



EPA

EPA Oversight of Remedial Designs and Remedial Actions Performed by PRPs

Office of Emergency and Remedial Response
Hazardous Site Control Division OS - 220

Quick Reference Fact Sheet

INTRODUCTION

This fact sheet presents an overview of the Environmental Protection Agency's (EPA) guidance for oversight of enforcement lead projects in which a Potentially Responsible Party (PRP) conducts the Remedial Design (RD) and Remedial Action (RA). The objectives of PRP oversight are to ensure that selected remedies being conducted by the PRP are protective of public health and the environment, and are in compliance with the Settlement Agreement. For more information concerning this subject, refer to Interim Final Guidance on EPA Oversight of Remedial Designs and Remedial Actions Performed by Potentially Responsible Parties, OSWER Directive 9355.5-01, February 1990.

The guidance introduces the "focused" approach to oversight of PRP lead RD and RA activities. First, the oversight effort must focus on certain key documents such as the RD and RA Work Plans, project schedules, preliminary design, final design, Construction Quality Assurance (QA) and Construction Quality Control (QC) Plans, and the Contingency Plan. The second step is the utilization of an Independent Quality Assurance Team (IQAT) during construction. The impact of the focused approach is to allow RPMs to utilize their oversight activities in a more efficient manner, and still

hold PRPs accountable for the RAs. *Flexibility is provided to adjust the level of oversight based on the performance of the PRP.* All aspects of oversight are always structured so the PRPs, not EPA, remain legally responsible for the success of the response action.

ROLES AND RESPONSIBILITIES

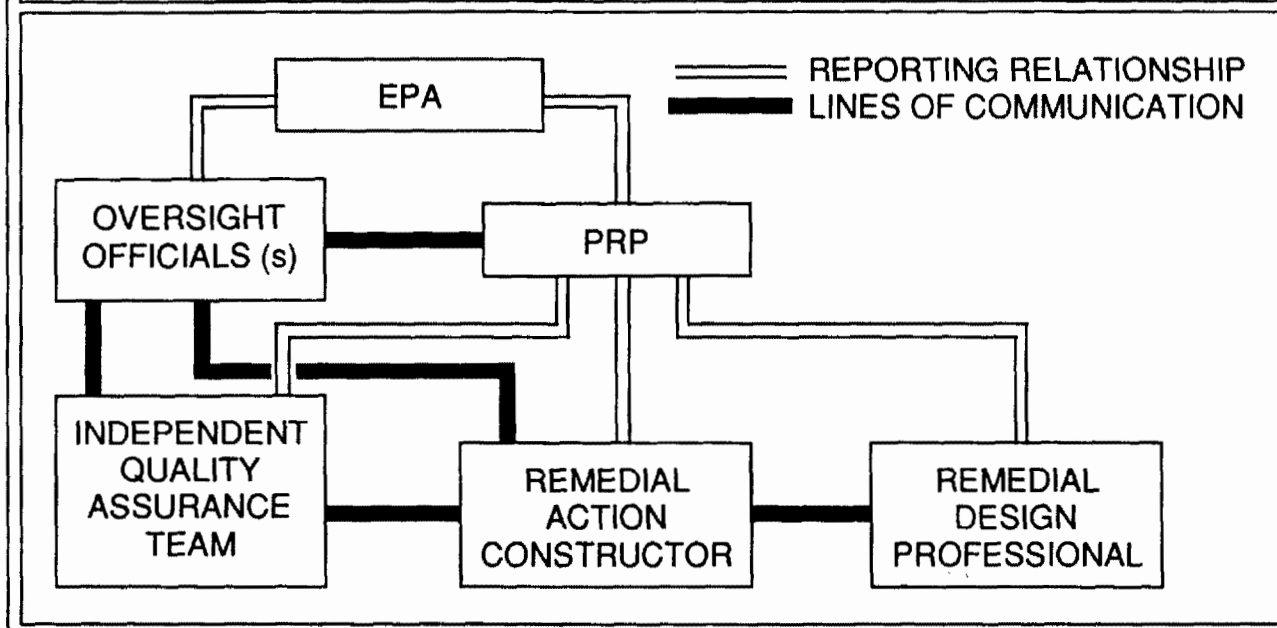
Figure 1 presents an organizational chart illustrating the typical relationships in an enforcement lead project. A "reporting relationship" is defined as a direct line responsibility in which one party is required to report the results of their work. The PRP has a "reporting relationship" with the EPA as a condition of the Settlement Agreement. Where "lines of communication" are indicated in Figure 1, it means an information exchange is usually necessary for a successful implementation of a remedy, however, there is no legal requirement for such communication.

ENVIRONMENTAL PROTECTION AGENCY

Remedial Project Manager (RPM): After ensuring the public health and environment are protected, EPA's primary goal is to confirm the PRPs meet all performance standards specified in the Settlement Agreement. The RPM with assistance from the Oversight Official provide this function.

FIGURE 1

RELATIONSHIPS AMONG PARTIES WHEN RD/RA IS PERFORMED BY A PRP



The role of the RPM during RD/RA include the following:

- Review and approve the qualifications of RD Professional, RA Constructor, and IQAT;
- Review and approve the RD and RA Work Plans, preliminary and final design, Construction QA and Construction QC Plans, Contingency Plan, and Project Closeout Report;
- Conduct progress meetings with the PRPs on a periodic basis;
- Ensure that **construction** activities are not endangering the **public health** or environment;
- Monitor the **construction QA** program;
- Coordinate interaction among all government entities involved, including the State and local municipalities; and
- Verify that the work is complete and initiate project closeout activities.

Oversight Official: The RPM acquires technical assistance for performing oversight by

engaging an Oversight Official capable of providing support in all technical aspects of the RD and RA. The oversight official is under some form of contractual or interagency agreement with EPA and reports directly to the RPM. In addition to reviewing PRP submittals and reports, they make on-site observations of the work in progress to monitor the PRP's QA program. The Oversight Official is a representative of the EPA but does not have authority to authorize any deviation from the contract documents or assume any of the responsibilities of the constructor. The recommended options available for oversight support include Alternative Remedial Contract Strategy (ARCS), the US Army Corps of Engineers (USACE), or the Bureau of Reclamation.

POTENTIALLY RESPONSIBLE PARTIES

All work is done under the PRP's control and they are responsible for the long term performance of the remedy. The PRPs provide the necessary input to effect site remediation,

whether done with "in-house" resources, or through the use of hired contractors. The PRP assigns the work to the RD Professional, the RA Constructor, and the IQAT.

Remedial Design Professional: The primary function of the RD Professional is to provide the PRP with a set of plans and specifications for the proposed remediation which meets the requirements and is within budget and on schedule. Major tasks which the RD Professional may be responsible to perform include the following:

- Collect, evaluate, and interpret data required for the design;
- Provide a complete engineered design of the RA;
- Identify and obtain easements, permits, and approvals necessary for the RD/RA;
- Update plan and specification changes during construction.

In addition to the above responsibilities, the RD Professional will usually be required to provide a Resident Engineer to act as the PRP's agent on the site during construction. This person is one of the most critical in establishing and maintaining construction quality on the site. Typically the Resident Engineer is required to:

- Serve as the PRP and RD Professional's liaison with the RA Constructor;
- Maintain job records, review submittal schedules, and log shop drawings and samples;
- Review work performed, disapprove defective work, and verify that test and start-up procedures are accomplished;
- Prepare progress reports, make recommendations concerning inspections and tests, and draft change orders;
- Conduct the pre-final and final inspection of completed work; and
- Prepare a Project Closeout Report.

Remedial Action Constructor: The RA Constructor's primary responsibility is to meet the quality standards specified by the design and accepted trade practices. The constructor is responsible to the PRP for implementing and maintaining the QC program. The following is a list of responsibilities that generally apply to RA Constructors on most jobs:

- Obtain all necessary construction permits and approvals;
- Construct the project according to the plans and specifications;
- Provide progress schedules and other required submittals;
- Maintain "Record Drawings" at the site, properly noting all changes made during construction;
- Be responsible to the public and to site personnel for project safety;
- Implement and maintain a construction QC program; and
- Cooperate fully with inspection authorities.

Independent Quality Assurance Team: The IQAT members are representatives from testing and inspection organizations, *independent of the constructor*, that are responsible for examining and testing various materials, procedures, and equipment during the construction. Since the PRP is responsible for the QA of the remedy, the IQAT is retained by the PRP. Typical functions of the IQAT are to:

- Direct and perform tests for QA inspection activities;
- Verify that the Construction QC Plan is implemented;
- Perform independent on-site inspections of the work to assess compliance with project standards;
- Verify that equipment and testing procedures meet the test requirements; and
- Report to the PRP and EPA the results of all inspections.

MODEL SETTLEMENT AGREEMENT FOR REMEDIAL DESIGN/ACTION

The term "Settlement Agreement" used in this fact sheet refers to either an administrative order on consent or a judicial consent decree. It is a commitment by the PRPs that they will finance and perform the RD and RA in accordance with the provisions set forth in the Settlement Agreement.

EPA is developing a "Model Consent Decree for RD/RA" and a "Model Unilateral Order for RD/RA" to be used as a guide in preparing Settlement Agreements. These models will incorporate the essential provisions (e.g., submittal requirements and QA/QC requirements to include IQAT) to implement the guidance described in this fact sheet.

REMEDIAL DESIGN AND REMEDIAL ACTION OVERSIGHT

Figure 2 presents a flow chart illustrating the RD/RA process steps required for the successful implementation of the focused approach to oversight. The "diamonds" in the figure represent decision or review points that are the RPM's responsibility and are considered critical to the quality and success of the project.

An approval of any of the RD/RA work elements at any stage by EPA in no way guarantees the success or failure of the ultimate remedy. It merely assesses their acceptability with regard to RA goals in accordance with the Settlement Agreement. It does not warrant that the specified performance standards will be met.

REVIEW OF QUALIFICATIONS

The PRP is responsible for selecting the RD Professional, RA Constructor, and the IQAT

subject to the approval of EPA. EPA reviews and approves these selections by using the following criteria for guidance:

- Professional and ethical reputation;
- The principal and other responsible members of the design firm must be registered professional engineers;
- Experience and expertise in the type of design, construction, or QA activities required;
- Capability and resources to perform the required services within the time allotted; and
- Confirmation that the QA Team is truly independent and autonomous from the RA Constructor.

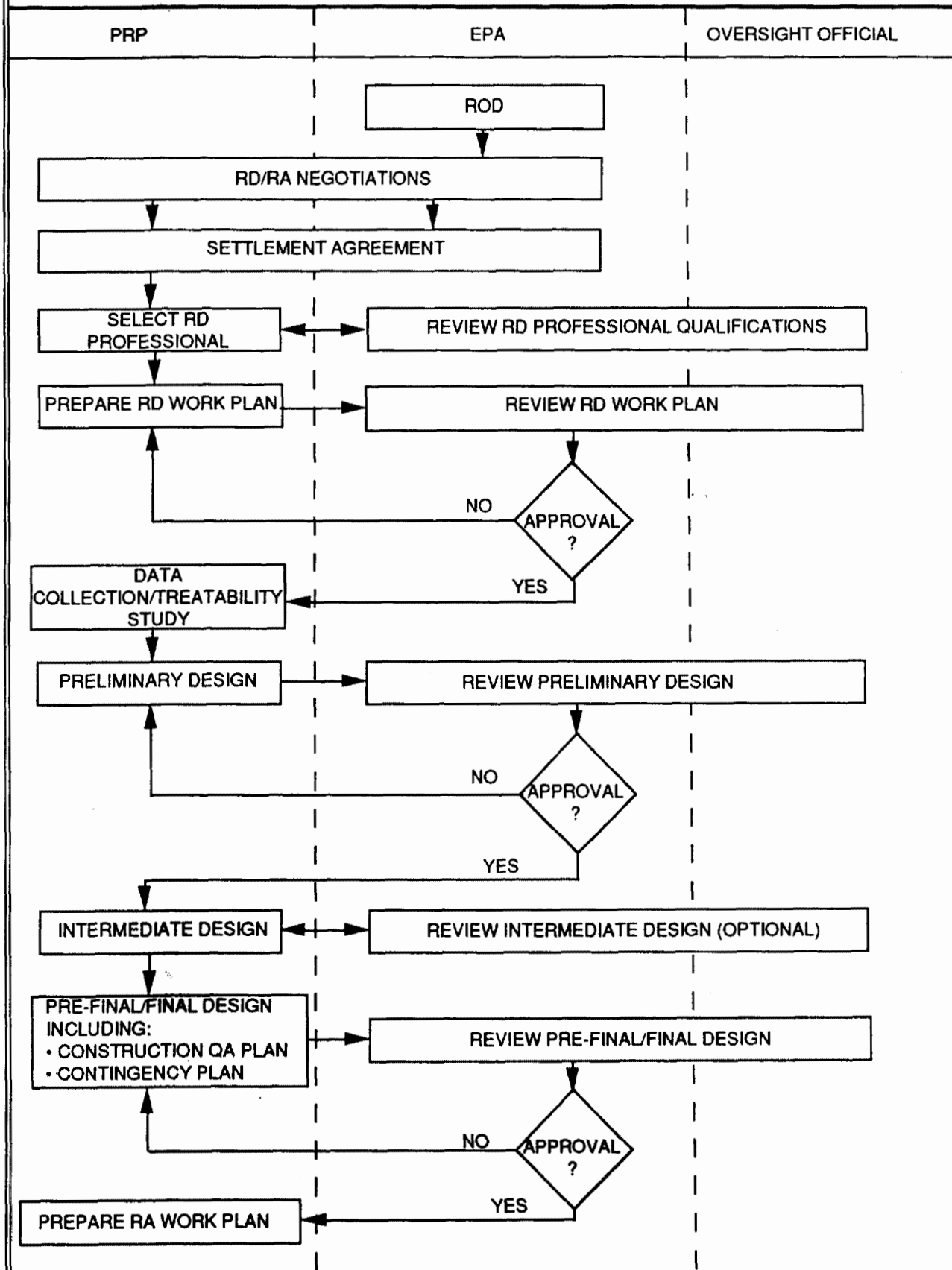
If a PRP elects to use "in-house" resources to implement the RA, it is inappropriate for PRP "in-house" personnel to also be used for QA. It is necessary for the QA Team be completely independent of the RA Constructor so the inspection is unbiased and objective. In this situation, it is preferable that EPA utilize the Oversight Official to provide independent QA services.

REVIEW OF REMEDIAL DESIGN AND REMEDIAL ACTION WORK PLANS

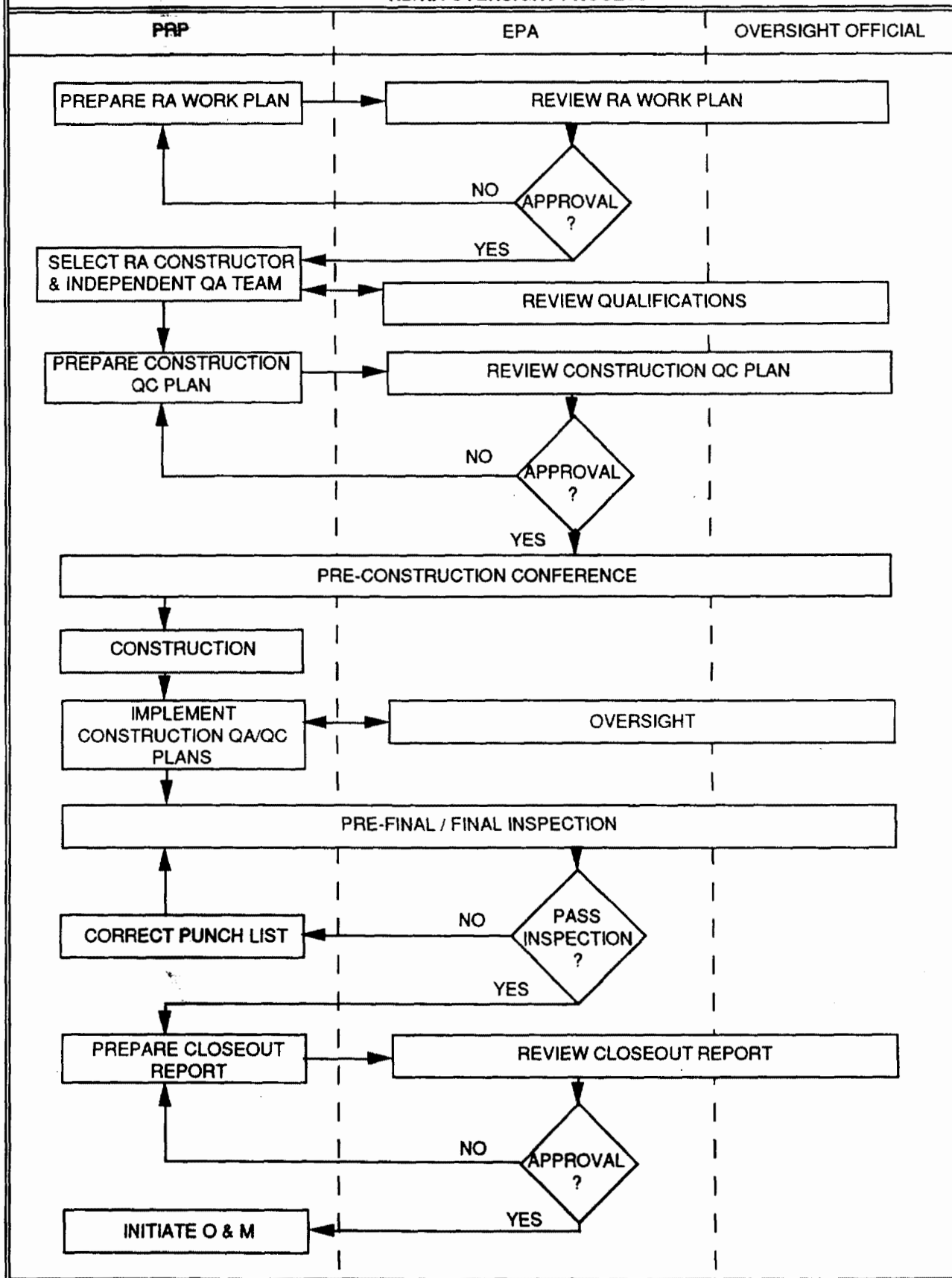
The RD and RA Work Plans are areas of focus for the RPM and Oversight Official. These plans are the basis for the PRP's approach to the implementation of the remedy. They should be reviewed for their thoroughness and approach, and to ensure they contain the following items:

- Tentative formation of the design and construction teams, including roles and relationships and the process for selection;
- A Health and Safety Plan for design and construction activities;
- Requirements for additional field data collection and treatability studies;

**FIGURE 2
RD/RA OVERSIGHT PROCESS**



**FIGURE 2 (Continued)
RD/RA OVERSIGHT PROCESS**



- A design and construction schedule;
- Design criteria and assumptions;
- Method to implement the Construction QA Plan, including criteria and composition of the IQAT;
- Strategy for implementing the Contingency Plan; and
- Requirements for project closeout.

DESIGN REVIEWS

In performing the review of the RD submittals, the Oversight Official and the RPM use their professional training to evaluate the adequacy of the design with respect to all environmental and public health requirements. All subsequent reviews are based on preceeding reviews with consideration of the following:

- Technical requirements of the ROD, Settlement Agreement, and ARARs;
- Currently accepted environmental protection technologies;
- Standard professional engineering practices;
- Applicable statutes, EPA policies, and regulations;
- Conformance with results of field data and treatability studies;
- Reasonableness of estimated quantities of materials specified based on known data; and
- Examination of the construction schedule for meeting project completion goals.

Preliminary Design Review: The preliminary design review is the *most critical technical review performed during RD oversight* since it sets the pattern and direction of the entire design process. The preliminary design submittal from the PRP should include the following elements:

- Design criteria;

- Project delivery strategy;
- Results of treatability studies and additional field sampling;
- Preliminary plans, drawings, and sketches;
- Outline of required specifications; and
- Preliminary construction schedule.

Intermediate Design Review: The intermediate design review is an optional review and would normally only be performed for larger, complex designs or when required by the Settlement Agreement. The design is reviewed to determine that comments from the preliminary design review have been incorporated.

Pre-Final/Final Design Review: The final design submittal package from the PRP should include the following:

- Final design plans and specifications;
- Operation and Maintenance (O&M) Plan;
- Field Sampling Plan (FSP) for construction of the project;
- Construction QA Plan. This plan describes the site specific components of the QA program to ensure the completed project meets or exceeds all design criteria, plans, and specifications; and
- Contingency Plan. This is written for the local affected population in the event of an accident or emergency at the site.

The approval of the final design is acceptance that the project may proceed to initiation of RA.

CONSTRUCTION QUALITY ASSURANCE AND CONTROL PLANS

The focused approach to RA oversight is directed at the implementation of the Construction QA and the Construction QC Plans. Quality is conformance to properly developed

requirements. In the case of construction contracts, these requirements are established by the contract specifications and drawings. QA is planned and systematic actions by the PRP to provide confidence that the completed remedy meets these requirements. The IQAT is used to provide this level of confidence to the PRP by testing and inspecting the work of the RA Constructor. Construction QC, i.e., the system to manage, control, and document compliance with requirements, is the responsibility of the RA Constructor.

The Construction QA Plan is normally prepared by the RD Professional and is submitted with the final design. It is the responsibility of the Resident Engineer to implement it through the IQAT. The use of the IQAT will provide for an unbiased implementation of the Construction QA Plan. The Construction QC Plan is prepared by the RA Constructor and it should be indicative of the scope and complexity of the work as well as the project requirements.

PRE-CONSTRUCTION CONFERENCE

The PRP will initiate a meeting prior to the start of construction on the project. The participants would include representatives of all parties involved in the RA. The purpose of this meeting is to establish the project scope and expectations, and define the roles and relationships of all parties.

IMMEDIATE DANGER AND EMERGENCY RESPONSE

In the event any action during the performance of the remedial activities causes or threatens a release which may present an immediate danger to the on-site construction workers, the PRP shall take actions in accordance with the Health and Safety Plan. If there is substantial danger to the off-site public health or environ-

ment, the Contingency Plan shall be implemented.

If the Oversight Official observes any activities presenting imminent and substantial endangerment, the authorized representative of the RA Constructor or PRP shall immediately be notified. During an emergency, the RPM and the Oversight Official should closely monitor the situation. EPA does have the authority stop work on the site if the conditions present an immediate danger to the public health or welfare or environment.

PRE-FINAL/FINAL INSPECTION

The PRP conducts the pre-final and final inspection of completed work with EPA, the Oversight Official, and other agencies with a jurisdictional interest. The purpose of the inspections is to determine that all aspects of the plans and specifications have been implemented, and to develop a punch list of items that have not been completed. A final inspection is conducted to verify all the items on the punch list have been corrected.

PROJECT CLOSEOUT REPORT

At the completion of the RA and correction of all punch list items, the PRP (usually the Resident Engineer) prepares a Project Closeout Report which certifies project completion. The report includes documentation substantiating that the performance standards have been met and also includes "Record Drawings" of the project. The Oversight Official reviews the Project Closeout Report and verifies that all changes and variations from the original contract drawings have been made on "Record Drawings". The RPM then initiates the project completion and deletion process.