

When a Temporary Solution Becomes a Long-Term System

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Background/Objectives. Initial response and interim remedial measures may result in the construction and installation of a system designed to operate for a short period of time, typically a few months and up to a year. Due to the quick response nature of these systems, the equipment is often based on what was available at the time, oversized, and automation/safety measures are replaced with dedicated on-site personnel presence. These measures are installed with good intentions to remove contaminant mass and protect receptors. However, we often find these temporary remedies continuing to operate for years beyond their expected life cycle. These systems are not usually designed to operate for this duration and automation and safety features are limited. Years after startup, we find ourselves operating these systems at a high cost with constant “band-aid” fixes and high site oversight staffing to keep them running. How do we recognize this and how do we address the situation?

Approach/Activities. When an aged “temporary” system continues to operate, the first step is to evaluate the system for critical safety and compliance issues. After resolving any imminent risks, a holistic view of the temporary remedy should be performed. Identify the original purpose, design basis, receptors, site use and condition, and regulations. With that information in hand, the need for continued active remediation can be evaluated. Is the existing temporary system capable of meeting expectations? Is it the most appropriate means to achieve goals? Is it safe to operate? Can it be modified to be fit-for-purpose or does it require replacement? Are there new more cost or time effective technologies that should be considered?

This detailed analysis is necessary to ensure that objectives are achieved in a safe and cost-effective manner. A multi-disciplinary team is required to review all angles – geology and hydrogeology, receptor and risk assessment, regulatory expertise, engineering and remediation, operability, and safety. Combining these views into a comprehensive review can prevent continued operation of temporary remediation systems that may have become unsafe, unreliable, or may pose more risk than the remaining environmental impacts.

Results/Lessons Learned. We continue to find these “temporary to permanent” remediation systems in operation. The effort and cost to operate are often key factors that necessitate these technical reviews. However, while we wait for the financial spend to drive a response, the system operators face daily challenges to safely operate aged equipment while avoiding non-compliance conditions. We’ve often been advised where these systems are and what the operating issues are, but we fail to act promptly or allow the site staffing profile to be decreased without automation and/or safety improvements. If we follow a structured review process, we can address existing systems and include new temporary installations in the process to avoid future challenges.

The presentation will provide examples of aged temporary systems that remain in operation without corrective actions and examples where corrective actions have been implemented.