



**Mears Group, Inc.**

A QUANTA SERVICES COMPANY

# THE VALUE OF EXCELLENCE MEARS INTEGRITY SERVICES

## AC MITIGATION

AC mitigation is designed and installed to decrease the induced voltage on the pipeline. This may be accomplished by installation of different grounding techniques such as linear zinc ribbon and/or grounding rods attached to the pipeline with decouplers for DC isolation. With an exceptional commitment to safety, Mears delivers innovative AC mitigation services from field surveys to design, installation, and commissioning.

### AC MITIGATION SERVICE PACKAGE:

- Assessment of electromagnetic interference effects on proposed and existing pipelines
- Field surveys to determine AC voltages induced on proposed and existing pipelines (RAP Sheet)
- Analysis of AC safety and AC corrosion on pipelines
- Design, installation and commissioning of AC mitigation systems
- Design and installation of monitoring systems for induced AC effects

Mears Group, Inc.  
4500 North Mission Road  
Rosebush, MI 48878  
1-800-mearscp  
[www.mearscorrosion.com](http://www.mearscorrosion.com)

**INTEGRITY SOLUTIONS**  
PREVENTION ▲ INSPECTION ▲ REMEDIATION



## CONDITION

Pipelines sharing paralleling or crossing HVAC transmission line rights-of-way may be subjected to electrical interference from capacitive, electromagnetic inductive, and conductive effects. Electromagnetic induction is the primary effect of the HVAC transmission line on the buried pipeline during normal (steady state) operation.

**Electromagnetic Induction** is due to the magnetic field produced by AC current flowing in the phase conductors of the transmission line, coupling with the pipeline and inducing voltage on the pipeline.

**Conductive interference** results from currents being conducted through the soils and into the pipeline. Conductive effects are primarily a concern when a fault occurs in an area where the pipeline is in close proximity to the transmission line and the fault currents in the soil are high.

## PROBLEM

If these electrical effects are great enough during steady state normal operation, a possible shock hazard exists for anyone that touches an exposed part of the pipeline such as a valve, CP test station or other above ground appurtenance. In terms of personnel safety, the concern is the voltage a person is exposed to when touching or standing near the pipeline.

During steady state, normal transmission line operation, AC current density at a coating holiday (flaw) above a certain threshold, may cause accelerated external corrosion damage to the pipeline. This threshold is often much lower than the 15 VAC guideline for the safety of personnel. In addition, damage to the pipeline or its coating, can occur if the voltage between the pipeline and the surrounding soil becomes excessive during a fault condition.

A phase to ground fault on a power transmission line causes large currents in the soil at the location of the fault and large return currents on the phase conductor and ground return.

Pipeline operators faced with systems that are subjected to stray currents must by federal code have a continuing program to identify, test, and minimize their detrimental effects.

## SOLUTION

AC mitigation may be designed and installed to decrease the induced voltage on the pipeline. This may be accomplished by installation of grounding techniques such as linear zinc ribbon and/or grounding rods attached to the pipeline with decouplers for DC isolation. With an exceptional commitment to safety, Mears delivers turnkey AC mitigation design / build services from engineering and field surveys to construction installation expertise.



A QUANTA SERVICES COMPANY

[www.mearscorrosion.com](http://www.mearscorrosion.com)

© Copyright 2016 • Mears Group, Inc.



## MEARS INTEGRITY SOLUTIONS OFFERS A COMPREHENSIVE PROGRAM TO KEEP YOUR FACILITIES UP TO EXCEPTIONAL STANDARDS.

We specialize in the following Integrity Solutions:

### AC Mitigation Services Package

Analysis, design, installation and commissioning

### Direct Assessment

ECDA, SCCDA and ICDA innovative services

### Cathodic Protection

Design, testing and installation

### Pipeline Recoating

Automated abrasive blasting and spray-on coating application, including excavation, construction, etc.

### Linear Anodes

Design, testing and installation

### Hydrostatic Testing Services

Innovative planning, design, testing

