What Is Remediation Process Optimization?

Remediation Process Optimization, or RPO, is the systematic evaluation and enhancement of site remediation processes to ensure that human health and the environment are being protected over the long term at minimum risk and cost. RPO may result in cost savings when ineffective systems are overhauled or replaced with innovative technologies.

Independent, multidisciplinary RPO teams visit cleanup sites to recommend ways to improve current remedial systems to achieve cleanup goals, reduce risks and costs, shorten cleanup schedules, and save resources. The RPO Team of the Interstate Technology & Regulatory Council (ITRC) includes state regulators, whose regulatory perspective ensures that key regulatory issues affecting RPO recommendations are identified and addressed.

What Are the Benefits of RPO?

Many federal agencies, state organizations, and private remediation firms throughout the country are finding that RPO reviews can benefit the bottom line. These agencies and firms use RPO to

- enhance the effectiveness of remedial systems in meeting cleanup goals;
- reduce operation and maintenance costs;
- optimize selected remedies to capture larger returns on investment;
- accelerate site closeout schedules;
- ensure that proper data points have been identified, collected, and evaluated; and
- assess long-term monitoring requirements to optimize sampling strategies.

Who's Using RPO?

The U.S. Army, Navy, and Air Force; the states of California and New Jersey; the Defense Logistics Agency; the U.S. Environmental Protection Agency; the National Aeronautics and Space Administration; and architectural and engineering firms are embracing RPO as a way to balance remediation optimization with cost savings.

What Approach Does an RPO Team Use?

An RPO team examines all possible ways to enhance a remedial system and reduce costs without sacrificing protectiveness. While each organization employing an RPO may use slightly different techniques, a common overall approach is to

- assess remediation goals to ensure they are clear, quantifiable, and achievable;
- evaluate effectiveness of implemented remedies;
- identify enhancements to implemented remedies, such as adding or rearranging extraction wells, changing pump parameters, or enhancing monitoring;
- evaluate cost-efficiency;
- identify remediation alternatives and evaluate their technical practicability;
- examine contract incentives and performance-based contracting; and
- track implementation of RPO recommendations.

The ITRC RPO Team conducted a field investigation of a New Jersey site on the National Priorities List.

Are There Any Concrete Examples of RPO Benefits?

RPO is proving to federal agencies that it's a useful approach in reducing risks, saving resources, and reaching site goals. Among the successes these sites have recorded are the following:

- Federal site data suggest a 20 to 30 percent reduction in operation and maintenance (O&M) costs.
- The Army Remedial System Evaluation program applied at several federal sites finds annual O&M cost savings at sites ranging from $35,000 to more than $500,000.
- Optimization at 20 U.S. Environmental Protection Agency/Army Corps of Engineers sites promises potential savings of $3.2 million per year after up-front capital expenditures of $3.8 million.
- RPO at seven Defense Logistics Agency installations during FY02 resulted in recommendations costing $2.9 million to implement while reaping $6.6 million in actual savings and $84.5 in projected savings.
- RPO reviews have enabled several sites to verify that implemented remedial systems had met their remediation goals, leading to closure recommendations.

What's Special about ITRC's RPO Team?

The RPO Team of the Interstate Technology & Regulatory Council includes state regulators whose regulatory perspective ensures that relevant regulatory issues affecting RPO recommendations are identified and addressed. State acceptance of RPO recommendations is more likely when regulators have identified potential stumbling blocks to regulatory approval.

The ITRC RPO Team is participating in the Air Force Real Property Agency's RPO program. During 2002, the RPO Team visited six sites in California, where state regulatory and technical input improved the overall caliber of recommendations. In 2003, New Jersey began performing RPO-type reviews, starting with a site using pump and treat for gasoline contamination.

Through the RPO experience gained by different team members at a variety of sites, the ITRC RPO Team is developing a guidance document that will focus on significant ways to design and optimize remedial systems to ensure remedial protectiveness while maximizing cost-efficiency. The document will identify key regulatory issues for implementing RPO recommendations. As a follow on, the team will develop Internet-based training.

What Do State Regulators Bring to RPO Teams?

State involvement in and support of RPO teams benefit states, which will eventually inherit responsibility for fund-lead Superfund sites from EPA. Early optimization at these Superfund sites reduces the ultimate state burden and brings these sites closer to closure before their operation falls to states.

State regulatory involvement on RPO teams also improves the quality of reviews by ensuring that pertinent regulatory issues are considered. As state regulators participate on these teams, they become knowledgeable about and familiar with RPO goals, which could possibly lead to faster approval times for changes to remediation systems.

For More Information

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RPO
Remediation Process Optimization

Ensuring protectiveness while maximizing efficiency

INTERSTATE TECHNOLOGY REGULATORY COUNCIL ITRC