

River Protection Project: Interface Management in the Multi-Contract Project Environment at Hanford

Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management

CH2MHILL
Hanford Group, Inc.

Richland, Washington

Contractor for the U.S. Department of Energy
Office of River Protection under Contract DE-AC06-99RL14047

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**RIVER PROTECTION PROJECT:
INTERFACE MANAGEMENT in the MULTI-CONTRACT
PROJECT ENVIRONMENT at HANFORD**

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ABSTRACT

The Office of River Protection (ORP) is implementing the River Protection Project (RPP) using two prime contractors. CH2M Hill Hanford Group, Inc. (CHG) is responsible for operating the existing tank system, delivering the waste feed to the waste treatment plant, and managing the resulting low- and high-level glass waste “product” through a performance-based fee type contract. A separate prime contractor will be responsible for designing, constructing and commissioning of a new Waste Treatment and Immobilization Plant (WTP), and preparing the waste for ultimate disposal.

In addition to the prime contractors and their interfaces, the River Protection Project is being conducted on the Hanford Site, which is under the management of another DOE organization, DOE Richland Field Office (DOE-RL). The infrastructure and utilities are provided by DOE-RL, for example. In addition, there are multiple other technical interfaces with federal, state and other regulatory agencies that influence the management of the activities.

This paper provides an overview of the approach employed by ORP to identify, coordinate, and manage the technical interfaces of RPP. In addition, this paper describes the approach and methodologies used to:

- Establish an overall framework for interface management.
- Establish the requirements for defining and managing interfaces for the prime contractors and DOE.
- Contractually requiring the prime contractors to control and manage the interfaces.

INTERFACE MANAGEMENT IN THE MULTI-CONTRACT PROJECT ENVIRONMENT AT HANFORD

INTRODUCTION

As directed by Congress in Section 3139 of the Strom Thurmond National Defense Authorization Act of 1999, the U.S. Department of Energy (DOE) established the Office of River Protection (ORP) to focus management responsibility and accountability at the Hanford Site. ORP is responsible for overseeing the tank waste remediation system, which is a large and complex effort to remediate 60% (by volume) of the nation's and 90% (by radioactivity) of the Hanford Site's radioactive waste resulting from nuclear weapons development. The ORP mission includes remediating approximately 190 million curies in 54 million gallons of highly radioactive liquid and solid waste that were stored in underground storage tanks. The tank waste includes solids (sludge), liquids (supernatant), and salt cake (dried salts that will dissolve in water forming supernatant). Plus, there are 143 million curies in cesium and strontium capsules have accumulated over more than 50 years.

ORP is implementing the River Protection Project (RPP) using two prime contractors. CH2M Hill Hanford Group, Inc. (CHG) is responsible for operating the existing tank system, delivering the waste feed to the waste treatment plant, and managing the resulting low- and high-level glass waste "product" through a performance-based type contract. A separate prime contractor will be responsible for designing, constructing and commissioning of a new Waste Treatment and Immobilization Plant (WTP), and preparing the waste for ultimate disposal. The WTP will be comprised of facilities for pretreatment, LAW immobilization, HLW immobilization, and supporting plant facilities.

In addition to the prime contractors and their interfaces, the River Protection Project is being conducted on the Hanford Site, which is under the management of another DOE organization, DOE Richland Field Office (DOE-RL). DOE-RL's prime contractor and its subcontractors provide the infrastructure and utilities to the River Protection Project. In addition, there are multiple other technical interfaces with federal, state and other regulatory agencies that influence the management of the activities, such as the Tri-Party Agreement with the State of Washington Department of Ecology and the U.S. Environmental Protection Agency.

It was necessary to identify, coordinate, and manage the technical interfaces of RPP. As a new project, ORP had to:

- Establish an overall framework for interface management.

- Establish the requirements for defining and managing interfaces for the prime contractors and DOE.
- Contractually require the prime contractors to control and manage the interfaces.

MANAGEMENT APPROACH

The RPP Interface Management objective is to:

- Provide adequate, timely, efficient communications that foster an understanding of requirements that cross physical, functional, or performance boundaries among the contractors, federal and regulatory entities so that work can be performed effectively, efficiently and safely.
- Provide information to aid in determining that project structures, systems and components that cross these interfaces are defined and compatible in terms of form, fit and function.

The interface management system includes some basic elements to identify, track, control changes, and resolve issues among the interfaces:

1. The use of Interface Control Documents (ICDs) and other agreements. If there is an irresolvable issue at the primary interface level, it can be elevated to ORP for resolution on a policy level. If an interface requirement changes schedule or cost, it is processed through the formal RPP integrated baseline change control process.
2. A cross-organizational database system that can be accessed by the interfacing organizations (contractors and DOE) and supports work by Hanford Contractors to manage “interfaces” and provides a means of sharing information, such as a list of contacts and phone numbers and e-mail addresses, ICD documents and contents, ICD meeting minutes, key issues, shared schedules and risks, and shared requirements.
3. A color-coded facility diagram, *RPP Major Facility Technical Interface Key*, that has been developed that illustrates interfaces among the facilities and project activities symbolically and promotes clearer communication. See Figure A.
4. Use of the Hanford intranet to “hot-link” the user to related interface documents.
5. Interface Teams. Team members are selected to cover the necessary areas of expertise/skills requisite in addressing the whole physical/technical interface issue (e.g., design, installation, commissioning, operations, safety, environment, radiation control, etc.).

ORP and its contractors use the interface teams as a primary method to formally communicate interface information critical to the project's success: regulatory framework, site requirements, schedule requirements, Hanford Site operational constraints, and identification of interface risks and mitigating strategies. These interactions provide the necessary information to the integrated planning system and changes are implemented through formal change control.

The interface teams perform many functions, such as:

- Provide a single point of contact to define, document, execute, and manage the interfaces.
- Be the forum for discussion of technical scope, specifications, standards, and other document(s) or information that create a requirement to be applied to the execution of the interface.
- Be the forum for identifying, discussing, and recommending changes to the prime contracts' baselines (scope, schedule, cost) resulting from developing the interface.
- Prepare or delegate the preparation of decision papers and change requests.
- Establish guidelines and/or procedures that define the Team's expectations for any deliverables.
- Report to the RPP management on the status of the interfaces and any developing issues.
- Monitor work plans and schedules that define activities necessary to complete the responsibilities, close the issues, and validate the assumptions required to execute the interfaces.
- Be the forum for the documentation (and update within the boundaries of the contract) of the interface requirements in an Interface Control Document (ICD) on an acceptable schedule.
- Be the forum for resolution of comments resulting from the DOE contractual review of the ICDs, deliverables, and contract change requests.

The goal of the interface teams is to ensure that each interface is clearly defined, is executable and provides the best value to the ORP. This will require integrating the requirements of the contract (e.g., specification, standards, and clauses) as well as any other source requirement documents (e.g., safety authorization bases, permits, other government standards, industry design standards) that are relevant to the specific interface.

The ICD database system

The database system is password controlled and has a capability to view data in a very structured and sophisticated way or in a simplified view of summary of requirements – from an interface point of view. Users (prime contractors, DOE, and regulators) can access these documents through the database or the RPP Intranet site, where the status of Interfaces as a group or a small set of interfaces can be obtained. It is set up to be cross-organizational so it is accessible through a share drive by principal parties and management, both government and contractor. Web access is being developed.

This database system provides:

- Confidence to Management and Stakeholders that the interfaces are being managed in a prudent fashion.
- A mechanism for sending anonymous comments, observations, and issues to the Interface Teams.
- Easy access to key documents – Interface Control Documents, Interface Committee Meeting Minutes, etc.
- Easy access to information about key contacts – names, work numbers, and E-mail addresses.
- Progress metrics – about interface programs and issues. The metrics can be used to spot trends to identify potential problems and to analyze possible process improvements.
- Reports on issues, and on the programmatic (cost, schedule, and specification) status of interfaces, allowing authorized personnel to query and sort this information in a variety of different ways.
- Surveys and audits -- track their status and record information gained.

SUMMARY

The RPP approach to manage the Project interfaces is initiated by a) identification of technical requirements that cross interfaces, b) establishing a process for requirements changes, and c) implementing/effecting the changes. It employs the use of formal Interface Control Documents, a shared database, and integrated interface teams. The interface teams resolve technical and schedule issues among themselves. Irresolvable issues are worked through RPP management.

The RPP HLW tank farms is considered one of the most complex and challenging projects in the DOE Complex today. Strong interface management was a necessity due

to the circumstances at the time where there were two prime contractors with strikingly different contracting mechanisms under ORP, on a DOE site managed by another prime contractor who performed under a separate DOE office at the same site, working to technical and legal milestones under the Tri-Party Agreement.

Figure A. RPP Major Facility Technical Interface Key

