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Ground Water & Engineering Forums

SUPERFUND TECHNICAL REVIEW PROCESS

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Introduction

The Ground Water and Engineering Forums were established by EPA professionals in the ten EPA Regional offices. The Forums are committed to the identification and resolution of scientific, technical, and engineering issues impacting the remediation of Superfund and RCRA sites. The Forums are supported by and advise OSWER's Technical Support Project, which has established Technical Support Centers in laboratories operated by the Office of Research and Development, Office of Radiation Programs, and the Environmental Response Team. The Centers work closely with the Forums in providing state-of-the-science technical assistance to EPA project managers. This paper was developed jointly by the Engineering and Ground Water Forums to address issues related to Regional technical review processes.

Need for technical review

In the spirit of the Agency's commitment to quality, it is essential to utilize all available resources to assure that technically appropriate and timely decisions are made regarding remedial actions at Superfund sites. Establishing a technical review process by in-house experts provides a cost-effective and consistent means to support the RPM in achieving this goal. Examples of expertise pertinent to the Superfund remedial process include hydrology/geology, engineering, toxicology (human health and environmental), and biology. The technical review process should incorporate all of these specialities and add supplemental members as appropriate for site-specific conditions.

Many potential problems can be averted during the RI/FS and RD/RA phases through an established technical review process. Guidance and direction in the scoping process, based on individual expertise and collective experiences with other sites, can efficiently direct the RI/FS and RD/RA to minimize replicative draft documents, unnecessary work, and delays. Since each technical person is responsible for his or her area of expertise at many sites (usually more than 20 sites), he or she can provide a quick link to RPMs with similar problems, relating site experiences and "lessons learned" without the necessity of formalized documents, meetings, and lengthy literature searches. In situations where there is limited information, the Technical Specialists can decrease the risk associated with the decision making process by providing a knowledgeable framework and basis for the decision.

Most Regions currently provide some form of technical expertise or review process for major Superfund decision steps. Each Region's technical review personnel profile is described in the table on the following page. Examples of specific technical review procedures now being used are outlined in the final section of this paper.

Recommendations

Although technical reviews are being conducted in some Regions, it is recommended by the Ground Water and Engineering Forums that a mandatory technical review process be implemented in the Superfund Program on a consistent basis within each Region. The process should include establishing a review team or teams, defining the procedures for reviewing deliverables, and specifying a means of resolution of significant differences between the reviewer and the RPM. The following procedures should serve as a guideline for establishing and implementing the review process.

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Regional Technical Review Capabilities

Region	Formal TR Process	Separate TS Group/ Division	# of Hydro/ Geos	# of Engineers	# of Toxs	# of Bio/Ecos	# of NPL Sites
I	Yes	Yes Waste	4.5	1	3	1	85
II	Yes	Yes Emergency & Remedial	2	1	3	1	203
III	Yes	Yes Waste	7	1	6	1	150
IV		No					154
V	Yes	Yes Waste	5	1	3	2	261
VI	Yes	No	0.1	0.5	2	1	75
VII	No	Yes	2	0	0	0	59
VIII	No	Yes Waste & Water	1.5	0	3	0	47
IX	Yes	Yes ESD	5.5	1	2	1	68

1. The Team

The review team for the RI/FS and RD/RA phases could consist of two parts:

- The *Technical Review Team*, which usually consists of the RPM, hydrologist or geologist, toxicologist, engineer, and ecologist; and
- The *Expanded Review Team*, which would include the Technical Review Team, community relations coordinator (CRC), staff attorney (ORC), laboratory/QA/QC personnel (ESD/CRL), representatives from RCRA/Surface Water, Air, and other applicable programs, the Biological Technical Assistance Group (BTAG), and other technical experts (e.g., ORD), as appropriate. The Expanded Review Team could also include the State and Headquarters representatives, in a consultation role as necessary.

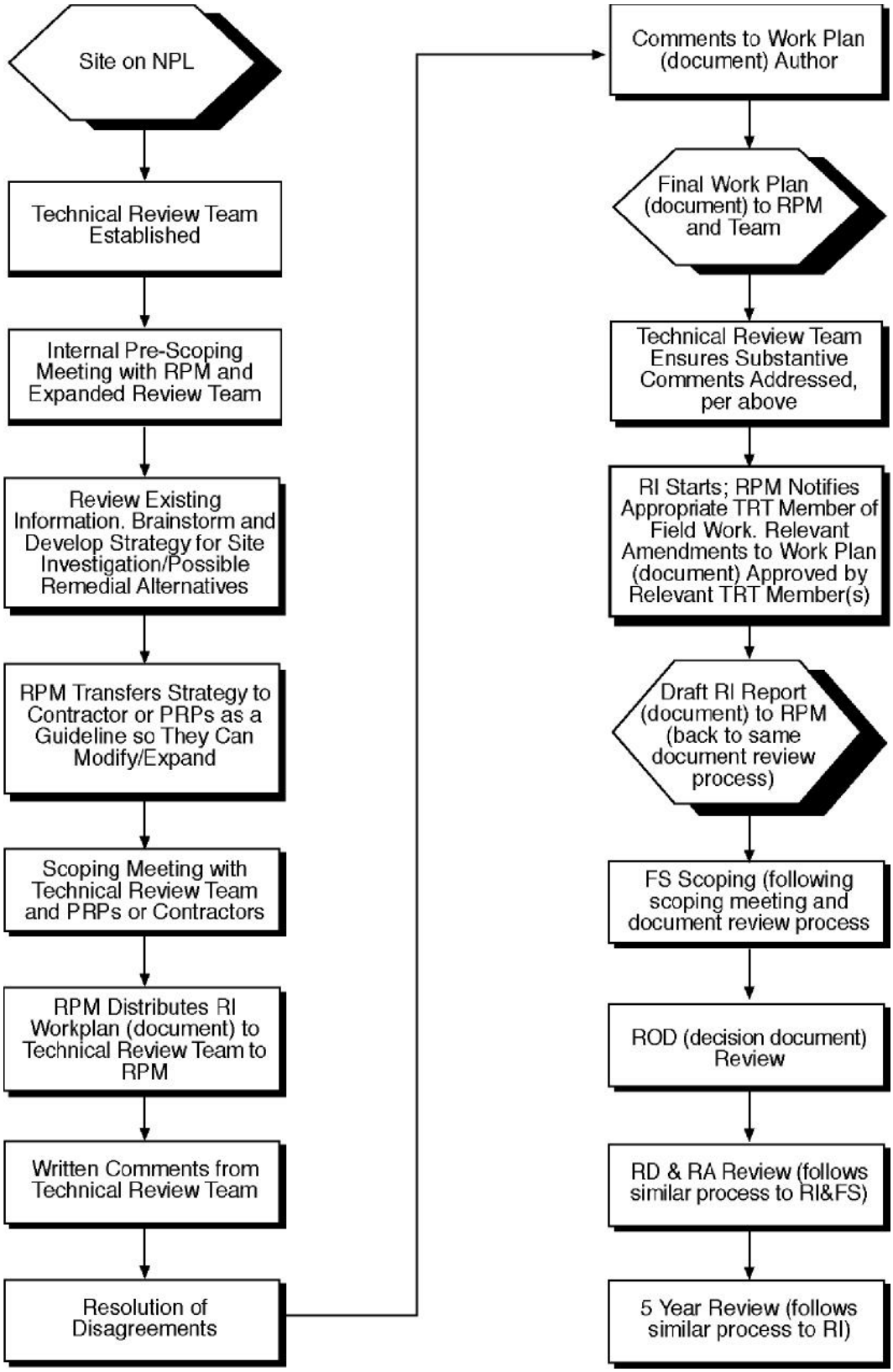
A separate *Management Review Team* (MRT) consisting of Section and Branch Chiefs, a Division Director, and possibly the Regional Administrator (RA) may provide additional review of significant products.

The RPM would coordinate the team's activities through RI/FS and RD/RA activities. In order to ensure appropriate and timely input, the RPM would be responsible for planning team member involvement, incorporation of team input, and ensuring adequate resolution of conflicts or disagreements.

2. The Procedure

The following Technical Review Flow Chart summarizes the technical review process for the development of the RI. The steps outlined in the chart are applicable to each of the successive steps in the Superfund decision-making process. The chart is intended to be generic, so that it may be applicable to any one of the example documents or activities (see shaded box).

Technical Review Flow Chart



* Note: The chart illustrates the review process for the development of the RI and is intended to be applicable to each of the successive steps in the Superfund decision making process.

Examples of Documents (or Relevant Portions thereof) for Review Process:

- Scoping Document
- RI/FS Work Plan
- RI/FS Consent Order
- RI/FS Sampling and Analysis Plan/Remedial Investigation Site Operations Plan
- RI/FS Work Plan Amendments
- Remedial Investigation Report
- Feasibility Study Report
- Treatability Study Report
- Proposed Plan (PP)
- Record of Decision (ROD)
- Focused Feasibility/Pre-Design Work Plan/Pre-Design Technical Summary
- RD/RA SOW/Consent Order
- RD/RA Work Plan
- RD/RA Quality Assurance Project Plan and Sampling and Analysis Plan
- Design Submittal (0-100%)
- Construction Report (e.g., Change Order)
- Completion Report
- System Performance Monitoring Data
- Five Year Review

Other Activities Involving Relevant Team (Technical Review or Expanded Review Team) Members:

- RI/FS and RD/RA pre-scoping and scoping meetings
- Technical site status meetings with contractors and PRPs
- Negotiation sessions which involve technical issues
- Regional and HQ briefings
- Public meetings
- Site Visits
- Fieldwork Changes/Oversight
- Fate and Transport Modeling Efforts

3. The Flow of Work

It is recommended that the RPM submit major documents to the appropriate Technical Review Team members for review and comment. Major documents are defined as Work Plans (RI/FS and RD/RA), RI/FS reports, Proposed Plans, RODs, Design Submittals, Completion Reports, and other technical documents, as indicated in the shaded box. Information regarding the relative priority and the scope and detail required should be supplied to the reviewer. Comments by the reviewer to the RPM should be provided in a standard timeframe, to be established within each Region. Expedited reviews could be requested on an as-needed basis.

4. Resolution of Significant Differences

a) If the Technical Review Team's comments are acceptable to the RPM, the RPM should provide the Team with a copy of the comment package that is forwarded to the contractor or PRP.

B) If the RPM disagrees with one or more of the comments submitted by the Technical Review Team member, the RPM should consult with the Technical Review Team member to try to reach agreement prior to finalizing the comment package. If the RPM and the Technical Review Team member are unable to reach concurrence, the RPM should make a judgement on which comments are to be included in the final comment package. However, it should be required that the RPM submit a memo to the file to document his or her justification for the decision. This action ensures project continuity in the event of staff changes.

If the disagreement involves important or precedent setting measures, the disagreement should be resolved by the appropriate manager(s). Disagreements that cannot be resolved at the staff level should be elevated to the Section Chiefs/Unit Leaders; disputes between staff and management should be elevated to the next level.

Conclusion

Today's Superfund Program focuses on streamlining the investigatory approach and remedial design, while continuing to make sound technical decisions for remedial actions. A Technical Review Team, strengthened by in-house technical specialists who play an active role in scoping and reviewing the work products, can significantly help meet this challenge in a timely, consistent, and cost-effective manner.

Examples of Current Regional Technical Review Processes

Region I: Technical support activities are divided into four groups (public health risk, environmental risk, hydrogeology, and geotechnology). Each site has staff personnel from each group assigned to it. Support coverage includes: development of scopes of work, negotiation support, review of work and field operations plans, interim deliverables, RI/FS reports, assistance in selection of preferred remedies, and writing RODs. Individual RPMs are responsible for alerting the technical staff to support needs, incorporating staff comments, and follow-up on response packages. Technical support sign-off on the above is not required. There are mechanisms for elevating technical issues to upper management.

Region II: RPMs are directly responsible for coordinating review of site-specific Superfund documents. Documents are generally reviewed by other divisions, the State, and Superfund's Pre-Remedial and Technical Support (PRTS) Section. Documents may also be reviewed by Headquarters, ATSDR, NOAA, ACE, and others.

Requests for internal review are sent under branch chief signature. Specific turn-around times have not been established; RPMs often use the timeframes agreed to between EPA and States for review of major documents. The RPM uses his or her professional judgement to determine which comments to incorporate into the final EPA review. Differences of a technical nature can be presented to management for resolution.

Region III: Each site has a hydrologist, toxicologist, and biologist assigned to it. At a minimum, the RPM is to send all major documents to this team for review, and written comments are provided to the RPM within a standard review period. Differences of a technical nature can be presented to management for resolution.

Typically, the RPM involves the appropriate technical specialists in pre-scoping and scoping meetings, site status meetings, technical aspects of negotiation, regional briefings, public meetings, site visits, field oversight, and modeling efforts. When appropriate, documents are reviewed by other divisions, the State, Headquarters, ATSDR, NOAA, ACE, and others.

Region V: RPMs send RI/FS work plans to the technical support section (TSS) for review. There is no sign-off of the work plans by the TSS as requested by the RPMs and other technical personnel. Technical specialists may also be involved in scoping meetings, site visits, etc., as requested by the RPM.

RPMs send all major deliverables (RI/FS work plans, draft and final RIs and FSs, and RODs) to other EPA program elements (Water Division, Air Division, RCRA, etc.) For identification of issues related to the other programs and ARARs.

Region VI: Technical reviews are conducted by toxicologists, an ecologist, and air specialists. A civil engineer and hydrogeologist spend only part of their time reviewing pertinent documents on an as-needed basis.

However, the RPM provides proposed plans, RODs, workplans, and design documents to an RPM committee as part of a peer review process. Comments are provided either orally, or in written form. The follow-up process for comments is dependent on the committee providing the review.

Region VII: Ground-water technical support is available to RCRA and CERCLA project managers from the RCRA Hydrogeologic section. Each RCRA site has a Project Officer, Hydrogeologist, and staff attorney assigned to the project. A Superfund RPM may request assistance from the Hydrogeologic section and a hydrogeologist will be assigned to the site (assuming adequate resources are available).

Standard review times have been established for the review of major deliverables by the hydrogeologist. The standard review times can be extended or compressed, as needed, by a memorandum containing specific justification. Disagreements between the Project Officer and the hydrogeologist on technical issues are resolved at the lowest level possible. Comment letters to a facility will have the concurrence of the appropriate team members.

Region VIII: There is no formal review process in place. Some documents are reviewed by a toxicologist or hydrologist as requested by the RPM.

Region IX: Formal peer review in Region IX is encouraged at several stages of the Superfund investigation. Principally, these include: scoping of the RI/FS workplan; completion of the draft RI and prior to the preparation of the detailed analyses of alternatives in the FS; and prior to preparation of the proposed remediation plan. Additional peer review points may be decided on a site-by-site basis. Although there is no formal policy, the RPM decides if he/she would like the opinion of one of the Regional technical professionals (e.g., hydrogeologist, toxicologist, engineer, etc.).

The RPM, in consultation with his/her section or branch chief, selects the tentative composition of the review team members. This may include other RPMs with similar sites, Branch/Section Chiefs, senior RPMs, on-scene coordinators, and representatives from the Technical Support Section, Contracting Office, RCRA program office, Community Relations Coordinators, Office of Regional Counsel, Water Management Division, Air & Toxics Management Division, and Environmental Services Division. Personnel from other State, Regional, and Federal offices may also be consulted, as well as Citizen Action Committees, the general public, PRPs, contractors, and Technical Assistance Grant recipients.

Region X: Region X has a technical support staff in the Environmental Services Division (ESD), which consists of public health risk, ecological risk, hydrogeology, and engineering expertise. The RPM has the option to utilize technical support in ESD, contractors (TES and ARCS) or a combination of ESD and contractors.

Formal requests for review of documents can be made through the ESD work request system, with review dates which are negotiated between the RPM and the technical staff.