FARADAY TECHNOLOGY, INC.

FARADAYIC Process and Hidden Corrosion Mitigation

Objective:

This project demonstrated the feasibility of hidden corrosion mitigation using o-rings with embedded electrodes.

Summary:

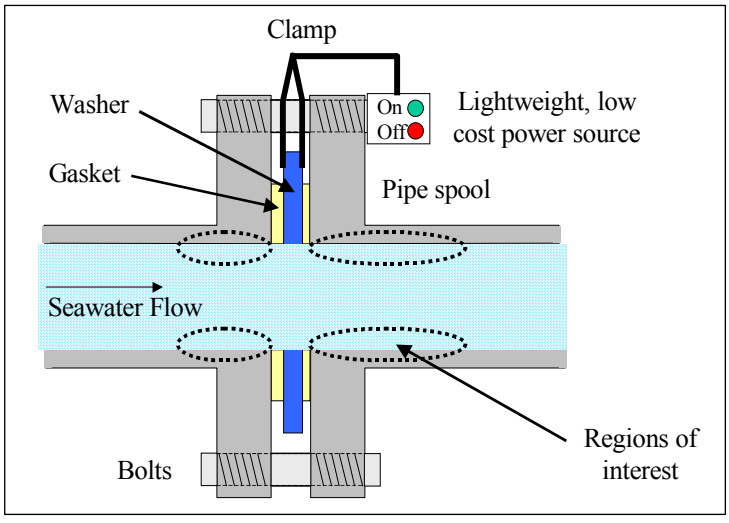
Faraday is developing a novel approach for in-situ mitigation of hidden or hard-to-access corrosion. Initial work focused on the mitigation of corrosion inside a flange joint, by the application of impressed current cathodic protection via electrodes embedded in an o-ring. Data shown demonstrates the feasibility of impressed current cathodic protection (ICCP) for crevice corrosion. A piping loop test attempted to mitigate crevice corrosion in 316 stainless steel flanges in a simulated service environment, *i.e.*, artificial seawater.

	No ICCP	DC ICCP	*Faradayic* ICCP
Maximum Depth of Attack	0.016″	0.005″	Below detection limit
Percent Area Attacked	90%	20%	<5%

This approach could be extended to other components that could have a life-cycle cost benefit from this technology, specifically crevice corrosion in valves and pumps and erosion corrosion in piping systems. This embedded electrode technology is a designed to deliver impressed current cathodic protection to corrosion sites in a cost-effective manner, using a simple go/no go interface for unit control.

Background:

The patented FARADAYIC Process is an electrochemical technology that utilizes a controlled electric field to address industrial problems. Faraday's expertise with electrochemical techniques is applied to solving material degradation problems.



The FARADAYIC Process technology illustrated above is protected by a substantial patent portfolio including issued, allowed, and pending patent actions.

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