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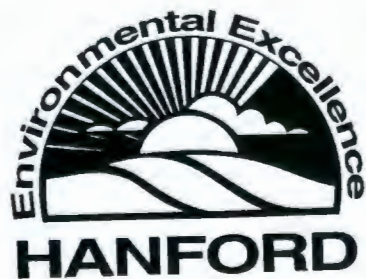
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Quality Assurance Project Plan for the 200-BP-1 Modified RCRA Barrier (Project W-403)



Prepared for the U.S. Department of Energy
Office of Environmental Restoration and
Waste Management

Bechtel Hanford, Inc.
Richland, Washington



Approved for Public Release

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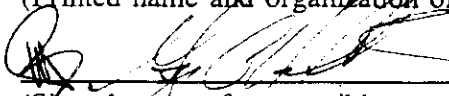
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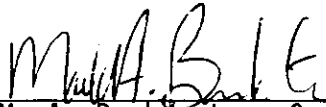
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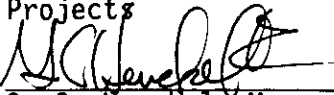
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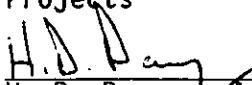
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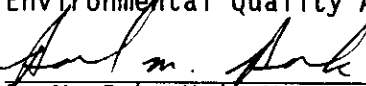
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1.0 PROJECT DESCRIPTION

1.1 PROJECT SCOPE

This document describes the Quality Assurance Project Plan (QAPjP) to be followed during the definitive design phase and various stages of construction for Project W-403, Modified Resource Conservation and Recovery Act (RCRA) Barrier for the 200-BP-1 Operable Unit (OU). The ICF-Kaiser Hanford (ICF-KH) shall meet U.S. Department of Energy (DOE) Order 5700.6C, *Quality Assurance* and the U.S. Environmental Protection Agency (EPA) *Technical Guidance Document: Construction Quality Assurance for Hazardous Waste Land Disposal Facilities* (EPA 1993).

1.2 BACKGROUND INFORMATION

The 200-BP-1 OU is located within the 200 East Area of the Hanford Site. It is a source operable unit with contaminated soils associated primarily with 10 inactive cribs. Cribs 216-B-43 through 216-B-49 were used for disposal of low level radioactive liquid waste from the uranium recovery operations in 1955-1956. Cribs 216-B-50 and 216-B-57 were operational from 1965-1975, receiving waste tank condensate from the adjacent 241-BY Tank Farm. Crib 216-B-61 was built but never used. A detailed description of the OU is provided in Section 2.0 of the 200-BP-1 Work Plan (DOE/RL 1990).

In an effort to accelerate the remedial action for the 200-BP-1 OU, construction of a prototype surface isolation barrier, known as the Hanford Barrier, is being constructed over the 216-B-57 crib as a treatability test. This isolation barrier may be used as a final remedy for the waste site based on a subsequent Record of Decision and the data collected for constructability and overall performance. The preferred alternative for remediation of the 216-B-43 through 216-B-50 Cribs is to construct a modified RCRA Subtitle C Barrier.

Both barriers are multi-layered to meet specific remedial action objectives (RAO). They are designed to limit human exposure to near surface and subsurface radioactivity, limit biotic intrusion, and limit future impacts to the groundwater by minimizing infiltration and downward migration of contaminants. The modified RCRA barrier is similar in design to the Hanford barrier with the following exceptions: 1) The thickness of the two silt layers have been reduced from 100 cm each to 50 cm each, and 2) The basalt riprap layer has been eliminated in the RCRA design.

2.0 PROJECT ORGANIZATION AND RESPONSIBILITY

A specific Project Management Plan (Buckmaster 1994) has been prepared for this project that defines organizational structures and responsibilities. The following sections summarizes responsibilities of each party.

2.1 DOE-RL (OWNER)

The DOE Richland Operations Office (DOE-RL), as ultimate owner, controls the W-403 project participants. The owner has delegated daily management responsibilities to Westinghouse Hanford Company (WHC). Inclusion in this delegation is the overall QAPjP implementation and system of overchecks and appraisals, which are subject to separate overview by DOE-RL.

2.2 WHC (CONTRACT ADMINISTRATOR)

WHC has the responsibility and authority for daily management of the project and establishment of an overall QAPjP. This includes construction quality, cost, and schedule. In order to accomplish these responsibilities, the WHC shall monitor and approve any QAPjP prepared by ICF-KH and subcontractors. WHC shall provide technical direction on the design and construction of the engineered structure.

2.3 ICF-KH (CONSTRUCTION MANAGER)

ICF-KH shall be responsible for the overall design engineering, preparation of definitive design documents, design control, internal verification of technical design, Title III Engineering Services, and oversight of the construction subcontractor. The ICF-KH QAPjP shall implement the specific requirements addressed in this QAPjP, DOE 5700.6C, (EPA 1993) and develop controls necessary to assure compliance with the ICF-KH internal engineering effort. The ICF-KH shall specify criteria identified in this plan during development of specifications and drawing, which pass quality assurance (QA) and quality control (QC) requirements to construction contractors. This will include a Construction Quality Assurance plan for construction of the barrier.

2.4 CONSTRUCTION SUBCONTRACTOR(S)

The construction subcontractor(s) shall be responsible for meeting obligations as identified in specifications, drawings, and other contract documents. The construction

subcontractor(s) shall also participate in inspection, planning documentation, schedule of submittals, as-built preparation, and other construction-related activities.

3.0 QUALITY ASSURANCE REQUIREMENTS

3.1 SAFETY CLASSIFICATION

Definitions for safety classification are established in WHC-CM-1-3, "Management Requirements and Procedures," MRP 5.46 (WHC 1992). Engineered features within the barrier will have a safety class III.

3.2 ENVIRONMENTAL PROTECTION

All quality activities conducted during the design and construction of the isolation barrier shall meet the intent of *Technical Guidance Document: Construction Quality Assurance for Hazardous Waste Land Disposal Facilities* (EPA 1993).

3.3 DOE ORDER 5700.6C

All quality activities conducted during the design and construction of the isolation barrier shall meet the intent of DOE Order 5700.6C, *Quality Assurance*.

As a minimum, the following applicable subjects shall be addressed in the QAPjP for the design function.

1. Organization
2. QA Program
3. Design Control
4. Instructions, Procedures, and Drawings
5. Document Control
6. Quality Assurance Records

In addition to the above requirements, the following applicable subjects shall be addressed in the construction phase.

1. Procurement Document Control
2. Control of Purchase Items and Services
3. Identification and Control of Items

4. Control of Processes
5. Inspection
6. Test Control
7. Control of Measuring and Test Equipment
8. Handling, Storage, and Shipping
9. Control of Nonconforming Items
10. Corrective Action

3.4 DOCUMENT APPROVALS AND CHANGE CONTROL

The QAPjP, including implementing procedures prepared by ICF-KH and/or subcontractor(s), shall be submitted to WHC for review and approval prior to use. Any change to WHC-approved documents shall be reviewed and approved prior to use.

3.5 ACCESS

ICF-KH shall grant access to facilities, files, records, and personnel for the purpose of periodic WHC quality assurance audit and/or surveillances.

3.6 GOVERNMENT ACCEPTANCE (Title III)

Authorized Government acceptance (AI) shall be responsible for acceptance of construction. ICF-KH has been designated as an acceptable AI. Their surveillance and overview shall determine project specific acceptance based on requirements identified in the specifications and drawings. Conditions adverse to quality, identified through inspection activities, nonconformance reports and audits, shall be tracked and Corrective Action Reports (CAR) issued as warranted. WHC shall approve any nonconformance report disposition prior to implementation. AI shall identify hold and witness points, as appropriate to the design and construction.

4.0 REFERENCES

Buckmaster, 1994, *Project Management Plan for the 200-BP-1 Modified RCRA Barrier (Project W-403)*, WHC-SD-EN-PMP-007, Rev. 0, Bechtel Hanford, Inc, Richland, Washington.

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