluded that this was an isolated case. Training to the current revision was completed by the individual and objective evidence was presented to and accepted by the team (See Recommendation 6.21). Based on a review of previously submitted objective evidence, evidence reviewed during the surveillance, and the disposition of the above items, the surveillance team concluded that corrective action was complete. Subsequent to the surveillance, CAR HQ-92-012 was closed.

B. Verification of CAR HQ-93-019

The scope of the surveillance included verification of corrective actions for CAR HQ-93-019. The required corrective actions were reviewed with the M&O Training Manager and M&O QA representatives. The M&O QA representatives indicated that the revised procedures needed to complete corrective actions were still in the approval process and therefore, a request for extension of the corrective action due date was being submitted. Corrective actions will be verified when the all required corrective actions are complete.

ATTACHMENT 3

Objective Evidence Reviewed During the Surveillance

<u>Item</u>	<u>Rev/Date</u>	<u>Title</u>
1	Rev. 0	Civilian Radioactive Waste Management System Requirements Document (CRD)
2	Rev. 0	MGDS-RD record package including related Document Review Records, Requirements Allocation Sheets, Technical Document Input Control forms, Design Constraint Sheets, Issue Clarification & Derived Requirements Document forms, Verification Matrices, and drafts of the Requirements Document
3	Rev. 0	SD&TRD record package including related Document Review Records, Requirement Allocation Sheets, and drafts of the Requirements Document
4	Rev. 0	ESFDR record package including related Document Review Records, Requirements Allocation Sheets and drafts of the Requirements Document
5	Rev. 0	SBTFRD record package including related Document Review Records, Requirements Allocation Sheets, and drafts of the Requirements Document
6	2/27/90	DOE Letter from Appel (OCRWM) to Linehan (NRC)
7		ASTM D4256
8		SCPB
9	9/9/93	M&O letter from T. C. Geer to D. C. Royer on Horizontal Requirements Traceability Matrices for the ESFDR, SBTFRD, and RDR
10	7/14/93	DOE letter from Carl Gertz to Dwight Shelor on Technical Document Hierarchy Transition
11		SBTFRD (YMP/CM-002)

ATTACHMENT 3 (Continued)

Objective Evidence Reviewed During the Surveillance

<u>Item</u>	<u>Rev/Date</u>	<u>Title</u>
12	Rev. 9	SBTFRD (YMP/CM-007)
13		TDPP for the MGDS DRDs
14		BCP-00-93-0002 Impact Analysis
15		Change Request 93/422
16		Affected Document Notice 93/422
17		M&O MGDS Design Control Improvement Plan
18		ESF Title II Package 1B Document Review Records (DRRs)
19		Open DRRs Status and Tracking Data for BFDs 1B and 2A
20		DRRs for ESF Title II Package 2A
21	8/31/93	M&O letter from A. S. Kubo to D. E. Shelor on Report of Participation in the Conduct of ESF Package 2A Title II 90% Design Review
22		Change Request 93/329
23		Affected Document Notice 93/329
24		Change Request 93/418
25		Affected Document Notice 93/418
26		Change Directive 93/418
27	7/23/93	BCP-00-93-0002

ATTACHMENT 3 (Continued)

Objective Evidence Reviewed During the Surveillance

<u>Item</u>	<u>Rev/Date</u>	<u>Title</u>
28	Revision 0	MGDS-RD requirements sample: 3.2.1.A, 3.2.5.A, 3.2.1.8.A, 3.2.1.8.B, 3.2.1.8.C, 3.2.2.1.C, 3.2.2.1.F, 3.2.2.2.A, 3.2.2.3.A, 3.2.2.3.C, 3.2.2.6.A, 3.2.2.8, 3.2.4.2.1, 3.2.4.3.1.1, 3.2.5.1.3, 3.2.5.2.1, 3.2.5.2.6, 3.2.5.2.8.E, 3.2.6.1, 3.2.6.1.A, 3.2.6.2.2.D, 3.3.6.3.F, 3.3.6.11.B, 3.5.1.1.1.B, 3.5.1.2.A, 3.5.1.2.B, 3.1.7.B.1, 3.7.1.3.B.2, 3.7.3.B.3., 3.7.2.4, 3.7.2.4.1.A, 3.7.2.4.6.B, 3.7.2.5.2.A, 3.7.2.6.D, 3.7.2.6.E.1, 3.7.2.5.4.A, 3.7.5.6.I.2, 3.7.2.5.6.L.2, 3.7.2.8.A.6, 3.7.2.8.F, and 3.7.2.8.G.
29	Revision 0	SD&TRD requirements sample: 3.7.2.2.5, 3.2.9.3.C.2, 3.2.9.D, 3.2.9.4.A, 3.2.9.4.B, 3.2.9.4.C, 3.2.9.4.D, 3.2.9.4.E, 3.3.6.4.A, 3.2.9.3.G.1.C, 3.2.9.3.G.1.d, 3.3.11, 3.7.B.3.

ATTACHMENT 4

Information Copies

of

Corrective Action Requests

OFFICE OF CIVILIAN
 RADIOACTIVE WASTE MANAGEMENT
 U.S. DEPARTMENT OF ENERGY
 WASHINGTON, D.C.

CAR NO. HO-93-031
 DATE: 3-17-93
 PAGE: OF
 QA

CORRECTIVE ACTION REQUEST

¹ Controlling Document Technical Document Preparation, OAP 3.5, Rev. 2		² Related Report No. HO-SR-93-07	
³ Responsible Organization M&O		⁴ Discussed With G. Carruth	
⁵ Requirement: OAP 3.5. 5.3.3a) states "For the technicals document, the preparer: a) develops a draft technical document using the TDP and requirements from source documents." Also, the "TDP for the Preparation of System Requirement Documents", Rev. 0 states in part "These documents will provide traceability between regulatory requirements and the physical design for CRWMS."			
⁶ Adverse Condition: Contrary to the stated requirements, the following conditions were identified: 1) Based upon a sample review of CRD requirements from Table 6.3, "CRD Cross Reference, Table 3", the following requirements from the CRD are not adequately addressed in the MGDS-RD: - CRD Requirement 3.5.1.1.A The last sentence in the CRD requirement was not carried down in the MGDS-RD - "Emphasis shall be placed on the detection of faults and failures. [Derived]." - CRD Requirement 3.5.1.2 The CRD describes test equipment calibration requirements. The equivalent requirement in the MGDS-RD describes radiation alarm systems. 2) <u>WMSR Vol. IV</u> - <u>MGDS-RD</u> <u>2.2.1(3.7)</u> - <u>3.3.11.5</u> The MGDS-RD requirement does not include the reference to (40 CFR, Chapter I s/c R)			
⁸ Does a significant condition adverse to quality exist? Yes <u> </u> No <u> x </u> If Yes, Circle One: A B C		¹⁰ Does a stop work condition exist? Yes <u> </u> No <u> x </u> ; If Yes - Attach copy of SWO If Yes, Circle One: A B C D	
¹¹ Response Due Date: Oct. 29, 1993			
¹² Required Actions: <input checked="" type="checkbox"/> Remedial <input checked="" type="checkbox"/> Extent of Deficiency <input checked="" type="checkbox"/> Preclude Recurrence <input type="checkbox"/> Root Cause Determination			
¹³ Recommended Actions: 1. Systematically review the flowdown of all requirements from the CRD to the MGDS-RD and correct any noted variances.			
⁷ Initiator James George <i>James George</i> Date <u>10/11/93</u>		¹⁴ Issuance Approved by: QADD Date	
¹⁵ Response Accepted QAR Date		¹⁶ Response Accepted QADD Date	
¹⁷ Amended Response Accepted QAR Date		¹⁸ Amended Response Accepted QADD Date	
¹⁹ Corrective Actions Verified QAR Date		²⁰ Closure Approved by: QADD Date	

THIS IS A RED STAMP

OFFICE OF CIVILIAN
 RADIOACTIVE WASTE MANAGEMENT
 U.S. DEPARTMENT OF ENERGY
 WASHINGTON, D.C.

⁶ CAR NO. TH-94-002
 DATE: 9-17-93
 PAGE: 1 OF
 QA

CORRECTIVE ACTION REQUEST

¹ Controlling Document: Technical Document Preparation, QAP 3.5, Rev 2 ² Related Report No.: HQ-SR-93-07

³ Responsible Organization: IV M&O ⁴ Discussed With: Tom Geer

⁵ Requirement:
 Paragraph 4.4.1 of the "TDPP for the Preparation of MGDS DRDs" states "in addition to interpreting statutory regulatory and other requirements as described above, derived, and performance requirements will be developed.... These will be based on Engineering and other analyses, inputs from peer reviews, calculations, etc. This documentation, together with supporting data, will serve as the source documentation for the requirement" (TDPP).

⁶ Adverse Condition:
 No objective evidence was found to indicate that detailed documentation exists for supporting derived requirements in the SD&TRD, the ESRD, and the SBTFRD.

⁷ Does a significant condition adverse to quality exist? Yes No
 If Yes, Circle One: A B C
⁸ Does a stop work condition exist? Yes No ; If Yes - Attach copy of SWO
 If Yes, Circle One: A B C D
⁹ Response Due Date: Oct. 29, 1993

¹⁰ Required Actions: Remedial Extent of Deficiency Preclude Recurrence Root Cause Determination

¹¹ Recommended Actions:
 1. Prepare detailed rationale for derived requirements.
 2. Modify the "Requirement Allocation Sheets" to include the rationale.
 3. Add TDPP paragraph 4.4.1 requirement in QAP 3.5 (RW-30).

¹² Initiator: Robt Howard Date: 10/15/93 ¹³ Issuance Approved by: Robert Blount Date: 10-15-93

¹⁴ Response Accepted: QAR Date ¹⁵ Response Accepted: QADD Date

¹⁶ Amended Response Accepted: QAR Date ¹⁷ Amended Response Accepted: QADD Date

¹⁸ Corrective Actions Verified: QAR Date ¹⁹ Closure Approved by: QADD Date

