

Improving Five-Year Reviews at Federal Facility Superfund Sites – 14288

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ABSTRACT

This paper highlights the development of a new streamlined and more efficient process for federal facility writers and reviewers (Environmental Protection Agency (EPA) and state regulators) in preparing, submitting, and approving Five-Year Reviews as required by the Comprehensive Environmental Response, Compensation, and Liability Act. To accomplish this task, the EPA teamed with the Departments of Energy, Interior, and Defense and its service components (Army, Navy, Air Force, and the Office of the Secretary of Defense) to form a Five-Year Review Interagency Workgroup. To improve the Five-Year Review process, the Workgroup identified best management practices, highlight key aspects in the 2001 *Comprehensive Five-Year Review Guidance*, and received feedback from EPA Regional Project Managers who review Five-Year Review reports. Based on this information, the Workgroup suggested several changes in: preparing to write the Five-Year Review report, collecting data, assessing protectiveness, writing the FYR report, and submitting the report to EPA. To inform federal facilities of these changes, the Workgroup developed several products (training courses, videos, and executive summary and factsheet templates) for writers, site managers, communities, and regulators to use. These products will educate communities on the review process and provide training for the writers and reviewers. Together, these products make preparing, submitting, and approving Five-Year Reviews more consistent and streamlined.

INTRODUCTION

During the past two years, the Environmental Protection Agency (EPA) in collaboration with other federal agencies worked together to provide writers (federal facilities) and reviewers (EPA and state regulators) of Five-Year Reviews (FYRs) the tools and best management practices to make publicly available documents less technical and to produce consistent, streamlined, and less expensive reports.

EPA initiated the effort to streamline federal facility FYRs for two reasons. First, EPA's Office of Inspector General ¹(OIG) identified several issues with federal facility FYRs including: reducing the backlog of sites requiring five year reviews; improving national consistency; and, recommending that EPA's Office of Solid Waste and Emergency Response (OSWER) implement management controls to ensure that the recommendations in the report are being tracked, monitored, and implemented.²

¹ [*Stronger Management Controls Will Improve EPA Five-Year Reviews of Superfund Sites
EPA Should Improve Its Oversight of Federal Agency Superfund Reviews
Backlog of Five-Year Review Reports Increased Nearly Threefold*](#)

² The statute specifies (CERCLA §121(c)) that reviews will be done no less than every five years where waste remains in place.

Second, the EPA Regional Project Managers (RPMs), who review FYRs, identified ways to improve protectiveness statements. For example they said:

- One protectiveness statement should be issued for every operable unit (OU).
- A protectiveness statement should not be made if certain criteria are not met, such as:
 - a. Sites where no remedial action has been taken (no Record of Decision (ROD); no Remedial Action (RA))
 - b. An OU that was Unrestricted Use/Unrestricted Exposure (UU/UE) in the last FYR and still remains UU/UE.
- OUs that are still under construction should get a protectiveness statement of "will be protective."
- Choose protectiveness statements consistent with the FYR Guidance (2001 *Guidance* Section 4.5). It is common for five year review writers to choose the wrong protectiveness statement.
- A site wide protectiveness statement must be issued for sites that have reached construction complete. However, do not issue a site wide protectiveness statement if areas of the site are still under construction or if areas have not been addressed in the ROD.

To help resolve these issues, the EPA Federal Facilities Restoration and Reuse Office (FFRRO) formed the FYR Interagency Workgroup (Workgroup). EPA in collaboration with the Departments of Energy (DOE), Interior (DOI), and the Defense (DOD) and its service components (Army, Navy, Air Force, and the Office of the Secretary of Defense) developed a number of products and procedures to respond to many of the issues identified in both the OIG's reports and the RPM's recommendations. The Workgroup developed a number of best management practices (BMPs) that address how to: write a streamlined and more focused report, choose and support protectiveness statements; understand what the reviewer is looking for; and submit easily reviewed reports with fewer comments.

This paper is organized as follows:

- Preparing to Write the FYR Report
- Collecting Data
- Assessing Protectiveness
- Writing the FYR Report, and
- EPA Submission and Review Process

Many of these BMPs recommended here were taken from OSWER's 2001, [*Comprehensive Five-Year Review Guidance*](#), the OIG reports; and many recommendations came from federal facility writers, EPA reviewers, and members of the Workgroup. All of this information should be used in conjunction with the 2001 Guidance. The FYR Training course for writers and reviewers is available at the [FFRRO](#) web site.

PREPARING TO WRITE THE FYR REPORT

Get Up To Date

Before you begin visit the [Superfund](#) and [FFRRO](#) FYR web pages to stay up to date on recent supplements and newly developed tools and training resources. Also, be sure to check with your agency and state(s) for any related FYR tools or guidance documents and contact the state RPM and technical specialists within your agency to stay up to date on emerging contaminants and exposure pathways and new state or federal standards.

Develop a Schedule

You should develop a schedule to help plan, track, and manage the activities necessary to conduct, write, and submit the FYR report.

At a minimum, depending on the size and OUs, you should begin planning 3 years in advance of the statutory deadline to secure the funding and contractor support (see Integrated Project Team) you will need to complete the review process. You should begin data collection and writing the report at least 12-18 months ahead of the due date. You may need to make this timeline shorter or longer depending on the size and complexity of your site, whether you elect to have public meetings or comment periods, and weather conditions, such as snow storms, that may cause delays in the review process.

You should also reach out to the EPA and State Project Managers early in the process to establish a date for submittal of a draft FYR report. This will allow EPA and State Project Managers time to review the draft report and resolve disagreements prior to the review's statutory deadline. (For more information see: OSWER 2001 *Comprehensive Five-Year Review Guidance*, Section 3.2: How should I develop a review schedule?)

Assemble an Integrated Project Team

Two to three years before the FYR is due, it is very important that you assemble an Integrated Project Team.

The level of assistance and expertise needed to conduct the review will vary for each site and installation. Potential members of an Integrated Project Team can include: technical experts, such as hydrogeologists or engineers, an institutional or land use control coordinator, legal counsel, a site community liaison, federal, state, and tribal representatives, realty specialists and land trustees.

The lead agency Project Manager should engage the site team early in the review process and encourage constant communication between team members. This allows for real time input from environmental regulators, legal representatives, and others, and helps to identify and address issues proactively instead of waiting until later in the review process. (For more information see: OSWER 2001 *Comprehensive Five-Year Review Guidance*, Exhibit 3-1: Potential Members of the FYR Team)

Crosswalk Table

During the planning stage, the lead agency Project Manager would benefit from developing a summary table to serve as a starting point and scoping tool for the FYR process. The table will help the site team distinguish between the OUs and remedies being evaluated in the review.

Developing a table (see TABLE 1) helps frame the conversation on the FYR by allowing team members to identify the data and documents they will need to assess and determine protectiveness. For example, the team can discuss what tables and maps will be needed to support the protectiveness statements for each remedial action objectives (RAOs) and remedy listed in the table. The team should also discuss what OUs will be covered as part of the FYR, what data gaps exist, who to interview, and other relevant sources of information.

TABLE 1. OUs With Protectiveness Statements

OU	Facility's Name	Common Name	Decision Date	RAOs	Remedy
OU1	OT020	Sitewide GW plumes	9/29/94 Action Memo 8/30/04 ROD	Prevent exposure to GW > MCL Restore GW	MNA ICs
OU2	ST022	Sump Leach Field	8/30/97 ROD 9/30/02 ESD	<ul style="list-style-type: none">• Reduce GW concentrations• Prevent Plume expansion• Prevent exposures to HI>1 or risk >10⁻⁵	MNA ICs

Acronyms Used in Table 1. OU – Operable Unit; GW- Ground Water; ROD-Record of Decision; MCL-Maximum Contaminant Level; MNA-Monitored Natural Attenuation; ICs-Institutional Controls; ESD-Explanation of Significant Differences.

The table shown here is organized by OU but also lists the facility name, common name, decision date, and reason.

Also, this table can be used as a planning tool for the team to identify those OUs which should not be evaluated in the FYR report. In general, if a remedial action has not been selected for an OU or site and it has been determined that the OU or site meets the National Contingency Plan's definition of UU/UE, then the ROD or site should not be evaluated in the FYR.

COLLECTING DATA

Community Engagement

The lead federal agency Project Manager should work with your site community liaison to develop a communication strategy and notify the community both before and after the FYR.

Issuing a public notice in the newspaper is the most common way to notify surrounding communities that you are preparing to conduct a FYR at a nearby federal facility. You can also use your facility or installation's webpage and local radio or TV stations to announce the review. If your site has an active community group, you should notify the public at the next community meeting.

The lead federal agency project manager should also interview community members as part of remedy assessment. Because community members live close to these sites, they can offer valuable input about the day-to-day realities at a site and play an important role in the long-term stewardship of Federal facilities. Adjacent property owners or owners of off-site property that may be affected by contamination can be especially useful community members to interview. Local government officials are also important to interview, especially if they are implementing institutional controls (ICs).

The FYR Interagency Workgroup recently developed a set of FYR Community Tools to help site managers at federal facilities explain to surrounding communities the purpose and findings of a FYR. These tools include a video on what is a five-year review, a factsheet template, and a template for the executive summary. Community meetings are a great platform to show the short video that explains the purpose and process of a FYR review. And once you have completed the review, the new factsheet template will help you organize and summarize the most important findings from the report. The factsheet can also be distributed at community meetings. You can find these tools on the [FFRRO FYR webpage](#) under "Training and Tools ." (For more information see: OSWER 2001 *Comprehensive Five-Year Review Guidance*, Appendix A: Community Involvement.)

Document Review

Another step in remedy assessment involves reviewing relevant documents and data.

Some examples of documents to review include remedy decision documents such as RODs and explanation of significant differences (ESDs); implementation documents such as Remedial Action Reports; Remedy Performance documents such as inspection reports; operation and maintenance (O&M) reports; institutional control instruments such as restrictive covenants and documents implementing land use controls; legal documents such as deed notices or Federal Facility Agreements (FFAs); and optimization reports.

Site Inspection

Site inspection is another phase of remedy assessment. The site inspection should be conducted by an objective party (i.e., one who has not performed the remedial inspection or the RA) and occurs no more than 9 months from the expected signature date of the report. You should ask the state and EPA representatives if they would like to be present for the inspection.

You can use the site inspection checklist in Appendix D of the 2001 *Comprehensive Five-Year Review Guidance*, or other agency or site-specific checklists as a guide when you conduct the site inspection. Since site inspections are conducted to visually confirm and document the conditions of the remedy, site, and surrounding area you may want to use photographs to document actual site conditions. (For more information see: OSWER: 2001 *Comprehensive Five-Year Review Guidance*, Section 3.5.3; Appendix D: Five-Year Review Site Inspection Checklist.)

ASSESSING PROTECTIVENESS

Critical Information Path

This next section, “Assessing Protectiveness,” goes to the main purpose of the FYR. When writing the FYR, the Project Manager should always keep in mind the critical information path when determining protectiveness and providing support for protectiveness statements.

The critical information path (see Figure 1) which was developed by EPA and recommended by the Workgroup is a thread which should run throughout the report, from the RAOs, through the technical assessment, to the protectiveness statement. This is not specified in the guidance, but it helps focus the message and keeps the FYR on track. Without this simple concept, reports can wander, are often too long, and the protectiveness message does not stand out.

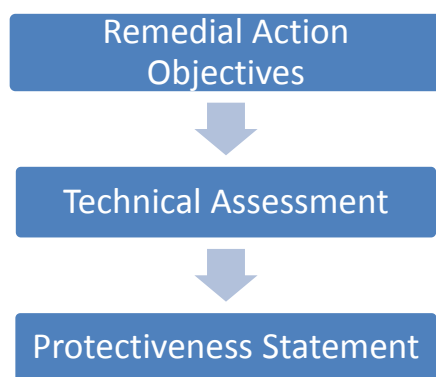


Fig. 1. Critical Information Path

EPA and State Project Managers will look to see if the RAOs and technical assessment tell a complete story, making the issues, recommendations and protectiveness statements clear.

Protectiveness Technical Questions A, B, and C

Remember, the purpose of the FYR is to assess the protectiveness of a remedy.

Use the information you gather during the community engagement, document and data review, and site inspection to answer technical questions A, B, and C. This provides a systematic way to assess protectiveness. It is important to always think about the RAOs as you answer each question. The RAOs should be written to focus on the risk drivers, the land use, and the purpose of the action. If the RAOs are not specific, it may be difficult to determine if the remedy remains protective.

Question A asks if the remedy is functioning as intended by the decision documents. As you answer Question A you should describe how performance measures up to the RAOs.

Question B asks if the exposure assumptions, toxicity data, cleanup levels, and RAOs used at the time of remedy selection are still valid. You will need to consider regional screening levels and land use changes to answer Question B. You should: use the [Regional Screening Levels](#) website, for example, as a screening tool; talk with your agency's toxicologist; visit the [FFRRO](#) webpage for the new and emerging contaminants; consult the [Integrated Risk Information System](#) (IRIS) webpage to stay up to date about toxicity changes; and, visit the state agency web page regarding cleanup levels or involve the state regulator. Changes in standards or land use should again be viewed in light of a protectiveness determination and whether existing RAOs (if achieved) will be protective. A change, by itself, doesn't trigger a yes or no answer on protectiveness – one must consider further whether unacceptable risk, a new exposure pathway, or other changed circumstances causes the selected RAOs not to represent protectiveness.

Question C asks if any other information has come to light that could call into question the protectiveness of the remedy. For example, a flood, earthquake or wildfire can alter the release or distribution of chemicals of concerns, potentially affecting the protectiveness of the remedy. (For more information see: OSWER 2001 *Comprehensive Five-Year Review Guidance*, Section 4.0 Assessing the Protectiveness of the Remedy.)

What Does the EPA Reviewer Look for in a Protectiveness Statement?

When you prepare your section on protectiveness, make sure you answer the following questions because the EPA reviewer looks to see:

1. Is there one protectiveness statement per OU?
2. Did the writer select the appropriate protectiveness statement?
3. Does the technical assessment (Questions A, B, and C) sufficiently support the protectiveness statement?
4. Is the protectiveness statement for each OU, and if applicable, the site wide protectiveness statement, consistent with the issues and recommendations in the body of the FYR?
5. Is the protectiveness statement written in a way that follows the format presented in the 2012 [Clarifying the Use of Protectiveness Determinations for CERCLA Five-Year Reviews](#) memo?
6. Is a site wide protectiveness statement included if a site is construction complete?

WRITING THE FYR REPORT

When assembling all of this information think of an “information pyramid.” Each level of the pyramid should contain less detail than the level below it. The report can speak to a broader audience if the messages from the more technical reports are distilled down to plain language relating to RAOs and protectiveness. The FYR report should be a logical summary of the documents, data, and information contained in the site file and report appendix.

Readers look mostly to summary documents, like the executive summary and fact sheets to get a quick and succinct synopsis of basic facts from the full report. The executive summary and fact sheet should be a summary of the most important findings from the FYR report. Remember that the audience for the executive summary and factsheet will be broad so you may want to alter your writing style and limit the use of acronyms or technical terminology.

The Workgroup developed a new [FYR Executive Summary Template and the Factsheet Template and Writer’s Guidance](#) as a starting point to help you organize and summarize your full report into a succinct and easy to understand document for the public. The Workgroup developed both the Executive Summary Template and the FYR Factsheet Template to help writers step back from all the site’s details to write these summaries.

Next, avoid including information that does not specifically address or describe protectiveness and can obscure key messages about protectiveness. Instead of repeating detailed information from an O&M report, or a long term monitoring report, distill the messages as they relate to the RAOs and protectiveness. Summarize the main points and then cite and link to supporting resources such as O&M reports, remedy optimization, and green and sustainable remediation reports.

Some additional ways to focus and streamline reports are to build an electronic document and use hyperlinks in the document that link to information and data either in other sections of the document or to external resources to allow readers easy access to the information without overloading the report with too many details.

Use tables, graphs, maps and diagrams to tell the main story and use text to tie images together and add information.

EPA SUBMISSION AND REVIEW PROCESS

The lead federal agency officially submits a draft FYR report to the regulatory agencies for comment by the EPA Region, EPA Headquarters, and technical and legal staff. The amount of review time for the regulatory agencies is usually based on the site’s FFA. Generally, the regulatory agencies will have 60 days to review and submit comments. Another 45-60 days is generally allowed for the final review.

During this time, the EPA RPM will consolidate comments from EPA Region, EPA Headquarters, and technical and legal staff then sent these comments to the lead federal agency. The lead agency will usually complete another draft that incorporates these comments.

As discussed earlier (see Develop a Schedule) by reaching out to EPA early in the process, this will allow EPA time to review the draft reports and resolve any disagreements well before the review's statutory deadline. This is especially true for resolving issues concerning protectiveness statements.

Once all comments are incorporated, the document will be finalized by the lead federal agency in a concurrence letter. EPA will concur on the protectiveness statement for each OU or issue its own protectiveness statement for each OU, as well as identify the issues they intend to track in the Comprehensive Environmental Response, Compensation, and Liability Act Information System (CERCLIS).

In CERCLIS, EPA will track issues and recommendations that affect current and future protectiveness of the remedy and will provide the due date for the next report. If the federal agency and EPA cannot agree on the protectiveness of the remedy, EPA may issue an independent assessment of protectiveness for the remedy.

CONCLUSION

The purpose of forming the FYR Workgroup was to recommend ways to streamline the process for preparing, submitting, and approving FYRs. By selecting BMPs, highlighting aspects in the 2001 Guidance, incorporating ideas from RPMs, and members of the Workgroup, the suggestions put forward when implemented by both the writers and reviewers will help to improve the FYR process.

You can prepare to write an effective FYR report if you: continually review EPA's web sites for updates, assemble an integrated project team two to three years before the FYR is due, layout a generous schedule for both your agency and for the reviewer, and draft a crosswalk table to assess the extent of the report.

When collecting data involve the community early on using the tools the Workgroup developed, be sure to review all relevant documents, and conduct a site inspection.

Most importantly use the *Critical Information Path* to focus on assessing protectiveness which is the main reason for writing FYRs. When you prepare your section on protectiveness, make sure the technical questions (A, B, and C) lead to the right protectiveness statement. Remember, the EPA reviewer looks to see if the RAOs and technical assessment tell the complete story.

Finally, develop an electronic FYR report with links, graphs, maps and tables to tell the main story and use text to tie this all together.

By following these recommendations, your FYR will be more focused, streamlined, and you will have fewer issues during the regulatory reviews.

List of Acronyms

BMPs	Best Management Practices
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
EPA	Environmental Protection Agency
ESD	Explanation of Significant Differences
FFRRO	Federal Facilities Restoration and Reuse Office
FYR	Five-Year Review
GW	Ground Water
IC	Institutional Control
IRIS	Integrated Risk Information System
MCL	Maximum Contaminant Level
MNA	Monitored Natural Attenuation
O&M	Operations and Maintenance
OIG	Office of Inspector General
OU	Operable Unit
RA	Remedial Action
RAO	Remedial Action Objective
ROD	Record of Decision
RPM	Remedial Project Manager
UU/UE	Unlimited Use/Unrestricted Exposure

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