



Department of Energy CONTROL

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General Manager
Rockwell Hanford Operations
Richland, Washington

Dear Sir:

QUALITY ASSURANCE AUDIT, BASALT WASTE ISOLATION PROJECT (BWIP), JANUARY 21-28, 1986

Results of the recent DOE/RL QA audit of the BWIP records management system are hereby transmitted for Rockwell's action.

The audit was restricted to controls that could be assessed on the basis of evidence available through Rockwell's Records Management resources. In particular, it did not examine how effective Project participants are in submitting necessary records for processing or submittal timeliness. Those topics will be covered during upcoming audits of Project task areas.

Controls affecting the formal project record after receipt of records by Rockwell's Records Management organization are adequate and effective, with the exception of the physical facility for permanent record storage and protection of one-of-a-kind records during processing. Exemplary practices were observed relative to personnel knowledgeability and dedication, record processing turnaround time, and independent verification of data entry.

The audit report and adverse finding sheets are enclosed. Please provide responses to the adverse findings not later than February 28, 1986. Responses should identify root causes, describe proposed corrective action and indicate the date (or Project milestone event) by which each element of corrective action is expected to be implemented.

Very truly yours,

ORIGINAL SIGNED BY
O. L. OLSON

O. L. Olson, Director
Basalt Waste Isolation Division

BWI:JHR

Enclosure

cc, w/encl:
L. R. Fitch, Rockwell
V. Dale Hedges, NRC
J. Knight, DOE-HQ

WM Record File
40-1

WM Project 10
Docket No. _____
PDR
LPDR

Distribution:
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Audit Report No.: DOE/BWID 8601
Audit Subject: BASALT WASTE ISOLATION PROJECT RECORDS MANAGEMENT
Audit Dates: January 21-28, 1986

INTRODUCTION

This audit addressed adequacy and effectiveness of records management for the Basalt Waste Isolation Project (BWIP). Classification of documents by retention items and ultimate disposal of records were not audited. The Project Records Management Plan establishes a policy of permanent retention of all records, and the resulting insurance against erroneous classification is considered a significant benefit to the Project. Participant performance in the preparation, collection and safeguarding of documents destined to become records and assurance that all required documentation is generated by participants were not audited; they will be included in the scope of planned audits of activity areas.

The purpose of the records management system is to provide an authentic, complete record of Project rationale, decisions, analyses and conclusions. As Integrating Contractor, Rockwell Hanford Operations is responsible for establishing the Project records management system and managing its implementation. Rockwell's management responsibility includes ensuring that Project participants understand and properly execute their functions within the system. This audit was designed to evaluate the degree to which the purpose of the records management system is being achieved (or can be achieved as the system is defined and implemented).

Attachment 1 to this report contains necessary administrative information, such as the list of audit team members, attendees at the pre- and post-audit meetings, personnel contacted, etc. Attachment 2 discusses the audit approach, assumptions and basic methods. Details of evidence examined and conditions observed are contained in the audit working file.

FOLLOW-UP

BWI Project records management system deficiencies identified in previous DOE audits related to responsibilities in the preparation and submittal of records by Project participants, including Rockwell functional organizations. As participant activities were not addressed during this audit, effectiveness of corrective action lay outside the scope of the audit and will be accomplished as part of upcoming audits.

Interviews and observation of work indicated aggressive attention on the part of the audited organizations to the continuing audit and surveillance efforts of Rockwell QA.

EXEMPLARY PRACTICES

1. Personnel of Rockwell's Records Management organization are outstanding in their knowledge of their own responsibilities and those of their colleagues, and they display an unusual degree of alertness and dedication to Project objectives.
2. Turn-around time from receipt of submittals to verification that the microform record is acceptable compares favorably with that achieved by similar operations throughout the technical community.
3. The practice of independent verification of indexing data entries against the hard copy records as part of record processing is a notable precaution that is not observed in all record processing operations. Rockwell is to be commended both for the practice and for the competence with which it is performed.

FINDINGS

OVERALL SYSTEM

The audited controls within the overall records management system were found to be adequate and effective with the exceptions identified below for Control 17-7, CONTROLS TO PREVENT LOSS OR DAMAGE TO RECORDS DURING PROCESSING, Control 17-11, MEASURES FOR PRESERVATION OF RECORDS, and Control 17-13, PERMANENT RECORD STORAGE FACILITY. Records Management supervision and personnel displayed an unusual degree of enthusiasm for their work and dedication to Project objectives. Effectiveness has improved significantly in the recent past, and areas that are recognized as candidates for further improvement are being addressed vigorously.

CONTROL 17-1, DESIGNATION OF DOCUMENTS/DOCUMENT TYPES THAT ARE TO BECOME RECORDS

Purpose

This control is to ensure that participants know what documents and document types are to be submitted for incorporation in the formal Project record and to define the boundaries of the BWIP record.

Finding

Preparation and publication of the list of required Project records is effective and complies with system requirements.

Effectiveness of participants in ensuring that all documents of the types identified by the authorized list will be evaluated during scheduled audits of active task areas.

CONTROL 17-2, RECORD VALIDATION/AUTHENTICATION

Purpose

This control is intended to ensure that documents incorporated into the formal Project record are authentic - i.e., that they truly record Project activities and that they were generated by authorized persons or organizations.

Finding

The control is judged to be effective. All items examined met the defined criteria for authentication.

CONTROL 17-3, EXISTENCE OF A RECORD INDEX

Purpose

The requirement for a record index is to provide a workable way to know what the formal record contains and where individual records are within the total record.

Finding

This control is effective. The data entry system was found to accomplish the required functions of a "record index".

CONTROL 17-4, IDENTIFICATION OF INDIVIDUAL RECORDS TO THE ITEM(S) OR ACTIVITY (IES) WITH WHICH THEY ARE ASSOCIATED

Purpose

The control is to ensure the individual record can be put into correct project context in subsequent use of, or reference to, the formal record, and as a means of providing retrieval access to the body of records associated with particular items or activities.

Finding

The control is effective; of several hundred documents examined, no instances were observed in which a document could not be identified with the item(s) or activity(ies) with which it was associated.

CONTROL 17-5, CLASSIFICATION OF RECORDS BY RETENTION TIME

NOTE: This control, while a normal part of many records management systems, is not necessary if conditions warrant permanent retention of all records. The fact that much of the work associated with the BWI Project is state-of-the-art gives rise to a potential that some records initially judged eligible for disposal after relatively short retention may ultimately be determined important. The current policy seems a prudent way to prevent such potential problems. The audit did not address this topic.

CONTROL 17-6, CONTROLLED CORRECTIONS OF INFORMATION ALREADY IN THE RECORD

Purpose

This control is intended to prevent the use of information that has been determined to be in error, to prevent unauthorized or fraudulent manipulation of the record, and to ensure that corrections to the record are made only after competent review and approval.

Finding

The control is effective.

CONTROL 17-7, CONTROLS TO PREVENT LOSS OR DAMAGE TO RECORDS DURING PROCESSING

Purpose

This control is necessary to ensure that documents submitted for incorporation in the formal record actually survive this vulnerable interval in their lives.

Finding

This control is effective, except that one-of-a-kind documents (such as radiographs, strip charts, etc.) would be vulnerable to such events as major fire in the processing area between receipt and forwarding to permanent storage (QAF #86-01-01). While Record Management Center policy is to complete the necessary indexing and data entry so such records are forwarded the same day as received and responsible personnel fully recognize the attendant priority, the work area does not afford full protection from disaster.

CONTROL 17-8, RECEIPT CONTROLS

Purpose

These controls are intended to ensure (a) that all documents intended for incorporation in the formal record actually reach the processing center, and (b) that submitted documents are capable of producing usable records.

Finding

Former shortcomings in receipt control (i.e., failure some Project participants to submit the required transmittal forms - "record manifests" - with their documents, submittal of inadequately completed transmittal forms, and failure to identify on such forms the number of sheets or pages of documents submitted) have been resolved by direct action on the part of Records Management. Submittals that are deficient in one or more of these respects are now not accepted for processing until the responsible participant corrects the deficiency. The controls are now effective, but see RECOMMENDATIONS AND CONCERNS.

CONTROL 17-9, STATUS OF DOCUMENTS DURING PROCESSING INTO THE RECORD

Purpose

This control is intended to ensure that records submitted for processing are not misplaced, overlooked or otherwise diverted from processing, and that such documents are accessible if needed before processing is complete.

Finding

This control is effective.

CONTROL 17-10, STORAGE CONTROLS

Purpose

The controls specified in this category are intended to prevent deterioration of items in the formal record due to improper physical placement, unnecessary handling, etc.

Finding

The control is effective.

CONTROL 17-11, MEASURES FOR PRESERVATION OF RECORDS

Purpose

This control is intended to protect records from deterioration due to improper environment conditions, so that they are usable when needed.

Finding

This control is not effective. Vault environment is not controlled separately from building air conditioning for temperature or humidity, and there is no filtering or other action to prevent biological damage. See RECOMMENDATIONS AND CONCERNS and QAF #86-01-02.

CONTROL 17-12, SAFEKEEPING

Purpose

This control is to preserve confidence and integrity of the formal record by protecting it from vandalism, tampering, etc/

Finding

This control is effective.

CONTROL 17-13, PERMANENT RECORD STORAGE FACILITY

Purpose

This control is to ensure that the formal record can survive any credible disaster throughout the period of planned need.

Finding

The present facility does not meet specified record facility standards, nor is an official duplicate set of records maintained in a location such that no credible disaster could destroy both sets.

This problem is well known to Project management, and a plan exists for correcting it. See RECOMMENDATIONS AND CONCERNS and QAF #86-01-02.

CONTROL 17-14, RETRIEVABILITY

Purpose

This control is intended to ensure that individual items in the formal record can be retrieved readily in a reasonable time.

Finding

This control is effective.

CONTROL 17-15, DISPOSITION OF RECORDS

NOTE: This control was not audited. There is no plan at present to transfer custody of the record, and all records are treated as permanent.

RECOMMENDATIONS AND CONCERNS

RECOMMENDATIONS

1. Control 17-8, Receipt Controls

When documents are transferred from the transmitting organization to the records management function, they (the documents) essentially pass through an opaque interface.

People who receive and process them do not necessarily know anything about the technical framework within which the documents were prepared or used or what other documents they are related to, and may have no way of knowing whether a submitted document has all its pages or attachments. Similarly, the transmitting organization has no way of knowing that all pages and attachments - or even all parent documents - actually got transmitted or received unless they prepare and maintain some kind of inventory.

The transmittal form constitutes the inventory that provides visibility across the interface. It tells the recipient what the transmitter believes he sent and, if a signed copy is returned to the sender, gives the sender a record of what actually reached the processing center.

As Integrating Contractor, Rockwell should make a strong effort to raise the level of awareness to this interface bridge among all participants. Special project notices and/or record management briefings may be useful; explicit audit and surveillance focus is certain to provide emphasis. Finally, the current practice in RMC of rejecting submittals that lack transmittals, or whose transmittals are not fully adequate, should continue to be pursued vigorously.

2. Controls 17-11 and 17-13, Measures for Preservation of Records and Permanent Record Storage Facility

It is recognized that responsible Project management knows this problem and has established a course of action for correcting it. However, it may be advisable to consider interim measures to protect existing records. Such measures might involve:

- a. Separate remote storage of duplicate microform masters,
- b. Contract archival services for one-of-a-kind records, such as radiographs, strip charts, etc.

In addition, Project management might want to investigate whether record media susceptible to biological attack will need sterilization when they are eventually transferred to a long term facility, or whether sterilization is feasible at the present state of the art.

Attachment 1: Administrative

AUDIT 8601
MEETING ATTENDANCE AND CONTACTS

<u>Name</u>	<u>Organization/Title</u>	<u>Entrance</u>	<u>During Audit</u>	<u>Exit</u>
LJ Jenson	RHO/Statistician	X		
KM Tominey	RHO MGR BWID QAPV	X		X
BK Sandell	RHO BWIP QA	X		X
RN Richardson	RHO BWIP MSS MGR	X		
EL Richards	RHO BWIP Records Admin.	X		X
JE Ferguson	RHO MGR Data Mgmt	X	X	
RE May	RHO Mgr. RMS	X		
TA Rivera	RHO BWIP QA			X
Johnson	RHO Mgr. BWIP QA			X
WJ Keltner	PHO Proj. Assur. Coord.			X
TH Davies	DOE/RL QA Engr.			X
M. Bell	RHO Rec. Vault/Micr. Super.		X	
S. Garcia	RHO Lead Micro Film		X	
T. Stocker	RHO Micro Film Processing		X	
F. Meder	RHO EAS DOC Clerk		X	
D. Leyson	RHO Rec Vault Mgr.		X	
J. Hutteball	RHO Doc. Proc.		X	
D. Loomis	RHO Doc. Proc.		X	
K. Davis	RHO Doc. Super.		X	
A. France	RHO Doc. Proc.		X	
L. Calpin	RHO DOC. Proc.		X	
M. Connor	RHO Doc. Proc.		X	
AG Bell*	DOE/RL Auditor		X	
Harty*	DOE/MAC Auditor	X	X	X
Smiroldo*	DOE/MAC Auditor	X	X	X
WA Hedzik*	DOE/MAC Auditor	X	X	X
BM Gregory*	DOE/MAC Auditor	X	X	X
JH Rusk*	DOE/MAC Lead Auditor	X	X	X

*AUDIT TEAM MEMBERS

Attachment 2: DISCUSSION OF AUDIT APPROACH

The DOE QA AUDIT FUNCTIONS

DOE audit of the Basalt Waste Isolation Project (BWIP) QA program is intended to verify that adequate control systems are in place and that they are working effectively (i.e., producing the intended results). The control systems that constitute the BWIP QA program have two basic purposes:

1. To prevent problems that are known to occur chronically in the absence of such controls, and
2. To provide demonstrable evidence that project results are valid (i.e., to establish a sound basis for confidence in project results).

If a required control system is deficient, either in its design or implementation, then work performed under the system's control will contain chronic deficiencies or there will be chronic deficiencies in the record of control actions. Control system adequacy and effectiveness is judged during DOE QA audit on the basis for presence or absence of these chronic deficiencies.

AUDIT HYPOTHESIS

The audit tested the hypothesis that "...the system contains systematic (chronic) deficiencies, either in its design or in its implementation, or both." Testing was based on the following assumptions:

1. That an individual failure of a control is of interest only if it has an actual effect, either in the quality of the controlled work or in the record of the control (i.e., a discrete indicator of failure),
2. That a systematic or chronic control deficiency will result in chronic failures of the control, and
3. That absence of indications of control failure in a sample of suitable size and composition can be taken as evidence that the control does not have a systematic or chronic deficiency.

SAMPLE SIZE

Determination of sample size was based on the "discovery sampling" technique. The definitive question at the base of discovery sampling is: "If a characteristic occurs in the parent population with the frequency "R", determine sample size "S" such that there will be a probability "P" that the sample will include at least one occurrence of the characteristic."

Frequency "R" with which indicators of control failure would occur in the data population if a systematic or chronic control deficiency existed is established by auditor assumption. The assumption requires identification of the generic types (or causative mechanisms) of control system deficiencies and a judgmental estimate of the frequency with which control failure could be expected to occur given each mechanism. In practice, the likelihood of control failure for each system deficiency mechanism is about the same as the likelihood of correct performance given adequate controls that are implemented conscientiously. However, the conservative approach was used by assuming that presence of any one of the generic system deficiencies would produce control failure in only half of the opportunities - i.e. $R = 0.5$.

Having established an assumed value for R, probability P is determined for any given sample size S by simple binomial computation. That is,

$$P = 1 - (1 - R)^S$$

In terms of practicality, the calculation can be done more rapidly and simply by using the form

$$(1 - R)^S = 1 - P$$

If a probability of 0.95 of detecting at least one occurrence of the indicator in the sample is desired, for example, simply raise 1-R to such a power that 1-P is equal to or less than 0.05. The power, S, that was used is the required sample size.

In order for the discovery sampling approach to be statistically valid, two conditions are necessary:

1. That the parent population be homogeneous with respect to the assumed value R, and
2. That all members of the parent population have an equal chance of being selected by the sample process (i.e., that the sample be randomly selected).

HOMOGENEITY OF DATA POPULATION

Homogeneity of the data base for the records management audit was a function of basic audit assumptions and of the questions the audit addressed. The basic assumptions dealt with Rockwell's functions as Integrating Contractor, responsible for establishing the Project records management system and for ensuring its effective implementation across the Project. The audit then addressed the question, "Has Rockwell done an effective job of defining and establishing the Project records management system and of managing its implementation?"

Project participants vary significantly in prior records management experience, awareness of objectives, etc. However, it is the Integrating Contractor's responsibility to take whatever steps are necessary to ensure effective support of Project objectives by all participants. In that sense, the formal Project record is "homogeneous" with respect to Rockwell's management function.

Similarly, detailed records management system requirements within the Project have changed from time to time and are still evolving. However, the fundamental controls that make up records management have not changed, nor have the reasons that they are imposed. Therefore, the entire formal record constitutes an homogeneous data base for indicators of success or failure of major control elements.

SAMPLE SELECTION

Mathematical validity of statistical analysis depends on statistical (random) sample selection. Every member of the population must have the same opportunity to be selected as every other member has. That means the sampler must have equal access to every member of the population.

If sampling is done on any basis other than random selection, numerical relationships among sample size, confidence levels, etc., are not statistically valid. In this audit, the records related to specific tasks were examined for indicators of control failures. Although sample size was determined initially by the discovery sampling process, the audit sample was not assembled by exclusive application of random selection techniques.

Inability to assemble a complete list of Project tasks prior to this first audit under the effectiveness concept makes it impossible to assign a numerical confidence level to audit conclusions. In the judgement of the audit team, the process used provides a high degree of confidence in the results reported.

AUDIT PROCESS

Four tasks were randomly selected from short lists of completed tasks submitted by DOE BWI Division technical personnel. Two additional tasks were identified by random selection from partial lists of tasks obtained in the course of an unrelated activity in support of the BWI Division. Neither selection provided access to all eligible Project tasks.

Records Management personnel retrieved the records related to those tasks; the resulting packages were examined for presence of indicators of control system failures (of which none were observed) and evaluated for their ability to support reconstruction of the activities they addressed.

The absence of failure indicators in those six packages provided convincing evidence to the audit team that no systematic or chronic system deficiencies exist relative to controls 17-2, 17-3, 17-4 or affecting the second purpose identified for control 17-8.

A team of two auditors examined evidence at the records processing center in Building CDC-2 for failure indicators affecting controls 17-3, 17-7, 17-8, 17-9, 17-12, and 17-14. With the exception of the deficiencies indicated under findings for controls 17-7 and 17-8 no indication of current systematic control deficiencies were found.

Another two-auditor team evaluated those activities performed in connection with the vault operation in the Federal Building for indicators of systematic control deficiencies. Controls 17-10 and 17-12 were found to be effective; adverse findings for 17-11 and 17-13 are noted under FINDINGS in the audit report.

QUALITY AUDIT FINDING

INSTRUCTIONS FOR PREPARING THE QUALITY AUDIT FINDING:

BLOCK NO. INITIATOR

ENTRY INFORMATION

- 1 Name and title of Auditee/Personnel responsible for providing action.
- 2 Location of audit or surveillance activity.
- 3 Reference/requirements. Be concise and factual, reference controlling documents relative to "description."
- 4 Audit or Surveillance Report No.
- 5 Description of the observed condition. Be concise and factual.
- 6 Signature of Lead Auditor or person performing surveillance.
- 7 Date of Initiating QAF.
- 8 Date by which addressee must respond (NOTE: Whenever possible, this will be date of addressee acknowledgement of condition, e.g., at post-audit conference - must be within 30 days of QAF initiation date).
- 9 QAF Control Number provided by cognizant originating department/branch.

ADDRESSEE

- 10 Corrective action commitment of action party.
- 11 Signature of responsible action party.
- 12 Signature date.
- 13 Committed completion date for corrective action.

INITIATOR

- 14 Signature of Lead Auditor or person performing surveillance - signifies corrective action has been verified adequate and complete.
- 15 Date of verification.

MANAGER/BRANCH CHIEF (COGNIZANT BRANCH)

- 16 Sign and date signifying final review and closure (NOTE: includes evaluation of need for re-audit, etc.)
- 17 Distribute as required.

