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Federal Facility Five-Year Reviews

AUGUST 3, 2020
FEDERAL FACILITIES RESTORATION AND REUSE OFFICE
OFFICE OF SUPERFUND REMEDIATION AND TECHNOLOGY INNOVATION

FEDERAL FACILITIES ACADEMY 1

The purpose of this course is to discuss U.S. Environmental Protection Agency Superfund guidance on conducting five-year reviews (FYRs) as applied to federal facility sites on the National Priorities List (NPL) under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).

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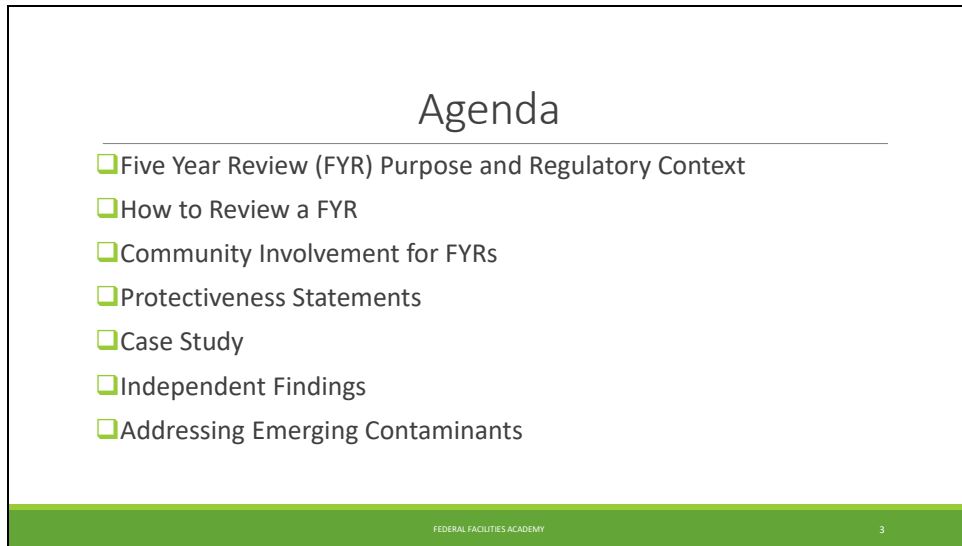
Group Poll

What experiences have you had with FYRs at Federal Facility Superfund sites?



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Agenda

- Five Year Review (FYR) Purpose and Regulatory Context
- How to Review a FYR
- Community Involvement for FYRs
- Protectiveness Statements
- Case Study
- Independent Findings
- Addressing Emerging Contaminants

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Regulatory Context

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FYRs under CERCLA and NCP

- ❑ CERCLA §121(c) states: "If the President selects a remedial action that results in any hazardous substances, pollutants, or contaminants remaining at the site, the President shall review such remedial action **no less often than each five years after the initiation of such remedial action** to assure that human health and the environment are being protected by the remedial action being implemented."
- ❑ National Contingency Plan (NCP), 40 CFR Part 300.430(f)(4)(ii) states: "If a remedial action is selected that results in hazardous substances, pollutants, or contaminants remaining at the site **above levels that allow for unlimited use and unrestricted exposure**, the lead agency shall review such action **no less than every five years after the initiation of the selected remedial action.**"

CERCLA §121(c) states the following: "If the President selects a remedial action that results in any hazardous substances, pollutants, or contaminants remaining at the site, the President shall review such remedial action no less often than every five years after the initiation of such remedial action to assure that human health and the environment are being protected by the remedial action being implemented. In addition, if upon such review it is the judgment of the President that action is appropriate at such site in accordance with section [104] or [106], the President shall take or require such action. The President shall report to the Congress a list of facilities for which such review is required, the results of all such reviews, and any actions taken as a result of such reviews."

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Purpose of a FYR

- ❑ A five-year review should determine whether the remedy at a site is or upon completion will be protective of human health and the environment.
- ❑ Follow up actions should be identified for any recommendations to ensure protectiveness.
- ❑ Five-year Review address the following technical questions:
 - Is the remedy functioning as intended by the decision documents?
 - Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RAOs) used at the time of the remedy still valid?
 - Has any other information come to light that could call into question the protectiveness of the remedy?

PROTECTIVENESS

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A five-year review should determine whether the remedy at a site is or upon completion will be protective of human health and the environment. Follow up actions should be identified for any recommendations that ensure protectiveness.

Five-year Review address the following technical questions:

- Is the remedy functioning as intended by the decision documents?
- Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RAOs) used at the time of the remedy still valid?
- Has any other information come to light that could call into question the protectiveness of the remedy?

A Content Checklist for Five-Year Review Reports and a Five-Year Review Site Inspection Checklist exist to guide the information that should be gathered. The checklists can be found in the 2001 Five Year Review Guidance <https://semspub.epa.gov/work/HQ/128607.pdf>.

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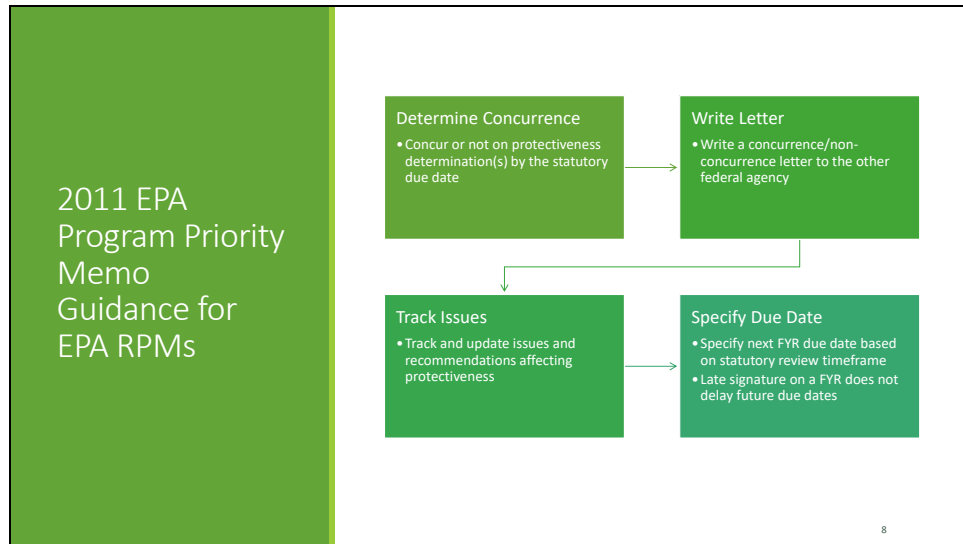
- Consistent with EO 12580, other Federal Agencies are responsible for ensuring that FYRs are conducted at sites where required or appropriate.
- For Federal Facility sites, the Lead Agency conducts the review, prepares the reports, and submits the report to EPA for review and comment.
 - EPA will either concur with the protectiveness determination or provide independent findings.
- The Lead Agency is responsible for ensuring that the recommendations and follow-up actions in the report are completed.

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Consistent with Executive Order 12580, other federal agencies are responsible for ensuring that five-year reviews are conducted at sites where required or appropriate. For federal facility sites, the lead agency conducts the review, prepares the reports, and submits the report to EPA for review and comment. The lead agency is responsible for ensuring that the recommendations and follow-up actions in the report are completed. Additional information can be seen at Five-Year Reviews and the Selected Remedy (<https://www.epa.gov/superfund/superfund-five-year-reviews>)

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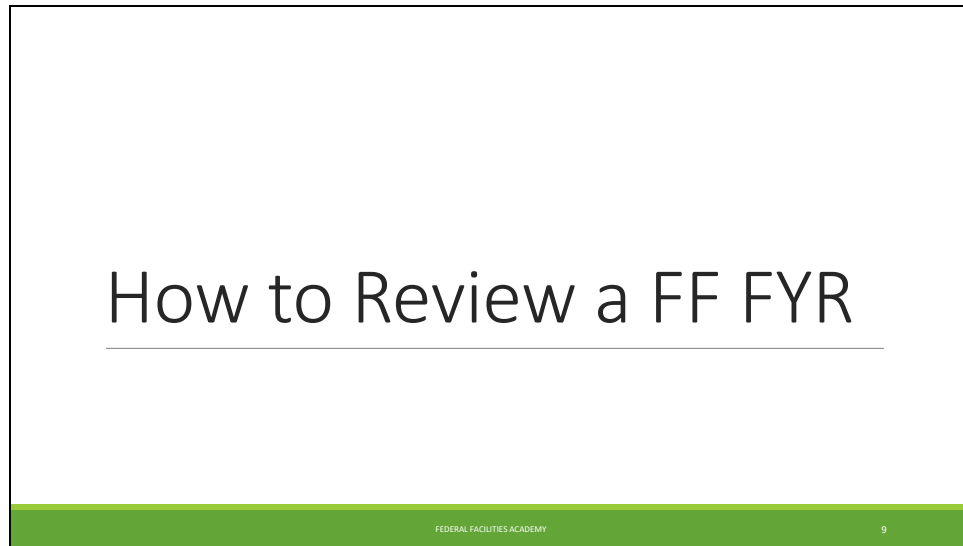
EPA issued the Program Priorities Memorandum for Federal Facility FYRs in August 2011 to help EPA RPMs improve the timeliness of the FYR review process and follow-through on issues at federal facility sites. Being aware of this policy can help you understand the EPA RPM's role in the process as they review and submit comments on FYR reports.

The policy provides guidance to EPA RPMs to:

- Concur or not on protectiveness determination(s) of facility OUs by the statutory due date. The RPM is encouraged to do this whether or not the report is signed and completed by the other federal agency.
- Write a concurrence or non-concurrence letter to the other federal agency following the completion of the FYR.
- Track and update the issues and recommendations affecting protectiveness.
- Identify the next FYR due date and generate due dates for all future FYRs based on the statutory review timeframe. This guarantees that FYRs are completed at least once every five years.

For more information: August 2011 Program Priorities Memorandum for Federal Facility FYRs (<https://www.epa.gov/fedfac/program-priorities-federal-facility-five-year-review>)

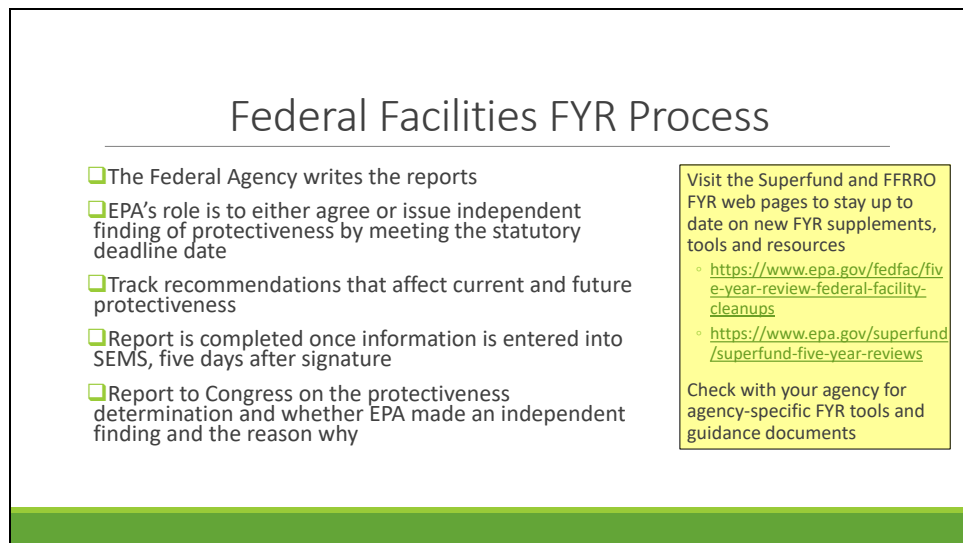
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How to Review a FF FYR

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Federal Facilities FYR Process

- ❑ The Federal Agency writes the reports
- ❑ EPA's role is to either agree or issue independent finding of protectiveness by meeting the statutory deadline date
- ❑ Track recommendations that affect current and future protectiveness
- ❑ Report is completed once information is entered into SEMS, five days after signature
- ❑ Report to Congress on the protectiveness determination and whether EPA made an independent finding and the reason why

Visit the Superfund and FFRRO FYR web pages to stay up to date on new FYR supplements, tools and resources

- <https://www.epa.gov/fedfac/fiv-e-year-review-federal-facility-cleanups>
- <https://www.epa.gov/superfund/superfund-five-year-reviews>

Check with your agency for agency-specific FYR tools and guidance documents

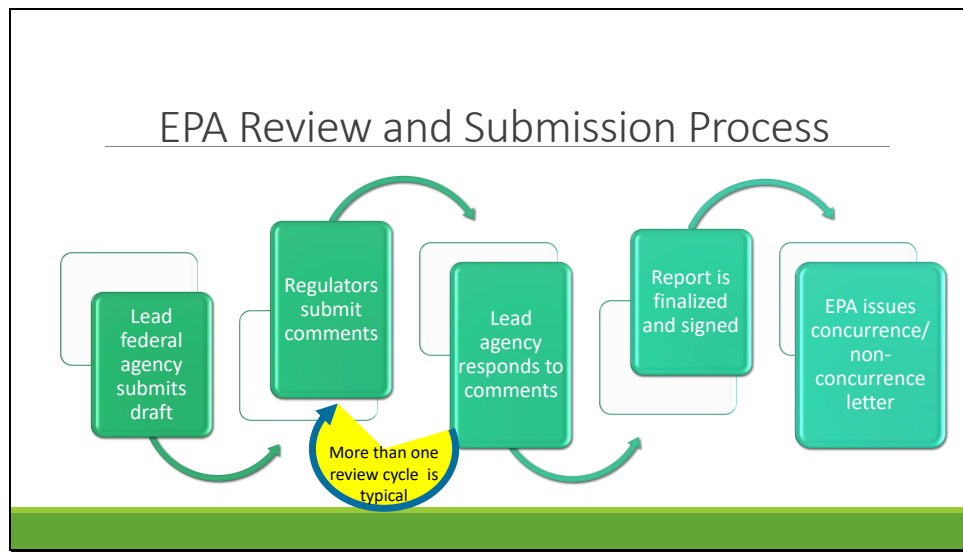
There are some key differences between federal facility and private site FYRs. First, the lead federal agency writes the report. EPA's role is to either agree or issue an independent finding of protectiveness. EPA provides a report to Congress on FYR protectiveness determinations and whether EPA made an independent finding, along with the reason for the independent finding. The report is completed once FYR information is entered into SEMS.

The writer should use OSWER's 2001 Comprehensive FYR Guidance as a guide throughout the FYR process. Since 2001, EPA has also issued several updates and supplemental guidance. These

supplements offer helpful guidance for addressing substantive issues and concerns. Visit the Superfund and Federal Facilities Restoration and Reuse Office (FFRRO) FYR web pages to stay up to date on recent supplements and new tools and training resources. Also be sure to check with your agency for any agency-specific FYR tools and guidance documents.

When starting the FYR, the lead federal agency project manager should contact the state RPM and technical specialists in their agency to stay up to date on emerging contaminants, exposure pathways and state and federal standards. Also be sure to check original sources such as the Integrated Risk Information System (IRIS) and relevant state websites. Early on, the FYR team should identify any new or changed regulations (applicable or relevant and appropriate requirements (ARARS)) and seek agreement on whether they impact RAOs or the protectiveness of the remedy.

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EPA's involvement in the federal facilities is different than the private Superfund sites. First, the lead federal agency submits a draft FYR report to the regulatory agencies for comment. 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, depending on the terms of document review under the FFA. During this review time, the EPA RPM will solicit comments from technical, legal and Headquarters staff. These comments will be consolidated by the RPM and sent to the lead federal agency. The lead agency will usually respond to comments and generate a final draft that reflects the regulatory comments.

The EPA RPM will review the final draft and submit any comments to the lead federal agency. Once all comments are addressed, the document will be finalized by the lead federal agency and circulated among the lead agency for signature. Depending on the signatory authority, EPA may need to sign the report and/or write a concurrence letter regarding the protectiveness determinations.

In the concurrence letter, EPA will concur or non-concur on the protectiveness statement for each OU; identify the issues that will be track in SEMS; and state the due date for the next review, based on the

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statutory requirement of an FYR due no less than once every five years. If the federal agency and EPA cannot agree on the protectiveness of the remedy, EPA may issue an independent assessment of the protectiveness of the remedy.

For complex sites with multiple operable units, obtaining signatures may take many months. A schedule agreement created and agreed to by reviewers (e.g., EPA, State, Tribes) during the planning stage may ensure draft reports are keyed into the final FYR report deadline.

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Preparing for a FYR

- FYR team members should work together early and often to get real-time input while conducting the review and writing the report
- Site teams (regulatory and lead cleanup agency) should develop a schedule to meet the statutory deadlines (12-18 months ahead of due date)
- Ensure FYRs are completed for the required OUs (those OUs where a remedy has been selected)
 - OUs without a remedy or other activities that are included in the report do not need a protectiveness statement
 - OUs with a remedy but which have not initiated the remedial action do not need to be included

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Lead agency project managers should engage the integrated project team early in the review process and encourage regular 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.

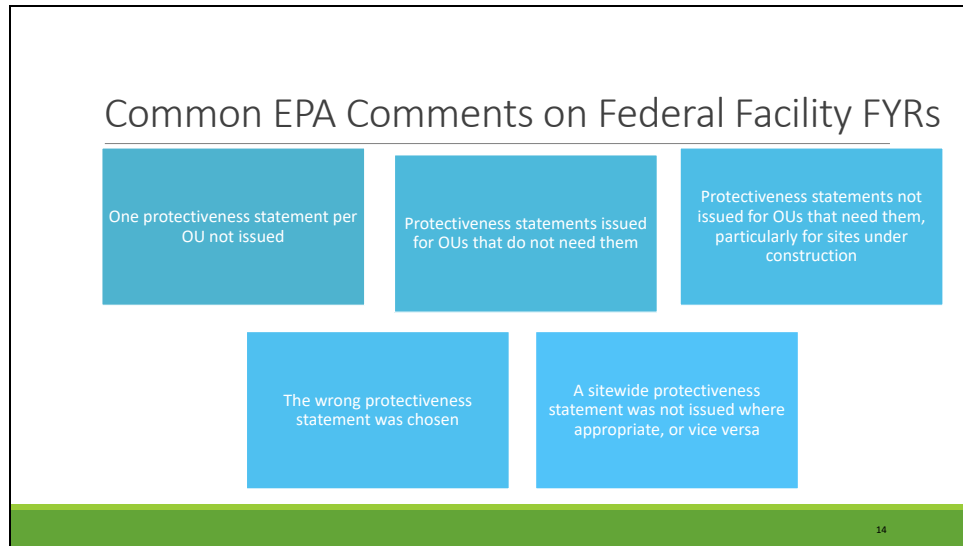
For federal facility sites, at minimum, the lead agency should begin planning three years in advance of the statutory deadline to secure the funding and contract support needed to complete the review process and check the expiration of the contractor's contract. Data collection and report writing should begin at least 12 to 18 months ahead of the due date. You may need to adjust this timeline, depending on the size and complexity of the site, whether you elect to have public meetings or comment periods, and any changes in site conditions, such as snow, that may cause delays in the review process. For more information: OSWER 2001 Comprehensive FYR Guidance, Appendix A

OU Evaluation Triggers			
Trigger	Y/N	Evaluate?	Notes
Is there a ROD (interim or final) for this OU?	N	N	
	Y	Y	Statutory review no later than five years after RA start
		Y	Y
Is there an Action Memo?	Y	Depends	Evaluate at NPL sites where no RA will occur
Does the OU meet UU/UE?	Y	N	Exceptions: - UU/UE for the first time, after statutory or policy triggers met - Where toxicity value changes indicate UU/UE site may no longer be UU/UE

This table shows that not all OUs need to be evaluated during the FYR process. Generally, a decision document should be in place and a remedial action initiated within the OU that leaves waste in place. If the OU has no decision document (ROD, Action Memo, Resource Conservation and Recovery Act (RCRA) decision, or equivalent), then a remedy has not been selected and an evaluation is not required. If an RA start has not occurred at an NPL site requiring a statutory review, a review is not required. If the criteria for review have been met anywhere in the OU, an evaluation should take place and a protectiveness statement issued. Where there are OU subareas suitable for UU/UE, they can be carved out of the evaluations.

UU/UE means the selected remedy will place no restrictions on the potential use of the land or other natural resources. Unless an OU meets UU/UE criteria, it should be evaluated once the trigger for evaluation is met. If an OU is not UU/UE at the time of the ROD/decision document, an evaluation should take place and a protectiveness statement issued. The first FYR Report after the OU meets UU/UE conditions should include an evaluation that supports UU/UE and include a protectiveness statement for that OU. The report should state that this is the last time the OU will be evaluated in a FYR. The OU would not be part of future evaluations unless toxicity or other factors affecting UU/UE are no longer valid.

Discretionary evaluations may be performed at OUs where they are not required by CERCLA statute or policy. These are performed at the discretion of the lead federal agency. For example, where a FYR is required under a RCRA corrective action. “No Further Action” and “No Further Remedial Action Planned” does not mean UU/UE. OUs deleted from the NPL will still need evaluation if they are not UU/UE. For more information: OSWER 2001 Comprehensive FYR Guidance, Section 1.5.1



This slide presents the top comments commonly made by EPA reviewers of federal facility FYRs. The top five comments all relate to the protectiveness statement. The purpose of the FYR is to assess the protectiveness of a remedy. Therefore, assessing, choosing, supporting and writing protectiveness statements correctly is a main focus for reviewers of FYR reports.

First, there should be one protectiveness statement for every OU evaluated during the review process. Not every OU requires an evaluation.

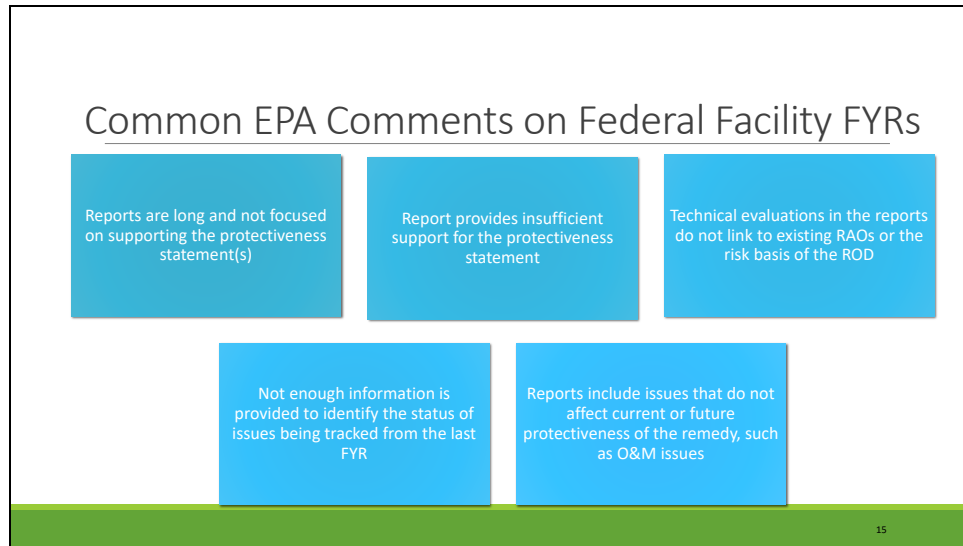
Second, a protectiveness statement is not needed if certain criteria are met, such as OUs where remedial action has not begun (no remedial action (RA), there is no Record of Decision (ROD)), or an OU was UU/UE in the last FYR and remains UU/UE. UU/UE means that the selected remedy will place no restrictions on the potential use of land or other natural resources.

Third, OUs still under construction need a protectiveness statement in a statutory review. In policy reviews, follow-on construction activities after a ROD Amendment will also get a review. The “will be protective” statement may apply.

Fourth, protectiveness statements should be consistent with FYR Guidance Exhibit 4-6 and the 2012 OSWER 9200.2-111 Memorandum. FYR writers often choose the wrong protectiveness statement. Decision logic for choosing protectiveness statements will be discussed later in the training.

Fifth, once a site achieves “Construction Completion,” a sitewide protectiveness statement is issued. A sitewide protectiveness determination is required and will generally be the same protectiveness determination as the least protective OU at the site (2012 OSWER 9200.2-111 Memorandum). This additional protectiveness statement should not be included until Construction Completion has been achieved, because all site remedies may not have been selected and put in place (FYR Guidance, Section 4.5.1).

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Sixth, the report should stay focused on the protectiveness message. Distill messages from operations and maintenance (O&M) and long-term monitoring (LTM) reports. Do not cut and paste. **Synthesize** information.

Seventh, the report needs to provide adequate rationale for the protectiveness statement(s). A remedial action should address one or more remedial action objectives (RAOs) and the technical evaluation should provide evidence that the remedial action is functioning as intended and meeting the RAOs.

Eighth, the technical evaluation must address the RAOs or risk basis of the ROD. Because remedies are selected to meet risk-based RAOs, these should be the basis of the issues and recommendations identified in the report.

Ninth, the “Progress since the last FYR” section should include adequate information about the status of issues being tracked since the last FYR. The choices are “continued in the next FYR,” where the issue would be carried over into the new issues list, “complete,” or “considered and not implemented.” This information is required in the Superfund Enterprise Management System (SEMS), EPA’s data tracking and project management tool.

Tenth, for FYRs for federal facilities, EPA may only track issues that affect current or future protectiveness. Identify an issue from any missing ROD elements required for long-term protectiveness (such as requiring the implementation of institutional controls (ICs) in a decision document).

Keeping these comments in mind will help you develop streamlined FYR reports that are easy to read and review.

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HQ Role and Responsibility

- ❑ May 3, 2007 Memorandum on Program Priorities
 - Improve the quality and consistency of reports by continuing to review 75% of draft reports
 - Continue training on five-year reviews during the Federal Facility RPM training and FF Academy
 - Follow-up with Regions on the implementation of the issues and recommendations identified in the report
- ❑ May 2018 memorandum and support for the annual Report to Congress
 - Identify sites where EPA made an independent assessment of the protectiveness
 - Regions send draft concurrence letters to HQ for review
 - Report the protectiveness of each site
 - Follow-up with the Regions where a site has a “not protective” determination


May 3, 2007 Memorandum on Program Priorities
(<https://semspub.epa.gov/work/HQ/174113.pdf>)

A Superfund FYR Report to Congress is prepared each fiscal year. (<https://www.epa.gov/superfund/superfund-five-year-review-annual-report-congress>)

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HQ FFRRO Review Process

- ❑ FFRRO Uses an ELMS Board to track FF 5YRs
 - Weekly Huddles
- ❑ Review Timelines
 - FFRRO strives to complete internal review of draft documents in **30 calendar days**
- ❑ Multiple FFRRO SMEs may help with review
- ❑ FFRRO Comments to RPM
 - Discuss and resolve concerns before RPM sends their comments to the OFA



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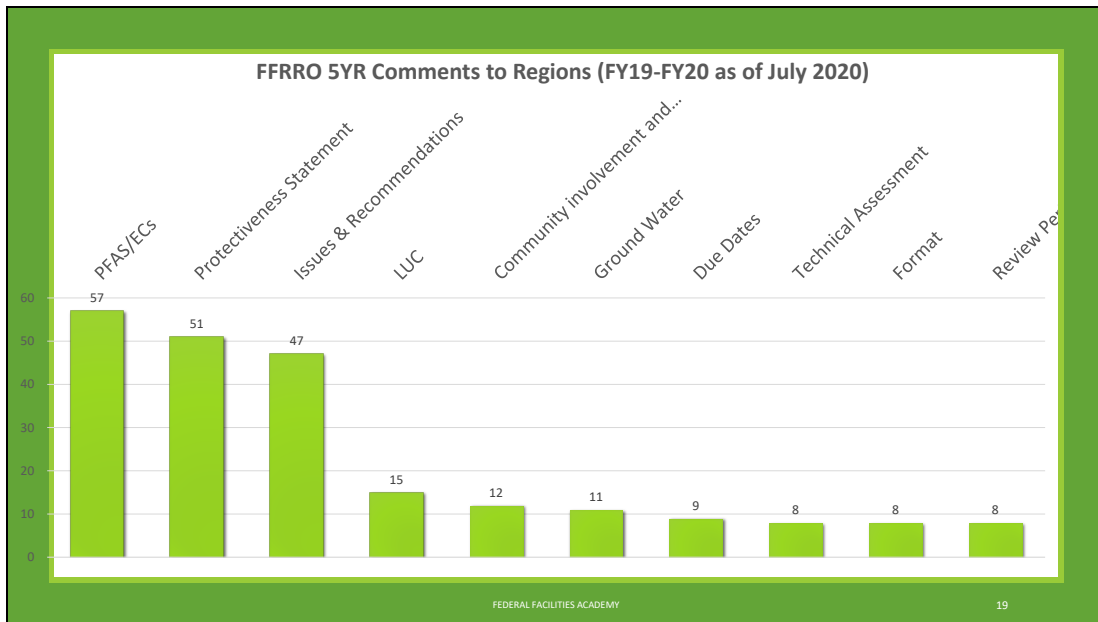
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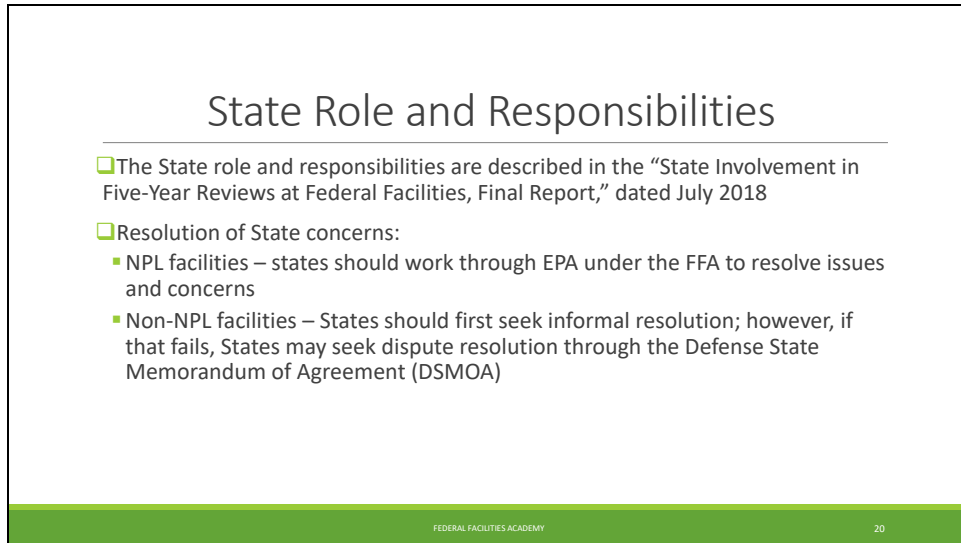
Promoting National Consistency in 5YRs

- Goal is to develop recommendations that are rooted in guidance, are feasible to implement and represent best practices.
- Systematic approach to reviews
- FFRRO uses a Standard Operating Procedure (SOP) and review template for HQ review
- Long Term Effort
 - Analyze results of review to identify trends, gaps and refine best practices and finalize recommendations.

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State Role and Responsibilities

- The State role and responsibilities are described in the “State Involvement in Five-Year Reviews at Federal Facilities, Final Report,” dated July 2018
- Resolution of State concerns:
 - NPL facilities – states should work through EPA under the FFA to resolve issues and concerns
 - Non-NPL facilities – States should first seek informal resolution; however, if that fails, States may seek dispute resolution through the Defense State Memorandum of Agreement (DSMOA)

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The state role and responsibilities are described in a guidance (http://astswmo.org/files/Resources/Federal_Links/ASTSWMO-FF-FYRpaper.pdf). The emphasis is on on-going partnerships and involvement of the States in the FYR process and resolution of questions and concerns at the earliest possible time. Best practices are to seek and resolve questions and comments informally whenever possible.

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Community
Involvement in FF FYRs

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Getting to Know the FYR: A Guide for Communities Near Federal Facilities






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FYR Community Involvement

- EPA 2001 FYR Guidance recommends, at a minimum:
 - BEFORE: Inform the community and other potentially interested parties that a FYR will be conducted
 - AFTER: Inform the community and other potentially interested parties that a FYR was conducted
 - EPA 2001 FYR Guidance recommends, at a minimum:
- 2016 Community Involvement Toolkit
 - Section 10 covers FYRs



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No community involvement activities during the five-year review are mandated in CERCLA or addressed in the NCP. For information on recommended community involvement activities during the five-year review process, see Appendix A of the 2001 *Comprehensive Five-Year Review Guidance*.

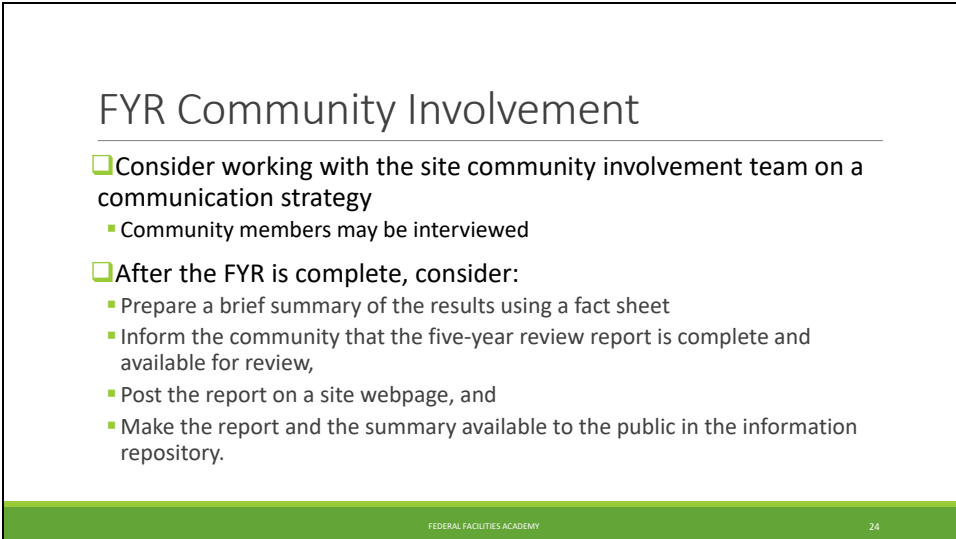
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- Inform the community and other potentially interested parties that a five-year review will be conducted, using the most appropriate communication method or activity for the specific community.
- Inform the community and other potentially interested parties that a five-year review was conducted at the site.
- Prepare a brief summary of the results, inform the community that the five-year review report is complete and available for review, post the report on a site webpage, and make the report and the summary available to the public in the information repository.

A public notice in a local newspaper is the most common way to notify the community that you are preparing to conduct a FYR at a nearby federal facility. You can also use your facility or installation's web page and local radio or TV stations to announce the FYR. If your site has an active community group, you should notify the public at its next meeting. In May 2015, EPA added language to the NCP to broaden the methods by which EPA can notify the public about certain Superfund activities.

The 2016 Community Involvement Handbook (<https://www.epa.gov/superfund/superfund-community-involvement-tools-and-resources#fiveyear>) also provides information on community involvement during FYRs.

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FYR Community Involvement

- Consider working with the site community involvement team on a communication strategy
 - Community members may be interviewed
- After the FYR is complete, consider:
 - Prepare a brief summary of the results using a fact sheet
 - Inform the community that the five-year review report is complete and available for review,
 - Post the report on a site webpage, and
 - Make the report and the summary available to the public in the information repository.

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The lead federal agency project manager should work with the site community liaison on a communication strategy and notify the community about the FYR before it begins and when it finishes.

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Community members may be interviewed as part of the FYR remedy assessment. Conduct community interviews with plenty of lead time; incorporate existing public opinions already provided on remedy performance issues from ongoing public outreach. Focus community input on assessing remedy protectiveness (not reopening the remedy decision). Because community members live near 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 helpful to interview. Local government officials may need to be interviewed to determine if institutional controls are implemented properly.

The FYR Interagency Workgroup recently developed a set of FYR community tools to help site managers at federal facilities explain the purpose and findings of a FYR to surrounding communities. Community meetings are a great platform for sharing the short video and training module. Once you have completed the review, the new fact sheet template can help you organize and summarize the most important FYR findings and share them with the community. The factsheet can also be distributed at community meetings. These tools are available on the FFRRO FYR web page (<https://www.epa.gov/fedfac/five-year-review-federal-facility-cleanups>)

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Defense Depot Memphis, Tennessee
St. George area
CERCLA Administrative Unit
10/26/2011
Version 2.0

**Defense Depot Memphis
Third Five-Year Review Fact Sheet**

What is a Five-Year Review?
The purpose of a five-year review is to determine if remedies at a site remain protective of human health and the environment. If any issues that affect current and future protectiveness are found during the five-year review, recommendations are made to address them. The report addresses three major questions:
• Is the remedy functioning as intended?
• Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives used at the time of remedy selection still valid?
• Has any other information surfaced that could affect the protectiveness of the remedy?

Site History
The Depot is located in Memphis, Tennessee approximately 5 miles east of the Mississippi River and just northwest of Interstate 240. The property is approximately 832 acres and includes two components: Ours Field and the Main Installation (MI). The site is located in an area of mixed residential, commercial and industrial land use.
The Depot served as a hub for the distribution of a variety of materials to the U.S. military from 1942 until the facility was closed in 1957. Hazardous substances were also stored and disposed of on site, resulting in soil and groundwater contamination by potentially hazardous wastes, including metals, hydrocarbons, and chlorinated volatile organic compounds.

Site Chronology

- 1981 - Initial Assessment Study identified six basins of exposure routes.
- 1992 - National Priorities List (NPL) Listing. Site placed on NPL and identified as needing a long-term cleanup plan.
- 1997 - Facility Closed. Depot received closure permits for its air, underground storage tanks, stormwater discharge, and National Response System.
- 1998 - Initiation of Interim Remedial Action. Groundwater remedial system installed at Ours Field. This action was the trigger for the first five-year review.
- 2002 - First Five-Year Review
- 2008 - Second Five-Year Review
- 2012 - Sitewide Construction Complete. Construction of remedies completed and MI, sitewide remediation construction complete.

Site Map

Major Developments since Last Five-Year Review

- Operable Unit (OU) 1/Ours Field:** Thermal soil vapor extraction was completed in December 2008 and removed 2,500 pounds of volatile organic compounds (VOCs). From July 2007-April 2012 fluid soil vapor extraction removed 4,045 pounds of VOCs and was shutdown in July 2012. Soil samples met the remedy goals for both systems. From November 2009-June 2012 air-spargen/soil vapor extraction removed 77 pounds of VOCs. Long term monitoring of 87 wells is being conducted on a semiannual basis.
- OU 2/Main Installation:** Long-term monitoring of 112 wells is being conducted on a semiannual basis and additional wells have been installed in the fluxal, intermediate and Memphis aquifers.
- Sitewide:** Physical construction of all soil and groundwater extraction systems was completed in May 2010 and NPL site status was revised to Construction Complete.

Issues, Follow-up Actions, and Schedule Dates

These issues do not affect current protectiveness because there is no current exposure to chemicals of concern in groundwater. They do not affect future protectiveness because the remedies have been effective in controlling groundwater contaminants.

- Groundwater contaminants at OU 1/Ours Field:** There is potential for rebound in groundwater concentrations of chlorinated volatile organics (CVOCs) at OU 1/Ours Field following shut down of the fluid soil vapor extraction system in July 2012. The air-spargen/soil vapor extraction system will operate through December 2014 and long-term monitoring will continue through 2020.
- Groundwater contaminants at OU 2-4:** There was a rebound in groundwater CVOC concentrations above the level considered safe for consumption at the intermediate aquifer. Water from this aquifer is not used as a source of drinking water, but migration could impact the primary drinking water source for the City of Memphis. Department of the Army will restart enhanced bioremediation treatment in November 2012 and long-term monitoring will continue through 2016.

Protectiveness Summary

OU 1-4 • Protective
Sitewide • Protective
Next Five-Year Review • January 2018

Contact Information
All public events information including the complete five year review is located at:
<http://www.epa.gov/atlantaregion/epa/pubs/fedfac/fedfac.html>

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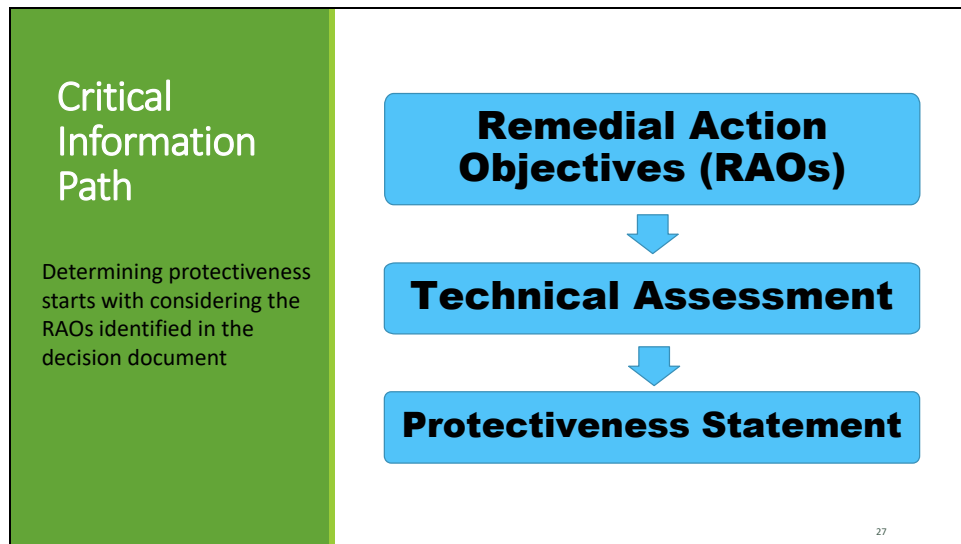
This is an example of a fact sheet to accompany posting of a FYR using the available online tools.
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Protectiveness Statements

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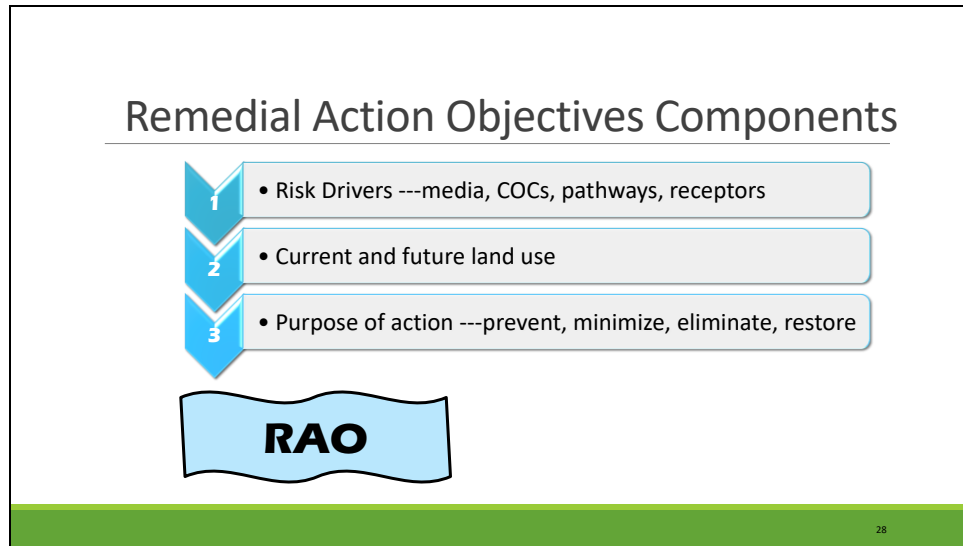
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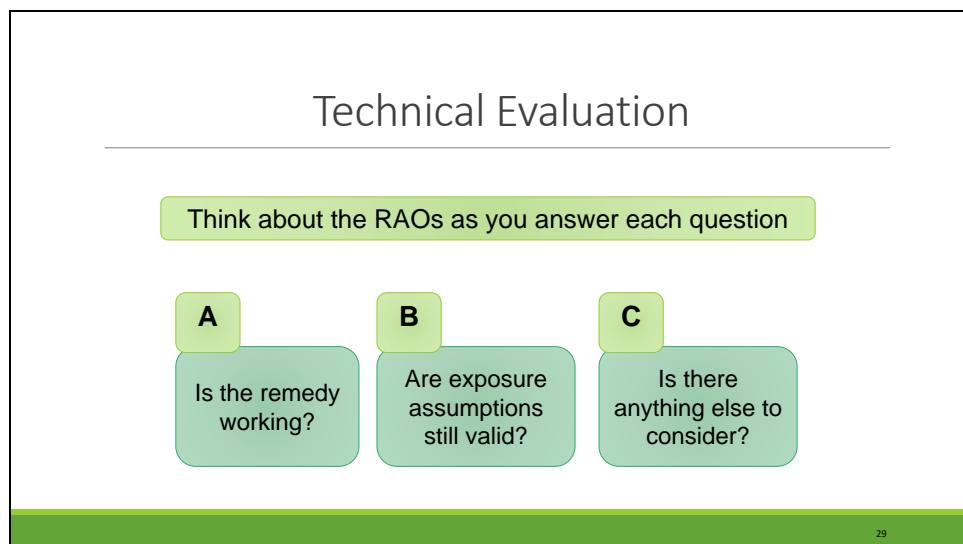
Keep in mind that the purpose of the FYR is to determine the protectiveness of the remedy and ensure that the data and information supports the FYR's protectiveness statements. The critical information path is a thread of thought emphasizing the protectiveness statement that should run through the FYR Report, from the RAOs through the technical assessment to the protectiveness statement. This is not specified in the FYR Guidance, but it helps focus the message. Without this focus, reports can wander and get too long and the protectiveness message may not stand out. FYR report reviewers such as EPA and state project managers will look to see if the RAOs and technical assessment tell a complete story and ensure that the issues, recommendations and protectiveness statements are well supported.

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RAOs are the first step of the critical information path. The site's RAOs come from the decision document(s) and should already include risk drivers, 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. It is important to think about the RAOs as you answer technical evaluation questions A, B and C (see next slide). For more information: OSWER 2001 Comprehensive FYR Guidance, Section 4.0

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Question A asks if the remedy is functioning as intended by site decision documents. It is important to consider all RAOs when writing this section.

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 changes in toxicity values and land use to answer Question B.

You should consider:

- Using the regional screening levels website as a screening tool.
- Talking with your agency's toxicologist.
- Visiting FFRRO's web page for updates on new and emerging contaminants.
- Consulting IRIS to stay up to date on toxicity changes.
- Visiting the state agency web page regarding cleanup levels or involving the state regulator.

Again, changes in standards or land use should be viewed in light of a protectiveness determination and whether existing RAOs (if achieved) will be protective. A change, by itself, does not trigger a change in protectiveness – you must consider whether unacceptable risk, a new exposure pathway or other changed circumstances are present.

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 could potentially affect the protectiveness of the remedy. For more information: OSWER 2001 Comprehensive FYR Guidance, Section 4.0

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Protectiveness Determinations in Five-Year Reviews	 Protective.
	 Will be protective once the remedy is completed
	 Protective in the short-term; however, in order for the remedy to be protective in the long-term, follow-up actions need to be taken...
	 Protectiveness deferred and cannot be determined until further information is obtained (a time frame should be provided)...
	 Not protective... [should identify what actions are necessary to achieve protectiveness]

FEDERAL FACILITIES TRAINING 30

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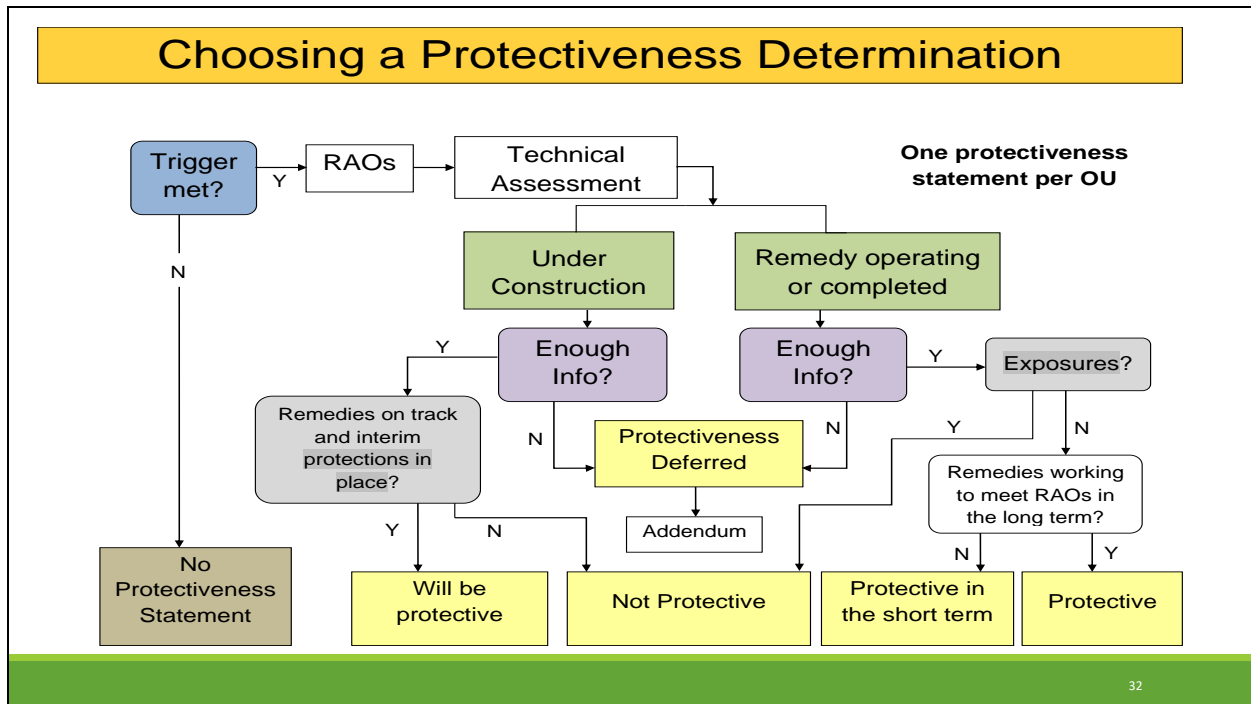
Group Poll

Have you worked on a FF FYR where the determination was protectiveness deferred? What was the cause for making that determination?

- A. Sampling needed to confirm exposure pathways
- B. New contaminant cleanup levels were issued and need to be evaluation
- C. Emerging contaminants need to be investigated
- D. Other

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Exhibit 4-6 in the 2001 Comprehensive FYR Guidance and this protectiveness flowchart can help you choose the correct protectiveness statement based on your answers to questions A, B and C in the technical assessment. Be sure to answer the flowchart decision questions in the technical evaluation section of the report. Also refer to EPA's 2012 Clarifying Memorandum on the Use of Protectiveness Determination of Five-Year Reviews and this flowchart are helpful for you to choose the correct protectiveness statement.

Trigger Questions (blue box)

- Do you have a ROD?
- For a statutory review, has the first remedial action begun? For policy reviews (rarely done at federal facility sites), is construction completed?
- Is the OU suitable for UU/UE? Only issue a protectiveness statement the first time the OU reaches UU/UE, if the OU was not UU/UE at the time of the ROD.

Other Important Questions

- Is the remedy under construction (green boxes)? This question generally applies to the engineering controls, not the ICs.
- Is there enough information to support a protectiveness statement, or must additional data be gathered (purple boxes)? For example, if vapor intrusion testing has not been performed above a TCE plume, and there are no exposures, the writer may choose short-term protectiveness. If there is not enough information to confirm whether or not there are any exposures, the writer may choose protectiveness deferred.
- Are exposures taking place (gray boxes) and has data been collected?

The reviewer will check that your protectiveness statement follows wording in the September 2012 OSWER Memorandum, which recommends language for drafting protectiveness statements and the thought process outlined in the 2001 Comprehensive FYR Guidance. Following a standard format helps to promote FYR consistency across federal agencies.

Remember to issue one protectiveness statement for each OU assessed in the FYR. Provide adequate support for the rationale of the protectiveness statement by answering the questions in the decision points on the flow chart and using tables and figures to display data. You can also cite and link to supporting reports and resources.

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Apply Your Understanding

What protectiveness determination should EPA assign this OU?

- A. Protective
- B. Protective in the short term
- C. Protectiveness deferred
- D. Not protective

OU 1 is preparing for its second 5YR. The ROD was issued in 2005.

The cleanup level for the primary contaminant of concern (COC) became more stringent in 2012. Based on the existing data, COC concentrations exceeded the cleanup level.

Since the RAOs were met, no sampling has taken place and institutional controls are no longer in place. It is not known if the groundwater is being used. The other federal agency concludes that the remedy is still protective.

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What are items a reviewer should look for in a Protectiveness Statement?

- One protectiveness statement per OU
- Correct protectiveness determination
- Adequate support in technical evaluation
- Consistency with issues and recommendations tables
- Progress toward RAOs
- Standard format followed for protectiveness statements
- If a sitewide protectiveness statement is needed

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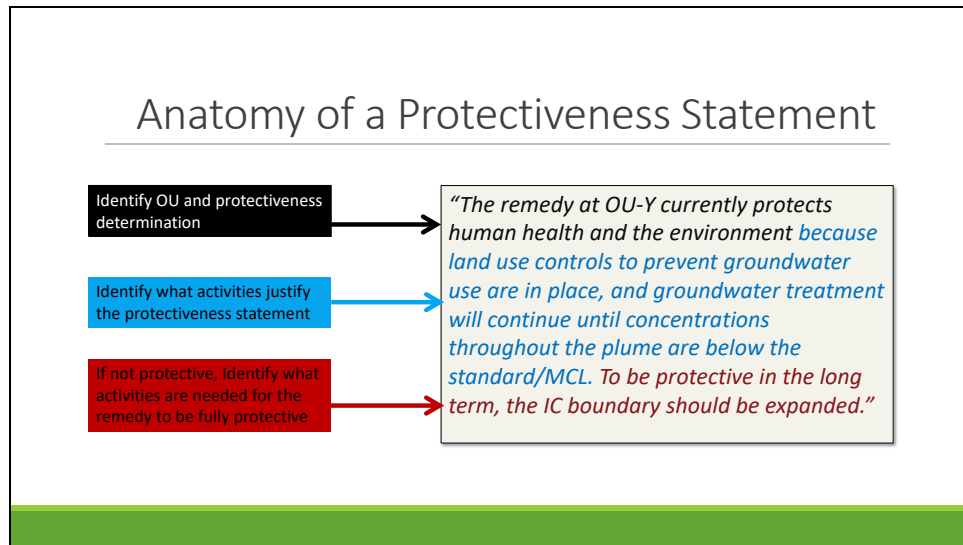
There are a few points that reviewers focus on when evaluating protectiveness statements. The reviewer will look to see:

- Is there one protectiveness statement per OU?
- Did the writer select the appropriate protectiveness statement?
- Does the technical assessment sufficiently support the protectiveness statement?
- Is the protectiveness statement for each OU, and if applicable, the sitewide protectiveness statement, consistent with the issues and recommendations in the body of the FYR?
- If the protectiveness statement considers site RAOs. For example, does it evaluate protectiveness in light of the stated remedial objective such as to contain, cover or remove contaminants of concern?

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- Does the protectiveness statement follow the format in the 2001 Comprehensive FYR Guidance and the 2012 Policy Memorandum on Clarifying the Use of Protectiveness Determinations for CERCLA FYRs?
- Is a sitewide protectiveness statement included in the FYR if a site is Construction Complete?

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Protectiveness statements should be included in the FYR Report's Executive Summary and body text. EPA issued guidance in September 2012 clarifying the use of all protectiveness statements and the language to be used when drafting a protectiveness statement. The reviewer will check that the protectiveness statement follows the wording in the September 2012 guidance. Following a standard format helps to promote consistency across FYRs.

A protectiveness statement has several parts, as shown by the different colors on this slide. It begins by specifying an OU and using the language from the guidance for remedies that are protective in the short term (black). Then it states what is occurring or has occurred to make the remedy protective (blue). The last sentence states what must happen for the remedy to be considered fully protective (red).

In this example, the remedy is protective in the short term because land use controls prevent people from drinking the contaminated groundwater. However, the report recommends that the IC boundary be extended to ensure long-term protectiveness.

Remedies may be protective even though a cleanup goal has not yet been met.

For more information: EPA's September 2012 Memorandum (OSWER 9200.2-111, "Clarifying the Use of Protectiveness Determination for CERCLA Five-Year Reviews")

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Remedies Considered Not Protective

- ❑ An immediate threat is present (e.g., exposure pathways that could result in unacceptable risks are not being controlled);
- ❑ Migration of contaminants is uncontrolled and poses an unacceptable risk to human health or the environment;
- ❑ Potential or actual exposure is clearly present or there is evidence of exposure (e.g., institutional controls are not in place or not enforced and exposure is occurring); or
- ❑ The remedy cannot meet a new cleanup level and the previous cleanup level is outside of the risk range.
 - Depends on site-specific considerations

FEDERAL FACILITIES TRAINING 36

This slide presents examples of remedies considered not protective. In these cases, some follow up action is needed. More information is available in the 2001 Five Year Review Guidance <https://semspub.epa.gov/work/HQ/128607.pdf>

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Follow Up Actions Based on FYR

- ❑ If the remedy is not protective, short-term protective, or protectiveness deferred, then recommendations to address protectiveness should be identified
- ❑ If the 5YR determines the remedy is not performing as designed, changes to the selected remedy may be needed through an ESD or ROD Amendment

FEDERAL FACILITIES TRAINING 37

For Federal facilities only, EPA considers Five-Year Review reports to be stand-alone primary documents or part of another related primary document that should have an enforceable schedule within the framework of the FFA. Where EPA enters into an FFA, the agreement should include all site-specific Five-Year Review requirements, such as provisions for reviews, public participation, and addressing or resolving issues. Consistent with CERCLA §120(g), FFAs cannot

re-delegate EPA's final authority over whether the five-year reviews adequately address the protectiveness of remedies. If the remedy is not protective, then it may be necessary to make changes to the selected remedy, likely through an ESD or ROD Amendment.

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Following up on Recommendations
between FYRs

Five possible status statements in SEMS for updating each recommendation between FYRs

- Under discussion
- Ongoing
- Considered & not Implemented
- Completed
- Addressed in the next FYR

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EPA monitors progress being made on recommendations between FYRs. EPA updates the Superfund database, SEMS, periodically and when milestones are met. There are five possible status statements in SEMS for updating each recommendation between FYRs:

- Under discussion (actual work not yet begun)
- Ongoing (actual work in progress)
- Considered and not implemented
- Completed
- Addressed in the next FYR (this is an option only for the last update, during the following FYR)

Documentation should be included in the site file to support each update. For example, a copy of a local ordinance, a completion report or email correspondence can document that an issue has been resolved. The material should provide some evidence of the date of completion. This information will also be reported in the Progress Since the Last FYR section of the next FYR. Issues and recommendations from the reports can also be discussed in the site's annual work plan and/or site management plan.

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Case Study

LAURA BUELOW, REMEDIAL PROJECT MANAGER
REGION 10

FEDERAL FACILITIES ACADEMY 39

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Mountain Home Air Force Base FYR Concurrence Letter



FEDERAL FACILITIES ACADEMY 40

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RPM Perspective

- ❑ Encourage FF to use EPA FYR template
- ❑ Recommend meeting with FF agency and State to discuss main parts of FYR before drafted by FF
- ❑ Review before sending to FFRRO (compare to EPA FYR guidance)
- ❑ If straightforward, send FYR to FFRRO via email
- ❑ If uncertain about particular sections, schedule call to discuss with FFRRO Regional Representative to talk through

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Mountain Home Air Force Base FYR Concurrence Letter

“The EPA has reviewed the Issues, Recommendations and Protectiveness Statement in the Fourth Five-Year Review Report for Mountain Home Air Force Base (April 2017). EPA concurs with the identified issues, the recommended actions and the protectiveness statement for the four Operable Units covered in the review as presented in the April 2017 Draft. The Review evaluated the remedies at four OUs which comprise MHAFB.

Specifically, EPA concurs with the following protectiveness statements in the Five-Year Review:”

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Comparison of Protectiveness Statements	
<u>FYR Document</u>	<u>EPA Letter</u>
<p>Operable Unit 1</p> <p><i>The remedy at OU-1 is protective of human health and the environment.</i></p> <p>OU-1 includes LF003 and LF023. LF003 is protective currently and in the long term because...</p>	<p>Operable Unit 1: Protective.</p> <p>The remedies at LF003 and LF023 are protective of human health and the environment.</p>

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Protectiveness cont.	
<u>FYR Document</u>	<u>EPA Letter</u>
<p>Operable Unit 3</p> <p><i>The interim remedy at OU-3 currently protects human health and the environment because ICs prohibit access to and use of the groundwater monitoring wells where contaminant concentrations exceed MCLs. Results of VE on vadose zone bedrock may only provide source control and not mass removal therefore cannot be effectively evaluated in the long term.</i></p>	<p>Operable Unit 3: Short-Term Protective. The interim remedy at OU-3 currently protects human health and the environment because ICs prohibit access to and use of the groundwater monitoring wells where contaminant concentrations exceed MCLs. However, in order for the remedy to be protective in the long-term, the vapor extraction system needs to be evaluated to determine if it is removing the mass of contamination in the bedrock. If it is not providing source removal, other remedial options may be considered.</p>

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Protectiveness cont.

<u>FYR Document</u>	<u>EPA Letter</u>
<p>Operable Unit 4</p> <p><i>A protectiveness determination of the remedy at OU-4 cannot be made until further information is obtained. Further information will be obtained by collecting soil samples outside the influence of the SVE system and sampling groundwater for perfluorinated compounds. It is expected that these actions will take until the first quarter of 2018 to complete, at which time a protectiveness determination will be made.</i></p>	<p>Operable Unit 4: Protectiveness Deferred.</p> <p>A protectiveness determination of the remedy at OU-4 cannot be made until further information is obtained. Further information will be obtained by collecting soil samples outside the influence of the SVE system and sampling groundwater for perfluorinated compounds. It is expected that these actions will take until March 2019 to complete, at which time a protectiveness determination will be made.</p>

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Comparison of Issues and Recommendations

<u>FYR Document</u>	<u>EPA Letter</u>
<p>Further soil sampling at FT008, OU-4, is necessary to determine if chlorinated- and petroleum- related VOC contamination at concentrations greater than the soil cleanup levels are outside the influence of the SVE system. Based on the soil data, modifications to the SVE system may be required. Soil sampling is anticipated to be completed in 2017.</p>	<p>Collect additional soil samples to determine if chlorinated- and petroleum-related VOC contamination at concentrations greater than the soil cleanup levels are outside the influence of the SVE system. Based on the soil data, modifications to the SVE system may be required.</p>

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Ending

“Thank you for the continued work with the EPA at Mountain Home Air Force Base. The deadline for completion of the next Five-Year Review is December 30, 2022.”

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Independent Findings

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Concurrence Letter or EPA's Independent Assessment of Protectiveness

- EPA concurs on the federal agency's protectiveness determination per OU
- EPA issues an independent finding of protectiveness per OU
- Identify issues and recommendations and what action is being taken
- Request a response from the federal agency and the due date for the implementation of the action
- Protectiveness statement reported to Congress
- Due date for the next review

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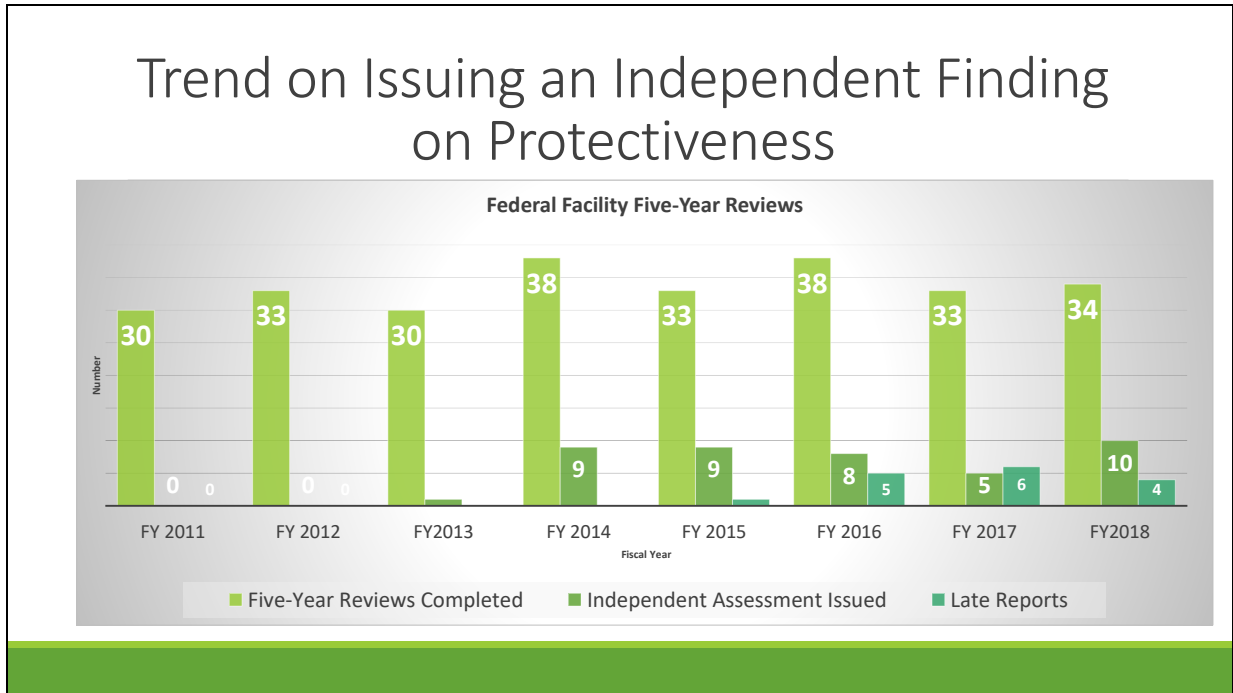
After the concurrence or non-concurrence letter is signed by the EPA Region, the EPA RPM has five days to submit the data to the EPA tracking system, SEMS. Progress on implementing the issues and recommendations identified in the report are updated and discussed between EPA Headquarters and the Regions. The EPA RPM is responsible for updating the issues and recommendations before they are due. The EPA RPM will revisit this information with the lead agency between FYRs. EPA submits an Annual Report to Congress which includes the protectiveness statements for each site that was due the fiscal year. EPA will also report on whether the Agency made an independent assessment of the protectiveness of the remedy in the Report to Congress..

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Causes for Independent Findings

- No report
- Draft report submitted late or not at all for EPA review
- Draft report not finalized by statutory date
- EPA does not agree with the protectiveness determination
 - Emerging contaminants not addressed in the report
 - New exposure pathway
 - Land use controls not evaluated

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Group Poll

Have you worked on a FF FYR where EPA and the other federal agency disagreed on the protectiveness statement? How was this resolved?

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Apply Your Understanding

Scenario 1: As an EPA RPM, you received and reviewed a draft FYR report. After reviewing the document and providing the document for HQ-FFRRO review, you are able to concur with the protectiveness statements in the draft report. **However, the report will not be final by the statutory due date. What are the follow up actions for the EPA RPM?**

- A. Write a concurrence letter agreeing with the federal agency protectiveness determination
- B. Identify issues, recommendations, and actions that will be tracked in SEMS
- C. Submit Letter and draft report to SEMS
- D. Nothing. EPA cannot proceed until the report is finalized.

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Apply Your Understanding

Scenario 2: As an EPA RPM, you received and reviewed a draft FYR report. After reviewing the document and providing the document for HQ-FFRRO review, you are able to conclude that EPA **DOES NOT** agree with the protectiveness statements in the draft report. Also, the report will not be final by the statutory due date. **What are the follow up actions for the EPA RPM?**

- A. Make an independent finding of the protectiveness by the statutory due date (letter to the federal agency)
- B. Share the draft letter with the federal agency for approval
- C. Submit Letter and draft report to SEMS
- D. Send the draft letter to FFRRO for review before signature

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Apply Your Understanding

7/20/2020

Scenario 3: As an EPA RPM, you received a draft 5YR report from the federal agency, **but don't have sufficient time to conduct a review**. The report will not be final by the statutory due date. **What are the follow up actions for the EPA RPM?**

- A. Make an independent finding deferring a protectiveness determination by the statutory due date (letter to the federal agency)
- B. Share the draft letter with the federal agency for approval
- C. Submit Letter and draft report to SEMS
- D. Send the draft letter to FFRRO for review

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Apply Your Understanding

7/20/2020

Scenario 4: The FYR report has been finalized by the statutory due date. In later discussions, the Federal agency expresses it is not willing to implement the recommendations in the FYR report. **What are the potential follow up actions for the EPA RPM?**

- A. There is nothing EPA can do
- B. Send a letter to Federal Agency outlining the issues and recommendations, seeks plan of action and schedule from Federal Agency
- C. If progress is not made in a reasonable time, consider sending a letter requiring the actions as "additional work" under the Federal Facilities Agreement, subject to dispute resolution
- D. EPA will do the actions themselves

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Addressing Emerging Contaminants

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FFRRO Review Template for PFAS in FYRs

1. Where were PFAS addressed in the FYR?
 - Provides broad overview of how PFAS is being considered in FYRs.
2. Were PFAS captured under Question B?
 - Existing guidance suggests this is most appropriate question as it addresses exposure assumptions and detection of new chemical(s).
3. Was it captured under Issues and Recommendations?
 - If there is any follow-on sampling included, then it needs to be captured here.
4. Does PFAS affect Protectiveness?
 - Unresolved issues could mean short-term protective or insufficient information.

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Systematic Approach:

Review guidance to identify expectations.

Develop review template to query current conditions.

Where are PFAS addressed?

Included in Question B?

Included in Issues and Recommendations?

Considered in Protectiveness Statements?

Perform review to understand variability and identify best practices.

Develop recommendations.

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HQ Federal Facility Contacts		Region	FFRRO Regional Coordinator	FFRRO RC Backup
<p>☐ EPA RPMs should contact their FFRRO Regional Coordinator regarding HQ review of FYRs</p> <p>☐ Monica McEaddy is the FFRRO FYR Coordinator</p>	Region 1	Ben Simes	Jill Branby	
	Region 2	John Burchette	Mary Cooke	
	Region 3	Mary Cooke	John Burchette	
	Region 4	Emy Laija	Monica McEaddy	
	Region 5	Doug Maddox	Dianna Young	
	Region 6	Cal Baier-Anderson	Jyl Lapachin	
	Region 7	Jyl Lapachin	Cal Baier-Anderson	
	Region 8	Jill Branby	Emy Laija	
	Region 9	Dianna Young	Ben Simes	
	Region 10	Monica McEaddy	Doug Maddox (Munitions)/ Emy Laija (DOE)	

This is a list of FFRRO Regional Coordinators and a back up for each Region.

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FFRRO Regional Coordinators – Here to Help!

				
R1 Ben Simes	R2 John Burchette	R3 Mary T. Cooke	R4 Emy Laija	R5 Doug Maddox
				
R6 Cal Baier-Anderson	R7 Jyl Lapachin	R8 Jill Branby	R9 Dianna Young	R10 Monica McEaddy FYR SME