CORROSION NEWS

MATCOR

A QUARTERLY PUBLICATION • SPRING 2009 • WWW.MATCOR.COM

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Editor: Jen Diefenderfer • jdiefenderfer@matcor.com
MATCOR Inc., Headquarters: 301 Airport Boulevard, Doylestown Pa • 800-523-6692

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The MITIGATOR™

The MITIGATOR™ being installed along a HVAC corridor.

The MITIGATOR™ – An Engineered Solution for AC Induced Corrosion

AC Induced Corrosion, while not a new topic, has become a very real threat to pipeline operators. Conventional thinking has been that AC Induced Corrosion is really only a safety issue and not a corrosion issue. This was true with older coating systems, which provided larger defects for AC current to discharge off the pipeline. The larger the coating defect where AC current is discharging the lower the corrosion rate. Today's high-quality coating systems provide only a limited number of small coating defects for the AC current to dissipate to ground.

MATCOR has developed an innovative product specifically for use in AC Mitigation service. This engineered solution, aptly named the MITIGATOR™, provides an easily installed, cost effective drain for induced AC current being picked up along pipelines. The assembly is available in 500, 1,000 ft and longer lengths that can be easily installed. The system utilizes a 19 strand #2 AWG or 133 strand 1/0 copper conductor, machine packaged in an acid resistant fabric sock with special copper corrosion inhibited backfill.

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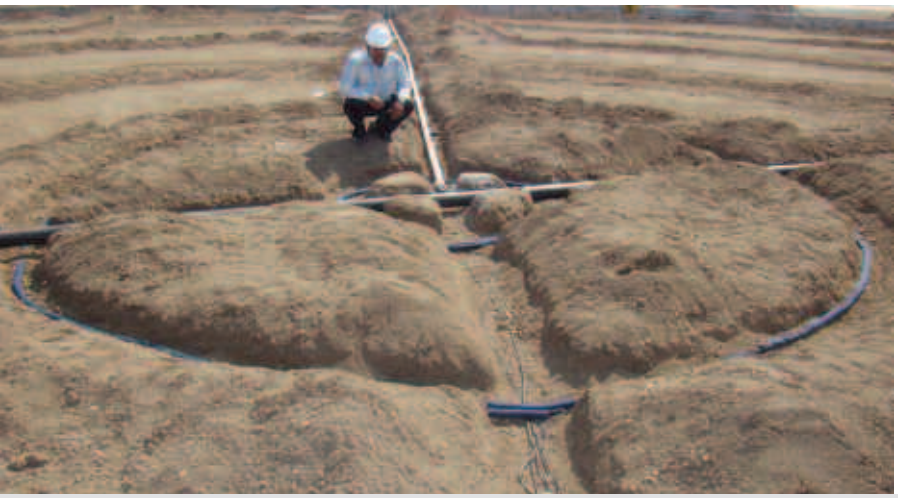
INDIAN REFINERY USES MATCOR SPL™-ANODE TO PROTECT TANK BOTTOMS



Concentric Ring SPL™-Anode

India is one of the world's fastest growing economies and is experiencing an infrastructure boom. Applied to the highest engineering standards, MATCOR products and technologies are being employed to ensure that these investments incorporate state-of-the-art cathodic protection. Working with Engineers India Limited and other influential Indian consulting engineering companies, mixed metal oxide linear anodes have become the standard for protecting above ground storage tanks.

MATCOR's engineers utilize a computer-based design program to detail the anode spacing, sizing and quantities. The concentric ring anode segments are factory produced. Appropriate cable lengths extending beyond the ring wall to a junction box eliminates field splices and simplifies installation, assuring a robust system. Since the anode rings are factory assembled, the SPL™-Anode System can be easily installed, ensuring a quality system for our clients.

MATCOR SPEAKS OUT!

During the course of 2008, MATCOR employees were published in numerous trade publications and spoke at an array of conferences and seminars. These technical articles and speaking engagements provide a wide range of information on cathodic protection and are aimed toward engineers and designers interested in learning more about cathodic protection and how it can protect their assets. Visit **www.matcor.com** and click on News/Speaking Engagements for a list of current and past speaking engagements.

Visit **www.matcor.com** and click on Literature/Article Reprints to access the following published articles:

- Condo Management, March 2004: Atlantic Ocean Club opts for cathodic protection on its balconies
- Materials Performance, November 2005: Designing Cathodic Protection for Power Plant Applications
- Materials Performance, February 2005: Pipeline Integrity Assessment and Management
- Materials Performance, June 2004: CP Installation Under Way at Historic Hotel Site
- Materials Performance, November 2003: Major CP Project Finishes Early
- Materials Performance, August 2003: Letter to the Editor re: MATCOR Coral World Restoration
- POWER, July 2008: Protecting power plant pipes: Basics you must know
- POWER, February 2008: The Case for Cathodic Protection
- Pipeline & Gas Journal, March 2008: Integrity Programs Key To Protecting Today's Pipelines From Corrosion
- Pipeline & Gas Journal, March 2007: Deep Continuous Wire Anode System Proves Enduring
- Pipeline & Gas Journal, June 2006: Linear Anodes Target Aging Pipeline Coating Threats
- POWER Engineering, June 2002: Cathodic Protection Cuts Corrosion Costs
- Pipeline & Gas Technology, September 2007: Mitigating AC Interference Effects
- Stay Current, Fall 2008: Anode Bed Resistance or Total Current Resistance – Which is Important?
- North American Pipelines (Supplement to Trenchless Technology), December 2008: The ABCs of Pipeline Corrosion
- Water & Wastes Digest, September 2008: Controlling Corrosion: Preventing corrosion in WWTPs with cathodic protection
- World Pipelines, December 2007: A Charged Situation (AC Mitigation)
- World Pipelines, May 2007: An Age Old Problem (Linear Anode for Pipeline Rehabilitation)
- World Pipelines, October 2004: Packaging Protection
- Port Technology International, Summer 2004: Port Facility Cathodic Protection
- Port Technology International, Winter 2004: Condition Assessment for Port Facilities

MATCOR – PRODUCT INNOVATION THROUGH CUSTOMIZATION

Driving anodes and reference cells being driven to depths of 40 feet for LNG tank piling systems.

MATCOR Sea-Floor™-Anode adapted for use in a steel wastewater aeration tank.

This MATCOR SPL™-HDP impressed current system was designed so the anode could be placed in the pipeline through special pressure fittings that seal the pipeline.

Disk Anode used on concrete tunnel sections in Korea.

One of MATCOR's unique strengths is our wide range of innovative product solutions and our creativity in adapting new solutions to difficult applications. Products such as the MITIGATOR™ are developed because our clients come to us with problems that need solving. The driving anode and reference electrode assemblies being used to protect LNG tank piling systems is a great example of developing a product that can be easily installed in difficult conditions, saving hundreds of thousands of dollars. A project currently underway at a chemical company to protect its aeration basin involved customizing sled anodes typically used in marine applications for use inside a steel wastewater tank. Disk Anodes designed initially for vessels and intake structures were adapted to protect concrete tunnel sections for a project in Korea. MATCOR developed a linear anode system for protecting the internal walls of large diameter seawater piping. Innovative solutions – a MATCOR hallmark.

THE MITIGATOR™ - AN ENGINEERED SOLUTION FOR AC INDUCED CORROSION

Continued from cover

The entire assembly is wrapped with a robust braid that is color coded with a green ground identifier.

The MITIGATOR™ offers several advantages over conventional mitigation approaches:

- Longer design life
- Lower impedance/resistance
- Continuous installation
- Lower installed cost
- Design simplicity

The MITIGATOR™ is ideal for both new pipeline installations and retrofit applications. For new construction, the installation costs are negligible as the MITIGATOR™ is installed in the pipeline trench. For retrofit applications, it can be installed using a simple trenching unit or it can be plowed into the ground using a standard cable plow. Williams Gas Pipeline's Transco system in New Jersey experienced AC Induced Corrosion after installing a new line parallel to an existing line. The older line had a conventional coal tar coating and no history of AC Induced Corrosion. The new line was tested for induced AC and with only 8 VAC it was well below the 15 VAC NACE threshold for personnel protection. Amazingly, however, the new fusion bonded epoxy coated pipeline experienced 30 percent wall loss pitting within four years – the result of AC Induced Corrosion. Williams Gas Pipeline recently installed 20,000 ft of the MITIGATOR™ in Northern New Jersey.

For more information on the design, installation and testing of cathodic protection systems, please contact MATCOR at **matcorsales@matcor.com**, or call **800.523.6692**.