MARTIN MARIETTA

ORNL/ER/Sub/91-UB147/5
QAP-X-91-ENGR-007

ENVIRONMENTAL RESTORATION PROGRAM

Quality Assurance Plan for the Design and Construction of Waste Area Grouping 6 Closure at Oak Ridge National Laboratory, Oak Ridge, Tennessee

MANAGED BY
MARTIN MARIETTA ENERGY SYSTEMS, INC.
FOR THE UNITED STATES
DEPARTMENT OF ENERGY

UCN-17560 (6 7-91)

Gilbert/Commonwealth, Inc.
Knoxville, Tennessee
and
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Oak Ridge, Tennessee

contributed to the preparation of this document and should not be considered an eligible contractor for its review.

ORNL/ER/Sub--91-UB147/5

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Environmental Restoration Division
ORNL Environmental Restoration Program

Quality Assurance Plan for the Design and Construction of Waste Area Grouping 6 Closure at Oak Ridge National Laboratory, Oak Ridge, Tennessee

Date Issued-March 1992

Prepared by
Gilbert/Commonwealth, Inc.
Knoxville, Tennessee
under subcontract 32K-UB147C

Prepared for
U.S. Department of Energy
Office of Environmental Restoration and Waste Management
under budget and reporting code EW 20

OAK RIDGE NATIONAL LABORATORY
Oak Ridge, Tennessee 37831-6285
managed by
MARTIN MARIETTA ENERGY SYSTEMS, INC.
for the
U.S. DEPARTMENT OF ENERGY
under contract DE-AC05-84OR21400

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Quality Assurance Plan for the Design and Construction of Waste Area Grouping 6 at Oak Ridge National Laboratory, Oak Ridge, Tennessee

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By affixing their signatures to this Approval Page, the signatories to this document signify that they have reviewed and are in agreement with its contents and intend to apply these contents to the conduct of the Waste Area Grouping 6 design and construction within their respective areas of responsibility.

APPROVAL SIGNATURES AND DATES

S. B. GARLAND II, PROGRAM PROJECT MANAGER — 3/20/92

P. A. SCHRANDT, ER QA SPECIALIST — 3/18/92

S. D. VAN HOESEN, ENGINEERING PROJECT MANAGER — 3/18/92

M. A. WOODY, ORNL ENGINEERING QA SPECIALIST — 3/18/92

DOE-OR PROJECT MANAGEMENT DIVISION — 3/25/92, 3/27/92, 3-27-92

QUALITY ASSURANCE EVALUATION [QAE]

Date April 16, 1991

Activity No.: ENGR-007	QAP No.: QAP-X-91-ENGR-007

Title: Waste Area Grouping (WAG) 6 Closure

Description:
WAG 6 will be closed according to requirements continued in a revised closure plan to be submitted in June, 1991.

INSTRUCTIONS: Complete checklist and assign a Q-Category. If ANY response is YES, a Category I or II QA Plan must be prepared. If ALL responses are NO, a Category III Plan may be prepared. In all cases a RATIONALE for the choice of category must be given. Minimum required attachments, if the QAE is to be used as part of the QA Plan, are an organization chart, a Functional Responsibilities Matrix, and a Quality Records list.

Quality Category Checklist	Yes	No
1. Does the project/activity involve design, construction, maintenance, or modification of engineered safety systems or structures?		X
2. Are there unique sponsor requirements?	X	
3. Are data or results of analyses to be used for design or construction of engineered safety systems or structures?..		X
4. Could failure result in the loss of an ORNL facility?		X
5. Could failure result in significant risk of inadvertent environmental, public, or personal exposure to biological, chemical or radiological hazards that would exceed the current authorized levels?	X	
6. Could failure cause significant adverse publicity that that could damage the laboratory's reputation?	X	
7. Could failure cause significant negative impact on an important or critical area of research?		X
8. Is there a significant risk of release of incomplete or inaccurate data?		X

Q-CATEGORY

II

Select I, II, or III

Rationale for Q-Category:
Due to the nature of the work and potential for inadvertent exposures of personnel, and/or environment, a Q-Category II has been assigned to the project.

A significant activity, item, material, or process is one that would cause a dramatic negative impact on cost, health, safety, environment, or the laboratory's facilities or reputation, or a dramatic violation of state or federal regulations should failure occur. An insignificant impact would not be expected to exceed consequences beyond those expected from minor, normal, day-to-day operational failures. Decisions regarding the significance of an impact due to failure must include consideration of cost, schedule, complexity, and safety.

ACTIVITY PHASE MATRIX

Indicate activity phases such as design, construction, procurement, operations, etc.

Phase	Responsible Manager	Scheduled Completion Date
Feasibility Study/ Design/Construction	S. B. Garland S. D. VanHoesen	FY 1997

QUALITY ASSURANCE PLAN MATRIX

Reference existing QA Plans that will be used to control the activity.

Activity Job Elements	QA Plan Title	QA Plan Number	Responsible Organization

Add attachments or explanations if necessary.

QAE Approval:

Division Responsible Manager S D Garland Date 4/17/91

Engineering Responsible Manager S D VanHoesen Date 4/16/91

QA Specialist M A Woodley Date 4-17-91

EXECUTIVE SUMMARY

This quality assurance (QA) plan has been developed in compliance with U.S. Department of Energy (DOE) Order 5700.6B, "Quality Assurance Requirements" and the Environmental Restoration Division Quality Assurance Program Plan, issued as report ES/ER/TM-4/R1. The outline of the plan is based on that of the Energy Systems *Quality Procedures Manual*, and it specifies that, beyond requirements explicitly identified in the plan itself, applicable Energy Systems standards and policy procedures identified in the *Quality Procedures Manual* shall be applied. The Energy Systems *Quality Procedures Manual* and *Martin Marietta Energy Systems, Inc., Policy Procedures Manual* shall be applied. The Energy Systems *Quality Procedures Manual* and, in turn, the ER Division QA plan are designed to meet the specifications of the American Society of Mechanical Engineers documents *Quality Assurance Program Requirements for Nuclear Facilities* (ASME NQA-1) and *Quality Assurance Program Requirements for the Collection of Scientific and Technical Information for Site Characterization of High-Level Nuclear Waste Repositories* (ASME NQA-3), as well as applicable DOE Orders. In addition to these documents, the ER Division QA plan also addresses *Quality Requirements for Nuclear Facility Applications* (ASME NQA-2) as well as Environmental Protection Agency (EPA) guidance established in *Interim Guidelines and Specification for Preparing Quality Assurance Plans* [EPA-600/4-83-004 (QAMS-005/80)] and *Risk Assessment Guidance for Superfund, Volume I: Human Health Evaluation Manual (Part A)* (EPA/540/1-89/002). The plan also provides for compliance with DOE Orders 4700.1 ("Project Management System"), 5000.3A ("Occurrence Reporting and Processing of Operations Information"), and 1324.2A ("Records Distribution"). The WAG 6 Closure QA Plan will be supplemented by subproject QA plans tailoring the requirements of the division plan to the needs and requirements pertaining to each subproject.

Specifically, the QA plan for Waste Area Grouping (WAG) 6 Closure identifies the chain of command for the execution of WAG 6 Closure QA requirements and the responsibilities of ER Division and Central Engineering personnel identified in that hierarchy. These personnel include the WAG 6 Closure Environmental Restoration (ER) Remediation Manager, Engineering Project Manager, QA Specialists, central ER Division program directors, site program managers, and other functional managers.

QUALITY ASSURANCE PLAN

A. SCOPE

The WAG 6 Closure QA Plan establishes the procedures and requirements to be implemented for control of quality-related activities for the WAG 6 Closure project that are subject to the application of the Martin Marietta Energy Systems, Inc. (Energy Systems) QA Program, the Environmental Restoration Division QA Program, and other quality requirements. These activities may be performed by Energy Systems organizations, a subcontractor to Energy Systems, an architect-engineer (A-E) under prime contract to the Department of Energy (DOE), and/or a construction manager under prime contract to DOE. This plan specifies the overall Energy Systems Engineering quality requirements for the project. The WAG 6 Closure QA Plan will be supplemented by subproject QA plans that will identify additional requirements pertaining to each subproject.

B. REFERENCES

- DOE Oak Ridge Field Office (DOE-OR) Order 5700.6B, "Quality Assurance"
- Martin Marietta Energy Systems, Inc., Policy, Standards, and Procedures Manual, Volume 4—Quality
- Oak Ridge National Laboratory Quality Assurance Manual
- Central Engineering Standards
- Central Engineering Procedures and Guidelines
- Specification Writer's Handbook, K/D 5364
- Oak Ridge National Laboratory Occurrence Reporting System Reference Manual, ORNL/M-1256

C. PROJECT DESCRIPTION

Waste Area Grouping (WAG) 6 is a 68-acre site southwest of the Bethel Valley facilities at the Oak Ridge National Laboratory (ORNL). It consists of three remediation sites: Solid Waste Storage Area (SWSA) 6, Explosive Detonation Trench, and Emergency Waste Basin.

SWSA 6 was opened in 1969 as a shallow land burial site for low-level radioactive waste. It was used for disposal of radioactive waste in open trenches for the low-level-activity waste and in auger holes for the higher-activity wastes. In May 1986, operations at SWSA 6 were temporarily stopped because of the finding that hazardous waste, as defined by the Resource Conservation and Recovery Act (RCRA), had also been disposed of in some areas of the SWSA along with the radioactive waste. Following implementation of operating procedures to ensure that no additional RCRA wastes were disposed of at this location, operation of SWSA 6 for the disposal of radioactive wastes was resumed in July 1986.

The finding that RCRA hazardous waste had been disposed of in the overall boundary of SWSA 6 led to an interim closure of its RCRA-regulated areas and the submission of a Closure Plan for SWSA 6 in 1988.

D. NQA-1 APPLICABILITY

The Procedure Modular Profile (shown on the following pages) gives an overview of the content of the quality assurance (QA) plan. It identifies the elements of NQA-1 that are applied to a specific project or activity. The column "Implementing ENG/MMES QA Procedures" is a list of all Energy Systems Engineering and QA Procedures that could be applied to a specific element of NQA-1. However, this does not mean that all of the implementing procedures are used. The column "Project-Specific Procedures" is a list of the procedures to be used to control the quality-related activities of the project. Only the procedures identified in this column are implemented during the project.

The matrix is a way of identifying the procedures to be followed during the course of the project. However, in some cases the QA Plan will call out additional requirements and/or deletions to specified procedures. These additions and/or deletions will be specified within the body of the QA Plan.

Procedure Modular Profile

CAP No.: QAP-X-91-ENGR-007
TITLE: Waste Area Grouping 6 Closure Design and Construction

NQA-1 BASIC ELEMENT	TO BE APPLIED (Y/N)	IMPLEMENTING ENG/MMES QA PROCEDURES(S)	PROJECT SPECIFIC PROCEDURES	SEE INDICATED QA PLAN SECTION
1. Organization	Y	ESS.1.0 ESP.1.1 EP-A-06 EP-A-11	EP-A-06 EP-A-11	Attachments 1 and 2
2. Quality Assurance Program	Y	ESS.2.0 ESP.2.2 ESP.2.5 ESP.2.6 ESP.2.7 GP-5 EP-A-32 EP-B-31 EP-E-04 EP-E-10	GP-5 ESS.2.0 EP-E-04 ESP.2.6	Element 2: Quality Assurance Program
3. Design Control	Y	EP-A-12 EP-B-03 EP-B-16 EP-B-22 EP-B-23 EP-B-35 EP-B-36 EP-C-02 EP-C-04 EP-C-05 EP-C-06 EP-C-07 EP-C-17 EP-C-18 EP-C-22 EP-C-23 EP-C-25 EP-C-27 EP-C-29 EP-C-35 EP-D-02 EP-D-09 EP-E-05 EP-E-07 EP-E-12 ES-O.1-2 K/D-5364	EP-B-16 EP-C-02 EP-C-07 EP-C-17 EP-C-18 EP-C-27 EP-C-35 EP-D-02 EP-E-07 EP-E-12 QA-L-3-102 QA-L-3-101	Element 3: Design Control Attachment 3: A-E Design Review Record Instructions

Procedure Modular Profile (cont.)

CAP No.: QAP-X-91-ENGR-007
TITLE: Waste Area Grouping 6 Closure Design & Construction

NQA-1 BASIC ELEMENT	TO BE APPLIED (Y/N)	IMPLEMENTING ENG/MMES QA PROCEDURES(S)	PROJECT SPECIFIC PROCEDURES	SEE INDICATED QA PLAN SECTION
4. Procurement Document Control	Y	ESS.4.0 EP-C-22 EP-C-23 EP-C-25 EP-C-27 K/D-5364	EP-C-22 EP-C-23 EP-C-25 K/D-5364	Element 4: Procurement Document Control
5. Instructions, Procedures, and Drawings	Y	ESS.5.1 EP-A-01 EP-A-13 EP-C-01 EP-C-03 EP-C-13 EP-C-30	EP-C-01 EP-C-03 EP-C-13 EP-C-30	Element 5: Instructions, Procedures, and Drawings
6. Document Control	Y	ESS.6.1 EP-A-13 EP-B-16 EP-C-01 EP-C-13 EP-C-17 EP-C-18 EP-C-28 EP-D-09	EP-A-12 EP-B-16 EP-B-36 EP-C-13 EP-C-18 EP-C-28 X-01	Element 6: Document Control Attachment 4: QA Records and Controlled Documents List
7. Control of Purchased Items and Services	Y	ESS.7.0 EP-C-22 EP-C-30 EP-D-11 EP-D-13 EP-D-14 EP-D-20	EP-C-22 EP-D-11	Element 7: Control of Purchased Items and Services
8. Identification and Control of Items	Y	ESS.8.1 EP-D-01 EP-D-11	ESS.8.1	Element 8: Identification and Control of Items
9. Control of Processes	Y	ESS.9.1 EP-D-01	ESS.9.1	Element 9: Control of Processes
10. Inspection	Y	ESS.10.0 EP-B-36 EP-D-01 EP-E-12 EP-0.4-1	EP-E-12 ES-0.4-1	Element 10: Inspection

Procedure Modular Profile (cont.)

CAP No.: QAP-X-91-ENGR-007
TITLE: Waste Area Grouping 6 Closure Design & Construction

NQA-1 BASIC ELEMENT	TO BE APPLIED (Y/N)	IMPLEMENTING ENG/MMES QA PROCEDURES(S)	PROJECT SPECIFIC PROCEDURES	SEE INDICATED QA PLAN SECTION
11. Test Control	Y	ESS.11.1 EP-D-01 EP-E-12 ES-0.4-1	EP-E-12 ES-0.4-1	Element 11: Test Control
12. Control of Measuring and Test Equipment	Y	ESS.12.0 EP-E-12	ESS.12.1	Element 12: Measuring and Control of Test Equipment
13. Handling, Storage, and Shipping	Y	ESS.13.1 EP-C-22 EP-D-11	ESS.13.1	Element 13: Handling, Storage, and Shipping
14. Inspection, Test, and Operating Status	Y	GP-24 EP-C-22 EP-D-05 EP-E-09	GP-24 EP-E-09	Element 14: Inspection, Test, and Operating Status
15. Control of Nonconforming Items	Y	ESS.15.1 ESP.15.2	EP-D-10	
16. Corrective Action	Y	ESS.16.0 ESP.16.1 ESP.16.2 ESP.16.4	QA-L-16-102 ORNL/M-1256	Element 16: Corrective Action
17. Quality Assurance Records	Y	ESS.17.0 EP-A-12 EP-B-36 EP-C-25		Attachment 4 Element 17: Quality Assurance Records
18. Audits	Y	EP-A-29 ESS.18.0 ESP.18.1	EP-A-29	Attachment 5: Surveillance Plan
19. Software	N	ESS.ADP.1 EP-E-11	EP-E-11	

E. PROJECT-SPECIFIC ADDITIONS AND DELETIONS

Element 1: Organization

The Maintenance and Operations (M&O) contractor, Energy Systems, shall provide oversight for the purposes of ensuring that the Remedial Actions (RA) operations interface smoothly with plant operations; that all plant systems required to support the RA effort are available when needed; and that plant environmental, safety, and health procedures are followed. Each subproject shall develop a project organization chart that identifies subproject personnel and their position within the subproject.

Element 2: QA Program

The QA program described herein is responsive to DOE-OR Order 5700.6B, "Quality Assurance"; Energy System Policy Procedure GP-5, "Quality Assurance Program"; Energy System Quality Procedure ESS.2.0, "Quality Assurance Program"; ESP.2.6, "Quality Assurance Planning"; and the procedures referenced in the modular profile.

Work procedures shall be accessible under the coordination of the Engineering Project Manager and/or the ER Remediation Manager (or their designees) during normal business hours for purposes of audit, surveillance, inspection, or visit by authorized QA representatives.

Personnel shall be indoctrinated, trained, qualified, and certified as necessary for project-related activities.

Element 3: Design Control

The technical baseline for the project shall be documented via an internal correspondence or other written documentation. The technical baseline shall be developed and maintained current with the project scope by the ER Remediation Manager, with the concurrence of the Engineering Project Manager. All changes to the technical baseline shall be documented and approved by the same organizations that approved the original technical baseline.

Technical design decisions used as a basis for equipment selection and specifications shall be supported by calculations. These calculations shall be reviewed and approved by the appropriate Responsible Engineering Designer (RED), at a minimum.

Computer programs used for analyses shall have been verified to produce a correct solution of the encoded mathematical model, and mathematical models shall have been shown to produce a valid solution to the physical problem.

All design drawings, regardless of their origin, shall be controlled in accordance with Engineering Procedure EP-C-18, "Design Document Change Control." Each drawing shall identify *change control system 2* within the document change control block.

A Project Review Plan shall be prepared for the project by the Engineering Project Manager (or his designee) in accordance with Engineering Procedure EP-C-17, "Design

Verification." The Engineering Project Manager shall identify all key reviewers, as applicable to the design submittal. At a minimum, the ER Remediation Manager (or his designee), Principal Engineer, Project Engineer, and Engineering QAS shall be identified as key reviewers.

Design reviews shall be conducted at 50% and 90% design completion. All design review comments shall be documented using the "Engineering Design Review Record," UCN-12149 and UCN-12149A, in accordance with Engineering Procedure EP-C-17, "Design Verification," and Attachment 3, "A-E Design Review Record Instructions," UCN-12149 and UCN-12149A. Comment resolution shall be documented on the form and distributed to the comment originators, ER Remediation Manager, Engineering QA Specialist (QAS), and ER QAS, at a minimum.

Prior to issuance of Certified for Construction (CFC) validation, all drawings shall undergo a QA review to verify that they meet QA requirements. If any corrections are necessary, the Engineering QAS shall sign the drawing after all corrections are made. QV decals shall be used as specified in the WAC 6 Closure subproject QA plans.

During construction, deviations from CFC design drawings shall be approved and documented using the *ORNL Deviation Report*, UCN-5458A. The Deviation Request shall be approved by the ER Remediation Manager, Engineering Project Manager, Principal Engineer, and Engineering QAS, at a minimum. Telephone approval from the Engineering Project Manager, ER Remediation Manager, or Principal Engineer is acceptable to avoid delaying construction. Telephone approval shall be documented by using a Deviation Request and obtaining approval signatures from all individuals within two working days. The Engineering QAS shall assign a unique deviation request number and enter the data into a tracking system for deviations.

Requirements and specifications conveyed to other contractors or Energy Systems organizations shall identify the QA records required. The Engineering Project Manager shall indicate the QA requirements to be included in the Equipment Specification for each item or service procured.

Test plans, procedures, and specifications will be reviewed, approved, and included in the design control systems for this project.

Element 4: Procurement Document Control

Applicable subcontractor procedures, QA plans, and procurement documentation shall be reviewed and approved by the ER Remediation Manager and the Engineering Project Manager, at a minimum.

Element 5: Instructions, Procedures, and Drawings

All design drawings, instructions, or procedures, regardless of their origin, shall contain the Energy Systems or DOE title block, document change control block, and QV decal (as specified in Element 3).

Element 6: Document Control

The WAG 6 Closure documents to be controlled are listed in Attachment 4, QA Records and Controlled Documents List, of this plan.

The ER Remediation Manager shall ensure that a document control system is established and maintained throughout the life of the WAG 6 Closure project. Record Copy (RC) materials generated by the project shall be routinely submitted to the ER Document Management Center (DMC) for retention by the ER Remediation Manager (or his designee).

The ER Remediation Manager shall ensure that documents designated as "controlled" are reviewed for adequacy, approved for release by authorized personnel, and distributed to and used at the appropriate locations. When revised, the designated documents shall be reviewed and approved by the same organizations that provided the original review and approval, unless other organizations are specifically designated by the ER Remediation Manager.

Element 7: Control of Purchased Items and Services

The QA requirements as contained in the Equipment Specifications shall be incorporated into the Terms and Conditions section of the purchase order for each procurement.

Element 8: Identification and Control of Items

Requirements for identification and traceability of items shall be included in procurement specifications and construction contract documents.

The geotechnical samples shall be entered into a geologic log. Each sample shall have a unique sample number. Traceability between sample location, testing results, and geologist's log shall be maintained. All geotechnical test results shall be documented by the technician performing the test. The technician responsible for collection and/or analysis shall sign and date each entry. A copy of the completed log and all test results shall be transmitted to the Engineering Project Manager and ER Remediation Manager for record purposes.

Element 9: Control of Processes

The personnel taking and testing the geotechnical samples shall be trained in approved procedures. Sampling and testing procedures shall be provided to the Engineering Project Manager and ER Remediation Manager for review and concurrence and for record purposes.

Health Physics and Industrial Hygiene personnel shall be trained in applicable procedures and shall be certified as required.

Element 10: Inspection

The Remedial Design Contractor (RDC), Ebasco Services, Inc., shall provide Title III field services. These services will begin with the placement of the first purchase order or

construction contract and end with the acceptance of the project. The requirements for conducting the inspection activities are detailed in Engineering Procedure EP-D-01, "Title III Engineering Services." The RDC will ensure design compliance with the Record of Decision and RA Work Plan.

The Inspection organization shall provide documented procedures and instructions, trained and qualified personnel, and properly operating and calibrated equipment.

Inspection procedures and instructions and personnel qualifications shall be reviewed and approved by the Engineering Project Manager (or his designee), at a minimum.

Element 11: Test Control

The Testing organization shall provide documented procedures and instructions, trained and qualified personnel, and properly operating and calibrated inspection equipment.

Test procedures and instructions shall be reviewed and approved by the Engineering Project Manager and ER Remediation Manager (or their designees), at a minimum.

Element 12: Control of Measuring and Test Equipment

The Testing organization shall provide documented procedures and instructions for the control and calibration of tools, gages, instruments, and other measuring and test equipment used for performing quality-related activities. Testing equipment will be periodically calibrated and adjusted in accordance with the procedures and instructions to maintain accuracy within specified limits.

Calibration procedures and instructions shall be reviewed and approved by the Engineering Project Manager and ER Remediation Manager (or their designees), at a minimum.

Element 13: Handling, Storage, and Shipping

Requirements for handling, storage, and shipping of procured items shall be included in the procurement and construction specifications.

Requirements for the handling, storage, and shipping of sample materials and equipment shall be performed in accordance with established instructions and procedures to prevent loss or damage and to minimize deterioration.

Element 14: Inspection, Test, and Operating Status

The Title III Engineer (Construction Engineer) shall verify and document that materials, components, and equipment specified in the construction specifications have successfully passed all required tests and inspections prior to installation.

An Operational Readiness Review shall be conducted after completion of design, at a minimum. One will be conducted at completion of construction, if deemed necessary by the Engineering Project Manager, ER Remediation Manager, and Engineering QAS. At a

minimum, the Operational Readiness Team shall consist of the Engineering Project Manager, ER Remediation Manager, Engineering QAS, and Waste Management representative or designee(s).

Element 16: Corrective Actions

All corrective actions, regardless of their origin, shall be documented on the ORNL Corrective Action Report and Status form. All corrective actions shall be handled and escalated in accordance with ORNL QA Procedure QA-L-16-103, "Corrective Action."

The Occurrence Report shall be used to document quality-related problems, except for nonconformances, in accordance with Energy Systems General Policy Procedure GP-13, "Occurrence Reporting System."

Nonconformances shall be handled and documented in accordance with procedures identified in Element 15 of the "Procedure Modular Profile."

Element 17: Quality Assurance Records

The following additional requirements are applied to RC documents:

- Test and inspection records and results to be maintained as RC material shall be designated in the Construction Project Test Summary. The originator of documents generated within Energy Systems Engineering shall identify RC material in accordance with the Project Records Plan (PRP). The Energy Systems Engineering recipient of documents generated outside Engineering shall identify RC material in accordance with the PRP.

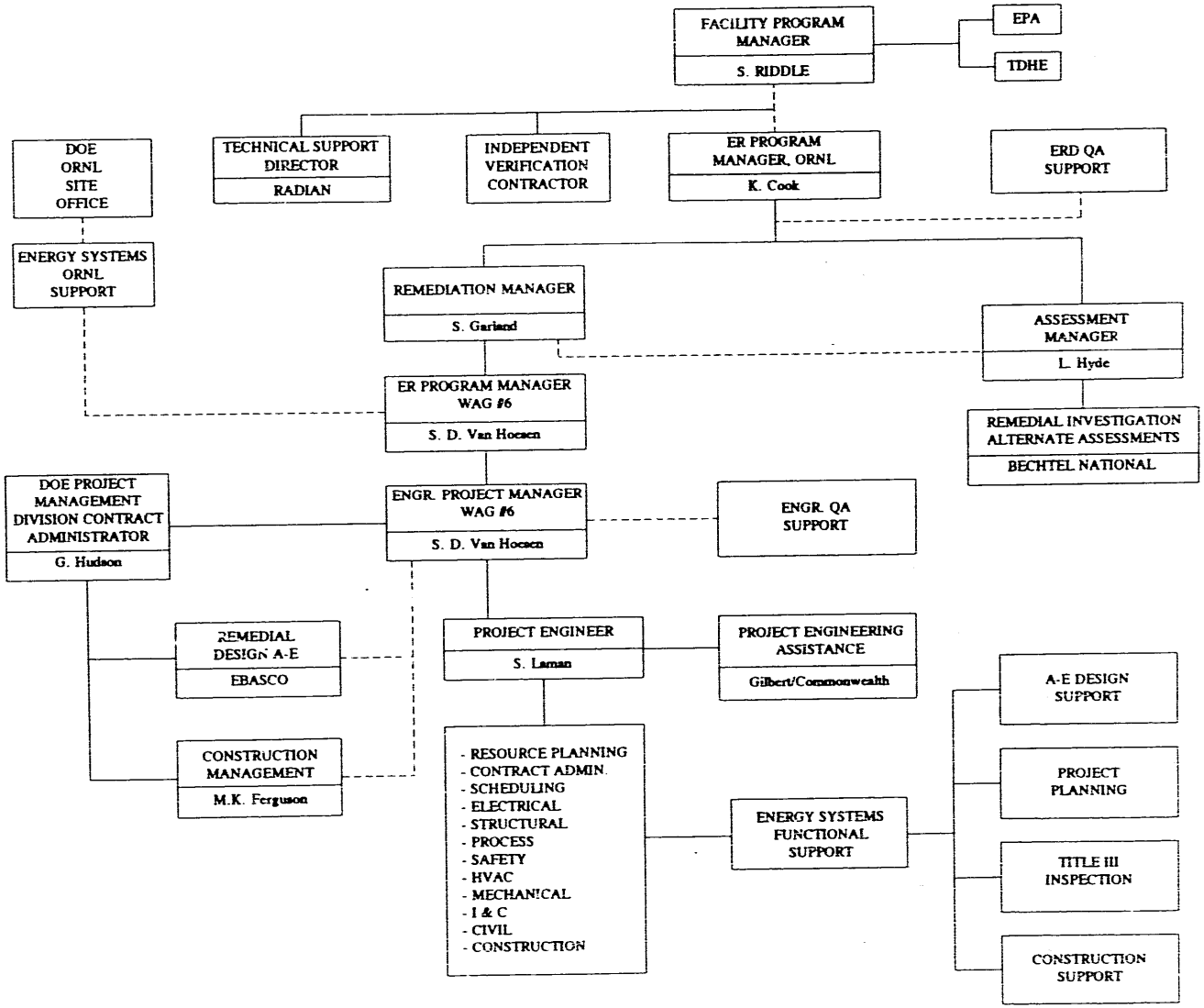
- Duplicate records, as identified in Attachment 4, that provide evidence of quality shall be maintained by the personnel/organization identified as the point file. The records sets shall be stored at locations sufficiently distant from one another to prevent damage to both sets in the event of unforeseen circumstances. The records shall be reviewed for legibility and completeness; protected against deterioration, damage, or loss; retrievable in a timely manner; and access controlled.

- Project working files shall be turned over to the appropriate storage facilities by the ER Remediation Manager and Engineering Project Manager at completion of the project. The ER Remediation Manager shall turn over the final design documents to the ER DMC.

The ER Remediation Manager shall receive a copy of all RC materials generated by the project. The ER Remediation Manager shall be responsible for transmitting all applicable documents to the ER DMC.

ATTACHMENT 1

ORGANIZATION CHART



OVERALL PROJECT DIRECTION CHART

PAI REV 02.18.92
WAGSPIOL.DRW J CD

ATTACHMENT 2

FUNCTIONAL RESPONSIBILITY PROFILE

Activity No. ENGR-007

Title: Waste Area Grouping 6 Closure Design & Construction

P = Prepare/Perform A = Approve I = Input R = Review S = Surveillance C = Concurrence Blank - Not Required	ER REMEDIATION MANAGER	ENG PROJECT MANAGER	PRINCIPAL ENGINEER	REDS	CONST ENG	VENDOR/SEL	ORNL QA MGR	QE&I	ENGR QAS	ER QAS	DOE ER	DOE PMD
Documents/Actions												
QA Plan	I/R/A	R/A	R	R	R				P/A	R/A		R
Design Drawings, Specifications, and Calculations	I/A	I/A	I/R	R	R				R/C			R
Design Change Requests	A	A	P						A			R
Deviation Requests	I/A	I/A	I/A	I	P/A				R/A			
Purchase Requisitions[1]		R	P	I					R[2]			
Vendor/Seller QA Plans	R/A	R/A	R			P			R			
Nonconformance Reports	I/A	I/A	I/R				S		R/A			
Functional/Pre-Oper. Tests	R/A	P/A	A	I	S				R	R		
Operational Readiness Review Plan	I/P	I							I			
Surveillance Reports	P	P/A			P		S		R/A			
Receiving Inspection								P/A				
Technical Baseline	P/A	R/A	R								C	C

[1]If procured by MMES
[2]If necessary.

ATTACHMENT 3

A-E DESIGN REVIEW RECORD INSTRUCTIONS
UCN-12149 and 12149A

UCN-12149 INSTRUCTIONS

1. *PROJECT TITLE*: Obtained from the Engineering Transmittal. Will be the same as indicated on the "Project Title" line.

2. *JOB TITLE*: Obtained from the Engineering Transmittal. Will be the same title as on the "Job Title" line.

A-E TRANSMITTAL:

3. *No.*: The transmittal number initiated by the A-E. If this is not provided on the form, it may be found on the A-E's letter accompanying the design review package. If this letter is not available, place "N/A" in the space provided.

4. *Date*: The date the transmittal was initiated by the A-E. If this information is not available, place "N/A" in the space provided.

5. *Log No.*: The Engineering transmittal number which has been assigned to the package. This information may be found on the Engineering transmittal in the right hand corner.

6. *Received*: The date the material was received by the reviewer.

7. *Due Out*: The date the review comments are due to the indicated person. The date and person to return comments to may be found on the Engineering transmittal in the right hand column.

DESIGN REVIEW RECORD:

8. *PLANT*: The plant related to the project (i.e., ORNL, K-25, Y-12).

9. *A-E*: The A-E responsible for the design package (i.e., G/C). If package is an internal design, MMES is identified.

10. *DEPT*: Organization which the reviewer represents.

ATTACHMENT 3 (cont.)

11. *STATUS REVIEW*:	The status of the review. Status information can be found in the job title of the Engineering transmittal.
12. *ITEM NO.*:	The numerical value given to the comments by the reviewer.
13. *DRAWING OR SPEC. NO. & PARAGRAPH*:	The appropriate drawing number and/or specification number which relate to your comments. If comment concerns a specification, the paragraph number is also needed. If more than one drawing has the same comment, the drawings may be listed together.
14. *COMMENTS*:	Reviewer's comments in relation to the drawings and/or specifications identified in the column to the left.
15. *A-E ACTIONS*:	Indicates the action proposed by the A-E or designer to resolve the indicated comments. This section is filled in by the A-E.
16. *REVIEWED BY*:	Handwritten signature and date indicating the reviewer and the date the review occurred.
17. *APPROVED for COMPANY*:	Handwritten signature and date of the Engineering Project Manager. The reviewer signs and dates the form after the reviewer has made his comments and prior to submission of the review comments package to DOE-OR for transmission to the A-E.
18. *APPROVED: DOE-Engineering*:	Handwritten signature and date of the DOE-OR Project Manager or Representative. DOE-OR signs and dates after receipt from Energy Systems and prior to submission of package to the A-E.
19. *A-E*:	Handwritten signature and date of the A-E Project Manager. The A-E signs and dates after "A-E Action" is indicated and prior to the re-submission to DOE-OR Project Manager.
20. *PAGE-- OF --*:	Indication of the current page number and the total number of comment pages.

ATTACHMENT 3 (cont.)

U.S. DEPARTMENT OF ENERGY OAK RIDGE OPERATIONS	DESIGN REVIEW RECORD
	Plant
Project Title _____	A-E
Job Title _____	Dept.
A-E Transmittal _____ No. _____ Date _____ Log No. _____ Received _____ Due Out	Status Review

ITEM NO.	DRAWING OR SPEC. NO. & PARAGRAPH	COMMENTS	A-E ACTION

Reviewed By Date	Approved for Company Date Operating Contractor	Approved Date DOE-Engineering	A-E

UCN-12149
(12 8-78)

Page ___ of ___

ATTACHMENT 3 (cont.)

UCN-12149A INSTRUCTIONS

1.	*PROJECT TITLE*:	Obtained from the Engineering Transmittal. Will be the same as indicated on the "Project Title" line.
2.	*JOB TITLE*:	Obtained from the Engineering Transmittal. Will be the same title as on the "Job Title" line.
3.	*DATE*:	The date the comments were made.
4.	*TRANSMITTAL NO.*:	The Engineering transmittal number which has been assigned to the package. This information may be found on the Engineering transmittal in the right hand corner.
5.	*ITEM NO.*:	The numerical value given to the comments by the reviewer.
6.	*DRAWING OR SPEC. NO. & PARAGRAPH*:	The appropriate drawing number and/or specification number which relate to your comments. If comment concerns a specification, the paragraph number is also needed. If more than one drawing has the same comment, the drawings may be listed together.
7.	*COMMENTS*:	Reviewer's comments in relation to the drawings and/or specifications identified in the column to the left.
8.	*A-E ACTIONS*:	Indicates the action proposed by the A-E or designer to resolve the indicated comments. This section is filled in by the A-E.
9.	*PAGE -- OF --*:	Indication of the current page number and the total number of comment pages.

ATTACHMENT 3 (cont.)

U.S. DEPARTMENT OF ENERGY OAK RIDGE OPERATIONS	DESIGN REVIEW RECORD (Continuation Sheet)

Project Title _____ Date _____

Job Title _____ Transmittal No. _____

ITEM NO.	DRAWING OR SPEC. NO. & PARAGRAPH	COMMENTS	A-E ACTION

UCN-12149A
(12 8-78)

Page ___ of ___

ATTACHMENT 4

QA RECORDS AND CONTROLLED DOCUMENTS LIST

QA RECORDS AND CONTROLLED DOCUMENTS LIST

QAP No.: QAP-X-91-ENGR-007	Title: WASTE AREA GROUPING 6 CLOSURE

Instructions: List records name/title, Master and Duplicate File Points (building and room number) and name of person responsible. List the Retention Period (RP): L for lifetime records, or if non-permanent indicate the number of years it is to be maintained. Indicate status as QA Record and/or Controlled document. Controlled indicates controlled distribution.

RECORD NAME/TITLE OR DOCUMENT NUMBER	RP	MASTER FILE POINT	DUPLICATE FILE POINT[3]	QA RECORD YES	QA RECORD NO	CONTROLLED YES	CONTROLLED NO
QA Plan	L	Engineering Services Document Control Center Bldg. 1000, Rm 207	Engineering Services Document Control Center Bldg. 9739, Rm 175	X		X	
Nonconformance Reports	05	"	"	X			X
Readiness Review Reports	L	"	"		X	X	
Occurrence Reports	05	"	"	X			X
Surveillance Reports	05	"	"	X			X
Audit Reports	05	"	"	X			X
Corrective Action Reports[1]	05	"	"	X			X
Test/Inspection Reports	L	"	"	X		X	
As-Built Drawings	L	"	"	X		X	
Deviation Requests	05	"	"	X		X	
Design Changes[2]	L	"	"	X		X	
Equipment Specs/Data Sheets	L	"	"	X		X	
Construction Project/Test Summary	L	"	"	X		X	
Log Book/Sample Document	L	"	"	X			X

NOTES: 1 = After Completion
2 = Until Incorporated
3 = ER Document Management Center

ATTACHMENT 5

SURVEILLANCE PLAN

QA Plan No.: QAP-X-91-ENGR-007	Activity No.: ENGR-007
Title: WASTE AREA GROUPING 6 CLOSURE DESIGN AND CONSTRUCTION	

Area/Subject to be Surveilled	*Frequency	Responsible Person
• Design Review Records	Once during Project Life	Engineering QAS M. A. Woody
• Project Records in Engineering Services	Twice during Project Life	Engineering QAS M. A. Woody
• Project Records in Environmental Restoration Document Management Center	Twice during Project Life	ER QAS P. A. Schrandt
* Minimum frequencies for each WAG-6 subproject. Each subproject shall identify additional surveillance areas as applicable to specific subproject activities.		

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