

Corrosion Symposium

Hosted By AMPP Portland Chapter

in Collaboration with PNWS-AWWA

Date: September 22, 2026

Time: 8:00 am – 3:15 pm

Location: City of Tualatin Service Center

Address: 10699 SW Herman Road, Tualatin, Or, 97062

Join us for a one-day technical symposium focused on corrosion and its impact on municipal infrastructure. This event is ideal for owners, operators, engineers, and builders involved in water and wastewater systems, with topics applicable across multiple infrastructure sectors. Topics include corrosion theory, cathodic protection methods, pipeline case studies, coating failure mechanisms, inspection strategies, and considerations for materials selection and protection.

Event Highlights:

- Beverages, snacks, and lunch provided
- 0.55 CEUs available for Oregon PEs and water/wastewater operators (OR/WA)
- Eligible training hours for Water System and Wastewater Operator licenses in Oregon
- On-site corrosion monitoring system demonstration.
- Training counts towards elective hours for Water System Operators and Wastewater Operator license holders in Oregon.
- Student rate: \$20
- General admission: \$150

Featured Presentations:

- Fundamentals of Corrosion Control and Cathodic Protection
 - Presenters: Stu Greenberger, PE (RH2 Engineering) and Alex Fussell, PE (RH2 Engineering)
- Cathodic Protection Systems for Direct Buried Infrastructure
 - Presenter: Roy Rogers, PE (Cathodic Protection Engineering, Inc.)
- Owner's Perspective on Cathodic Protection
 - Presenter: Ryan VanGordon (NW Natural) and Stephen Ngai, PE (Portland Water Bureau)
- Coating Failures and Corrosion
 - Presenter: Jamie Laird (Peak Performance Consulting and Inspection)
- Optimizing Concrete Substrate Integrity to Enhance Industrial Coating Performance in Wastewater Environments"
 - Presenter: Jamie Laird (Peak Performance Consulting and Inspection)

“Fundamentals of Corrosion Control and Cathodic Protection”

8:30 – 10:00

Presented by: Stu Greenberger, PE, and Alex Fussell, PE (RH2 Engineering)

Fundamentals of cathodic protection are within your reach in this crash course. The presentation will address foundational concepts including the mining and refining of metals, the galvanic series, and the electrochemistry of the corrosion cell. Then we will address corrosive conditions; corrosion of materials; and galvanic and impressed current cathodic protection for waterworks pipes, structures, and facilities.

10:00-10:15 Break

“Cathodic Protection System for Direct Buried Infrastructure”

10:15-11:15

Presented by: Roy Rogers P.E. (Cathodic Protection Engineering, Inc.)

Municipal, utility, and industrial pipeline operators, now more than ever, expect long-term pipeline reliability and life expectancy. During this presentation, we will examine several case studies where corrosion control best practices were used, how they are applied, and what they ultimately look like in the field. Following the presentation, we will allow time for an extended question-and-answer session with Roy and other symposium speakers.

“Owner’s Perspective on Cathodic Protection”

11:15-12:15

Presented by: Stephen Ngai, PE (Portland Water Bureau)

The Portland Water Bureau operates one of the largest cathodic protection systems in the State of Oregon, with over 100 active impressed-current facilities. The Bureau has kept pace with corrosion technologies, beginning in the 1970s with the retrofit of large diameter pipelines with impressed current cathodic protection, developing a suite of techniques to accommodate urban light rail in the 1980s, the adoption of computer-controlled rectifiers for tanks in the 1990s, utilizing remote GPS synchronization in the 2010s, and now pursuing remote monitoring and operation with integration into SCADA, GIS, and SQL databases. The presentation will be a guided tour of the corrosion control mitigations used at the Bureau for pipes, tanks, services, and other assets. We will explore detailed drawings, specifications, and materials used. Extra time for audience questions and follow-up discussion will be provided.

Presented by: Ryan VanGordon (NW Natural)

Cathodic protection remains a cornerstone of pipeline integrity management for natural gas utilities. As one of the Pacific Northwest’s largest natural gas distribution operators, NW Natural relies on a comprehensive corrosion control program to protect thousands of miles of buried steel infrastructure and support safe, reliable service to customers.

This presentation will provide an overview of NW Natural's approach to cathodic protection program management in a complex, evolving distribution network. Attendees will gain insight into the design, operation, monitoring, and maintenance of both impressed-current and sacrificial-anode systems, as well as strategies for identifying and mitigating stray-current interference. The discussion will also highlight testing methodologies, data management practices, and the incorporation of emerging technologies that enhance regulatory compliance, operational efficiency, and asset integrity.

Drawing on field experience and real-world applications, the presentation will explore key challenges, lessons learned, and practical considerations for implementing and maintaining effective cathodic protection systems in an urban utility environment. Examples of innovative monitoring techniques, system optimization efforts, and technology advancements will be presented to illustrate how corrosion control programs continue to evolve to meet the demands of modern pipeline operations.

Attendees will leave with a utility-focused perspective on current cathodic protection practices and insights into the future direction of corrosion prevention and asset integrity management

12:15-1:00 Lunch (Provided)

"Coating Failures and Corrosion"

1:00-2:00

Presented by: Jamie Laird, SSPC Master Coatings Inspector, AMPP/NACE Certified Level 3 Coatings Inspector, Cathodic Protection Technician Level 2, SSPC CCI-Concrete Coatings Inspector, AMPP Instructor for CIP 1 and CIP 2 Coatings Inspector Program (Peak Performance Consulting and Inspection)

Protective coatings are the primary method of corrosion control for critical infrastructure such as bridges, pipelines, dams, and water/wastewater systems. When properly designed, specified, and applied, coating systems provide long-term corrosion protection, improve performance, and extend asset service life at comparatively low cost. However, coating applications are complex and sensitive to numerous variables, including surface preparation, material selection, environmental conditions, and curing requirements. Economic pressures, accelerated schedules, and misinterpretation of specifications can lead to non-conformance, reduced coating performance, and premature failure. Such failures can result in severe structural damage, safety hazards, and significant economic loss due to repair or downtime. This presentation will outline the inspection workflow, document the issues encountered during service, describe the diagnostic process used to identify remediation strategies, and highlight critical QA checkpoints. Common coating failure modes and mechanisms will also be examined, emphasizing how proper inspection could have prevented these deficiencies.

2:00-2:15 Break

"Optimizing Concrete Substrate Integrity to Enhance Industrial Coating Performance in Wastewater Environments"

2:15-3:15

Presented by: Jamie Laird, SSPC Master Coatings Inspector, AMPP/NACE Certified Level 3 Coatings Inspector, Cathodic Protection Technician Level 2, SSPC CCI-Concrete Coatings Inspector, AMPP Instructor for CIP 1 and CIP 2 Coatings Inspector Program (Peak Performance Consulting and Inspection)

Industrial coatings are used worldwide to protect assets. Their performance and application characteristics are well understood. Coating manufacturers and raw material suppliers work hand in hand to provide the highest level of quality to ensure that the industrial coatings perform and apply as desired. Regardless of the coating type or formulation, the coating service life is directly or indirectly impacted by the overall health of the concrete substrate. It is well understood how to properly utilize coating technologies in a prescribed way for a desired service life. Often these sophisticated systems fail prematurely. These failures are more prevalent on concrete. Even with robust quality control and third-party quality assurance, the overall performance of the coating system relies on the concrete substrate being sound. Ensuring the concrete substrate is sound and enhancing anti-corrosivity is therefore key to long term coating performance and consequently long-term asset protection.

There are options within current technologies that complement each other in an additive fashion to combat corrosion of concrete and the reinforcing steel. These chemical compounds can be blended in a specific order of addition and applied at a prescribed rate. The level of sophistication required to install these liquid phase compounds is low and is easily applied both in the field as well as in shop environments. The range of acceptable environmental conditions are wide and therefore not restrictive for applicators.