attn John Kennedy
MS 623 SS
from Bob Cook

WM DOCKET CONTROL CENTER

Department of Energy
Richland Operations Office
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General Manager
Rockwell Hanford Operations
Richland, Washington

Dear Sir:

QUALITY ASSURANCE AUDIT, BASALT WASTE ISOLATION PROJECT - FEBRUARY 21-24, 1984

Transmitted for your action are the results of the recent RL audit of Rockwell's Basalt Waste Isolation Project (BWIP) Quality Assurance (QA) Program. The audit identified the need for substantial improvement in several areas, including definition and control of organizational interfaces, compliance with procedures, detection and correction of deficiencies through Rockwell internal review processes, establishment and enforcement of QA requirements in procurement actions, and maintenance of records sufficient to demonstrate performance to QA requirements. The broad nature of the audit results emphasize the need for an aggressive and systematic internal review of all areas of the BWIP-QA program.

Rockwell is requested to respond to the Findings, Observations, and Appendix B items presented in the Enclosure within 30 days of receipt of this letter. Your response should include commitments for corrective actions to resolve specific items raised in the audit report as well as commitments for actions to identify and correct related deficiencies throughout the BWIP-QA program.

Very truly yours,

JE Mecca
for D. L. Olson, Project Manager
Basalt Waste Isolation Project Office

SQA:GJB

Enclosure

cc w/encl:
R. D. Hammond, Rockwell
E. B. Ash, Rockwell

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Audit Report

Rockwell Hanford Operations (Rockwell)

Basalt Waste Isolation Project (BWIP)

Quality Assurance Program

February 1984

INTRODUCTION

This report presents the results of a Rockwell-BWIP Quality Assurance (QA) Program audit performed by RL during the week of February 21, 1984, (reference letter, O. L. Olson to General Manager, Rockwell, same subject, dated February 8, 1984). The audit scope consisted of Rockwell's internal and external audit and surveillance programs, the preparation and implementation of procedures, control of procurement documents, and indentification control of interfaces within the QA Program. The RL audit team consisted of G. J. Bracken (Lead), RL-SQA, R. D. Hudson, RL-BWIP, J. L. Rast, RL-SQA and K. M. Thompson, RL-BWIP. Information used in the preparation of this report was obtained through discussions with quality assurance and line personnel, facility visits, and reviews of Rockwell and other contractor's manuals, records, reports, procedures and documentation.

The results of this audit were discussed with Rockwell management as appropriate during the week of February 21, 1984, and in a scheduled exit briefing on February 28, 1984. This audit is intended to complement but not replace or otherwise substitute for continuing Rockwell management review and evaluation of all Quality Assurance program areas for identification and resolution of problems requiring corrective action.

SUMMARY

Rockwell's performance in those QA program areas evaluated is judged to be fair. Audit results presented below reflect the need for improvements in the following areas:

- Definition and control of interfaces;
- procedural compliance;
- internal review processes which detect and correct QA program deficiencies;
- procurement document controls relating to the establishment of QA requirements for BWIP contractors, and
- maintenance of records necessary to demonstrate compliance with requirements.

Included as appendices to this enclosure are a list of Rockwell personnel contacted during the audit and a list of problems and issues raised by Rockewell during the audit entrance meeting on February 21, 1984. It is expected that Rockwell's response to the audit will include trackable commitments for actions necessary to address these problems and issues.

FINDINGS

Finding 84-01

The relationships between the various Rockwell policies, procedures and organizations which affect BWIP need to be reviewed for continuity and clarity.

Discussion

- NQA-1 establishes that the responsibility and authority of each organization involved in activities (of the BWIP) shall be clearly established and documented. It is the judgment of the audit team that several of the conditions observed during the audit and discussed in the audit Findings and Observations reflect on the adequacy with which the numerous organizational and administrative interfaces are defined and controlled.

- The Basalt Operating Procedures Manual, RHO-BWI-MA-4, is issued by the Rockwell Project Director (see BO4 A-1) for compliance by "all personnel within or in support of the BWIP". It is not clear that the Project Director has sufficient authority to require compliance by non-BWIP personnel, especially when support organizations have requirements and procedures in existing Rockwell manuals.

- BOP C-1.1 was authored within the BWIP Site Department and approved for issuance in April of 1983. It presents requirements for support organizations, such as the Engineered Barriers Laboratories, which were apparently not made known to these organizations and have not been followed.

- The scope of the BWIP surveillance program is described in varying terms by QAP 1-402 (Quality Assurance Surveillance Program), QAI 1-406 (Surveillance Activities - BWIP) and RHO-QA-PL-3 (QA Program Plan - BWIP). None of these descriptions relate directly to the work breakdown structures by which work is organized and accomplished.

- The BWIP QA Program Plan indicates that other Rockwell QA organizations provide support to BWIP through implementation of their existing procedures, such as Quality Engineering and Control thru QAI 1-404. The precise nature of the interaction between these two organizations is not spelled out.

ing 84-02

:rous examples of noncompliance to Rockwell-approved procedures were :cted in all areas reviewed during the audit.

:ussion

Although Basalt Operating Procedure A-1 specifically restates the NQA-1 and the BWIP QA Program Plan requirements for compliance to procedures, numerous examples of informal practices in conflict with approved procedures were in evidence in practically all areas reviewed. This f ding reflects practices similar to those which were the subject of an R audit finding in July of 1982. Examples are provided below.

Rockwell's BWIP surveillance program requires, as a minimum (QAI 1-406), that those surveillances established in the quarterly surveillance plan be conducted. However, available surveillance logs indicate since January 1983, 257 surveillances were planned, but only 159 were actually conducted.

Proposed Basalt Operating Procedures (BOP) in the C-4.3 series deal with data and sample control in laboratories under the Engineered Barriers Department. These procedures have been in various stages of preparation and implementation during the previous 18 months and are still unapproved. In the meantime, BOP C-1.1 presents approved requirements for handling of some laboratory data which laboratory management had not been made aware of and therefore were not following.

"WIP QA personnel confirmed that audits have not been performed to the equirements referenced in the BWIP QA Program Plan. Audits have been conducted to an informal mixture of approved requirements (QAI 1-401), draft procedures (BOP J-3) and auditor preference. There is a need to assure that audit planning, execution and followup satisfy applicable requirements.

BOP C-1.5 ("Qualification of Technical Procedures") was originally issued in August of 1982 and subsequently updated in June of 1983. This procedure establishes requirements for review and qualification of BWIP technical procedures. No evidence could be found to demonstrate this procedure is being implemented. Conversations with Rockwell personnel during the course of the audit confirmed this conclusion.

Finding 84-03

Significant areas of procedural noncompliance within the QA program were not detected or corrected by Rockwell's internal audit and surveillance programs.

Discussion

- Implementation of an internal audit program to detect deficiencies in QA program implementation is a requirement of NQA-1 (Basic Requirements 2 & 18). No record could be found, however, to demonstrate that internal audits of the BWIP QA program itself, using "auditors who are independent of any direct responsibility for performance of the activities which they will audit" (NQA-1, Supplement 185-1) were performed. In light of the extensive nature of the audit results, it is felt that an aggressive internal audit effort planned to provide complete coverage of the BWIP QA program, including those portions implemented by the BWIP QA organization, is warranted.

- Although a yearly schedule is prepared listing several organizations to be audited; QA implementing procedures to be audited are not specified. As a result it is unclear that all applicable procedures and activities are audited within a given period. QAP 1-401 leads the reader to believe that all internal quality related activities are to be audited annually. In practice, this does not occur. The volume of audits performed to date indicates that full coverage of the QA program is not achieved. In addition, records of closed audits and status information for audits in progress are sufficiently buried in individual audit files so as to be of no practical value in managing and planning audit activities. The audit log, a requirement of QAI 1-401, could facilitate management of the audit effort. However, BWIP QA has not been maintaining an audit log. In summary, there appears to be no systematic approach to assure that all required audits are scheduled or performed.

- Followup to surveillance results, while generally satisfactory, does not provide for systematic management involvement to assure visibility and appropriate action for past due corrective actions. An ad hoc effort was initiated in February 1984 to deal with this area.

- It is noted that six of seven audits performed since January 1982 remain open.

Finding 84-04

There is insufficient evidence to establish that the work of other contractors is being performed under a QA program adequate for BWIP requirements.

Discussion

- As stated in the BWIP QA Program Plan, "Rockwell is responsible to assure proper integration of the overall BWIP quality assurance program with other principal contractors". QA requirements for WHC and PNL were provided by Statements of Work which contain a very short description of six elements for a QA program. These elements were of undetermined origin. As a result, the WHC and PNL QA Plans for BWIP do not contain any reference or apparent link to Rockwell's BWIP QA Program Plan.

- Rockwell BOP G-2 (Quality Assurance Review of Procurement Documents) contains some provisions for QA programs to be applied to suppliers performing studies, such as Woodward-Clyde (P. O. No. M3A-SBB-98960). However in the case of this purchase order, the minimum requirements of the procedure were not satisfied.

- There are no procedures within the Rockwell BWIP Program for review and comment or approval of subcontractor QA programs, although NQA-1 (Basic Requirement 5) requires that activities such as this be prescribed by and performed in accordance with documented instructions and procedures. The following reflect symptoms of this:

  - PNL's QA Plan "PGM-19" was reviewed by Rockwell BWIP-QA and approved with comment via a December 2, 1982, internal letter. There is no evidence to suggest the comment has ever been closed out. In fact the 12/2/82 letter was preceded by PNL's 11/16/82 final issuance of PGM-19. The review basis for Rockwell's approval or comment action could not be established.

  - The QA programs of the Construction Manager and the Architect/Engineer have been reviewed and approved by Rockwell. Per discussions with BWIP-QA staff, some kind of an NQA-1 checklist was used in these reviews; however, no record of this exists.

  - A penciled checklist referring to review of a WHC QA Plan was located; however, no action appeared to have been taken regarding correction of identified deficiencies. In fact, no action of any kind beyond completion of the checklist could be found.

Finding 84-05

The availability and content of records necessary to provide objective evidence of performance to the requirements of the QA program fall far short of that required to demonstrate compliance or manage program implementation.

Discussion

- In the audit teams judgment, insufficient attention has been given to identifying, developing and maintaining the records necessary to prove compliance with QA Program requirements. It is likely this has contributed to the shortcomings of Rockwell's internal review processes discussed under Finding 84-03. Problems in this area are exacerbated by the various interfaces between BWIP and non-BWIP organizations (see Finding 84-01). For example:

  - Records necessary to establish compliance with BOP-04 ("QA Responsibilities-NSTF") were not readily located by BWIP-QA. Some records are located at the NSTF site, while others remain in the Bank Building. In spite of a special effort on the part of BWIP-QA personnel to provide pertinent files, the information located was found to be incomplete.

- Although a congnizant BWIP QA respresentative escourted the audit team, it was necessary to visit three separate departments before the official procurement records were located.

OBSERVATIONS

Observation 84-01

It appears the responsibilities presently assigned to the Director of Quality Assurance, particularly those associated with operation of the analytical laboratories, may compromise the line independence of the QA organization required by licensing related criteria.

Discussion

- NQA-1 discusses QA independence in terms of absence of cost and schedule pressures. The proposed NRC review plan for site characterization QA programs is much more specific in calling for the director level position within the QA organization to have no duties other than quality assurance. Under Rockwell's present organization the greatest responsiblity of the QA Director, in terms of manpower, is the operation of the analytical laboratories. Rockwell needs to re-evaluate this organization in light of the independence between performing (line) and verifying (QA) functions which will be required for the BWIP.

Observation 84-02

There appear to be inadequate coordination and planning between QA and Procurement organizations to assure contractural quality assurance requirements (e.g., hold points) are accomplished in a timely manner.

Discussion

- During review of this area, no evidence could be found to suggest that any prescheduling of inspection hold points occurs. Vendors are required to provide Rockwell purchasing with 48 hours advanced notice of an upcoming hold point. However, such short notice creates the potential for hold points to be by-passed. One extreme example of this is the recent procurement of the main hoist. Fabrication for this hardware progressed to within one month of delivery before it was realized that hold points required early in fabrication had been violated.

APPENDIX A

Rockwell Personnel Contacted
(February 1984 BWIP QA Audit)

K. B. Davis	BWIP-EMS
W. F. Davis	BWIP-QA
D. C. Edwards	BWIP-MTG
J. E. Ferguson	BWIP-EMS
W. A. Herber	BWIP-QA
C. R. Hoover	RHO-QE&C
T. E. Jones	BWIP-MTG
A. L. Morissette	RHO-QAPD
D. C. Morissette	BWIP-QA
L. T. Murphy	BWIP-QA
M. F. Nicol	BWIP-QA
D. G. Price	BWIP-QA
R. A. Palmer	BWIP-MTG
B. D. Slonecker	BWIP-QA
G. K. Thompson	RHO-QE&C

APPENDIX B

Problems/Issues Raised by Rockwell During Entrance Meeting (February 1984 BWIP QA Audit)

During the entrance meeting Rockwell identified three general areas of concern (problems/issues) which are reported below. It is expected that the audit response will include appropriate commitments for actions necessary to resolve these areas.

- Definition of roles and responsibilities for the establishment and enforcement of Quality Assurance requirements in procurements involving interagency agreements, Hanford contractors and off-site principal contractors.

- Identification and application of hardware oriented Quality Assurance program requirements to Nuclear Waste Terminal Storage site characterization programs.

- Nuclear Waste Terminal Storage (BWIP) Quality Assurance programs' and organizations' ability to meet license applicant requirements during pre-applicant activities such as site characterization.