CORROSION SERVICE

SERVICE IS AT OUR CORE

CORROSIONSERVICE.COM

ELECTRICAL INTERFERENCE MITIGATION

PIPELINES INSTALLED IN HIGH VOLTAGE AC POWERLINE CORRIDORS

CRITICAL

Due to congestion and the difficulty in obtaining dedicated right-of-way, it is becoming increasingly common for high voltage AC power lines and buried pipelines to cross paths. This increased interaction means that instances of severe electrical interference between the two isolated systems are becoming a regular occurrence, which introduces a dual safety and integrity threat that must be addressed.

- AC interference occurs due to electro-magnetic induction from high voltage AC powerlines, and typically affects buried metallic pipelines.
- DC interference occurs due to stray current from DC electrical systems and typically affects powerline poles and towers.

DEPENDABLE

Corrosion Service specializes in electrical interference mitigation services, incorporating research knowledge with engineering experience gathered over many decades working with power line and pipeline owners. Utilizing state-of-the-art modelling software, mitigation systems are designed to minimize the induced voltage on both powerline and pipeline structures. In the case of AC interference on a buried pipeline, this is accomplished through the utilization of grounding techniques that allow AC current to pass safely to ground, while blocking corrosion preventing DC current. For powerline structures, electro-positive DC interference that would otherwise accelerate corrosion, is counteracted by traditional cathodic protection, in order to bolster protection and ensure structure longevity.

BENEFITS

- Reduces the risk of electrical shock to personnel under normal (steady-state) operation of the powerline.
- Reduces the risk of hazardous electrical shock to personnel under fault conditions on the powerline.
- Prevents electrical arching under fault conditions that may cause a puncture and damage the pipeline.
- Prevents damage to pipeline coatings by mitigating electrically induced stress under fault conditions.
- Prevents corrosion and reduces the risk of mechanical failure under steady-state operation.

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ENGINEERING SERVICES

Our typical interference study utilizes computer modelling to predict and mitigate unwanted electrical interference on new and/or existing structures under both steady-state and fault conditions.

OUR SERVICES

- Collection and review of mechanical/ electrical pipeline and powerline data.
- Onsite services to measure soil resistivity and AC/DC voltages, visually confirm powerline parameters and pipeline/ powerline configuration, determine ideal locations for mitigation measures.
- Computer modeling to predict interference voltages under steady-state and fault conditions.
- Engineering assessment of the risk of corrosion.
- Special calculations for complex scenarios (as required).
- Conceptual design of mitigation system to address all the safety and integrity concerns under both steady-state and fault conditions.
- Final report summarizing the study, including relevant powerline and pipeline parameters, results of the modeling, conceptual mitigation system, conclusions and recommendations.
- Detailed mitigation system design and installation package.

MATERIALS

Our materials supply team is capable of providing a full-range of electrical interference mitigation materials and equipment both manufactured in-house and sourced from partner suppliers. Our dedicated supply chain team is based in Toronto alongside our material distribution hub, which is capable of delivering materials throughout the world on short notice.

SAFETY

Safety is a fundamental company value that governs everything that we do. Our organization is firmly committed to protecting the health and safety of our Team Members, Customers, Contractors and the General Public. Working together on a foundation of commitment and enthusiasm, while integrating safety into all facets of our operations, we constantly strive to achieve a workplace free of hazards, injury and illness.

QUALITY

Our commitment to providing a combination of unparalleled customer service with a deep understanding of customer needs, directs the focus of our quality management system and instills a modern quality consciousness throughout our company. By adopting a culture that embraces complete quality responsibility, beyond the basics of inspection and test, every team member is empowered to take the necessary steps to realize that commitment. Our quality management system is aligned with the requirements of ISO 9001 and provides the high level of flexibility required in today's fast-paced engineering world. Our dedicated quality professionals work with stakeholders to implement quality management practices that ensure we facilitate the efficient and effective delivery of products and services.

PROJECT MANAGEMENT

All team members are committed to the successful delivery of projects, and success is built upon a foundation of delivering on time and on budget. That is why our project management processes and procedures are aligned with industry best practice. The primary role of our Project Management Office (PMO) is to provide all team members throughout the organization with a common Project Management Institute PMBOK aligned framework, for launching and implementing project activities. Monitoring of project delivery is facilitated through our industry-leading Enterprise Resource Planning software, and a project management environment built upon the Microsoft Project platform.

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