

# UNDERGROUND PIPE AND TANKS



## Material Aging Challenges

As piping systems age, the need for better surveillance and maintenance initiatives intensify for all commercial and industrial facilities. Imperia's engineers and technical experts are recognized in this field for conducting small and large-scale buried and underground piping projects.

Our comprehensive underground piping system assessments are specifically tailored to our clients' needs. We are thoroughly knowledgeable in piping, coatings, cathodic protection, joints and fasteners, and how to leverage the talents of our Materials Science and Engineering Center when a problem cannot be easily solved. Imperia's approach and technical framework enables our clients to get to the solution faster before any failures occur.

## Innovative Solutions

NEI Initiatives 07-07 and 09-14 for Ground Water and Underground Pipe and Tanks have compelled owners to come up with more cost effective solutions. The utilities have limited staff and resources and Imperia has been listening to these needs. We have built our Engineering Programs staff to be ready to answer the call. We have merged former utility engineers with strong analytical design minds and our laboratories to find the answers.

Delivering the Nuclear Promise and plant license renewals require engineering and management personnel to look for innovative processes and technologies in order to achieve plant longevity and safety goals. Imperia has been an active industry leader in cost effective implementation methodologies.

Procedures, risk ranking, and inspection plans have laid the foundation for inspection and repair programs. Plan implementation and asset management present significant challenges. It is critical for owners to have team members, such as Imperia, who understand plant issues, obstacles, and processes.



**Delivering Customer Success  
Through Innovative Solutions**



# INDUSTRY LEADING EXPERTISE IN DEVELOPING AND IMPLEMENTING UNDERGROUND PIPE AND TANKS PROGRAMS

## Condition Assessments

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The internal and external corrosion of buried assets can have significant consequences if effective inspection and monitoring are not properly administered. Fitness for Service assessments becomes very difficult when degraded conditions do not fit textbook solutions. There is no substitute for field experience and advanced analytical skills. Many times the high cost of repair and replacement can be safely deferred or eliminated with a “common sense” answer. Taking a proactive approach towards preventing failure in these systems provides the owner with peace of mind and allows sufficient time for adequate replacement planning should inspection results dictate.

## The United Approach

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United has formulated a stepwise approach for examining, assessing and prioritizing sections of buried piping susceptible to corrosion and failure. Imperia uses the most recent and prominent industry resources available and has kept informed of industry progress along with EPRI leadership and guidelines.

Our approach includes the following tasks:

- Collection of necessary data (i.e. drawings, assessments, reports, interviews, etc.)
- Determination of inclusion/exclusion of various sections of pipe in the scope of the Buried Piping Program. Includes verification of risk ranking
- Distilling risk ranking analysis into prioritized schedules,

making sense of results

- Selection of indirect inspection techniques
- Follow up with appropriate direct inspections
- Determining Fitness for Service
- Making long term asset management strategies

## Mitigation, Repair, and Replacement

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United is a full service provider of engineered solutions for mitigation, repair, and/or rehabilitating of degraded underground and buried piping at power facilities. Our staff has the capability to identify the root cause of problems, develop a recovery plan and implement any repair/replacement activities necessary. In order to ensure our clients receive the optimum resolution to any corrective actions required, Imperia is partnered with industry leaders in many different fields providing the most advanced technologies.

United provides global solutions that focus on the right fix rather than a specific product or service. This ensures our clients receive the best resolution for the situation while lessening the financial impact.

United provides engineering, materials and installation services for all service water systems including nuclear safety related applications per our approved 10CFR50 Appendix B Program.

United specializes in the installation and engineering approval of Cured-In-Place Pipe (CIPP). This is a trenchless repair method, which does not require uncovering the buried pipe.

## About United

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United Engineers & Constructors is an industry leading infrastructure engineering, procurement, construction and consulting company dedicated to improving lives by delivering the most impactful solutions. Since 1905, we have served the power industry by providing comprehensive lifecycle services for the nuclear, conventional generation, renewable, and distributed energy markets.

Together with our clients and partners, we are unified in our efforts to deliver innovative and transformative infrastructure that is designed and built to meet the demands of today and the future.

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### To learn more contact

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