Advanced Training Workshop on
“Cathodic Protection: Fundamentals, Design and Application in Industries”

Date: 27-28 June 2019
Venue: Hotel Jaypee Vasant Continental, Vasant Vihar, New Delhi

Faculty:
Mr. R. Chaudhury
M. Tech. in Metallurgy (specialization in Corrosion Science & Techn.), IIT KGP
B. Tech (Hons.) in Metallurgy, IIT Kharagpur (KGP)
Ex. Group Head(Corrosion Control), Engineers India Ltd.

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Course Objective:
Cathodic Protection (CP) is a technique used to control the corrosion of a metal surface by making it the cathode of an electrochemical cell. Cathodic protection systems protect a wide range of metallic structures in various environments. Common applications are steel water or fuel pipelines and steel storage tanks such as home water heaters; steel pier piles; ship and boat hulls; offshore oil platforms and onshore oil well casings; offshore wind turbine foundations and metal reinforcement bars in concrete buildings and structures. Cathodic protection designs can differ considerably depending upon the coating, the configuration of the structure, the environment and the presence of neighboring structures.

When a system is designed, installed and maintained properly, cathodic protection is one of the most effective and economical methods of preventing corrosion. Present program has been developed to provide comprehensive training on Cathodic Protection, covering areas such as the theoretical background of corrosion/ cathodic protection, potential and current CP surveys, CP audits and its applications in different environments/industries, CP interference and stray current, design factors and selection process, monitoring and maintenance, as well as the related equipment, illustrations and case studies. Emphasis of the program is to provide participants a right platform to discuss actual case studies through live question/answer session.

Topics & Structure of the Program:
- **Cathodic Protection Fundamentals:** Nature of Corrosion Cell, Electrochemical theory behind Cathodic Protection (CP), Polarization, Surface Area Ratio, Galvanic Series of Metals, CP & Corrosion Rate, Types of CP (Sacrificial vs. Impressed Current) - Applications, Pros & Cons, CP reactions, Coatings & CP, Cathodic Disbondment, CP Current Density and Potential etc.
- **Cathodic Protection Design, CP Survey/ Monitoring:** Structures protected, CP system components, design aspects, Total current requirements, Insulating Joints, Cathodic protection measurement techniques, CP system Operation & Maintenance, Stray Current Effects, CP Survey.
- **Cathodic Protection of Above Ground Storage Tanks:** Tank foundation, Potential variation, CP design, Soil Resistance, Anode location/configuration, Back fill, Reference Electrodes, Galvanic vs. Impressed Current, CP measurement techniques.
- **Cathodic Protection of Underground Piping and Vessels in Process Plants:** Corrosion cells, Electrical Isolation, Design Outlines, Current calculations, Close and Remote ground beds, anodes, operation/monitoring.
- **CP Design & Application of Onshore Pipelines:** CP Design & Engineering, Basic Pipeline Coatings, Anode/ Anode beds, CP measurement principles/techniques, anode bed remoteness, CP monitoring/ Survey technique, CP System maintenance/operation.
- **Cathodic Protection of Off-shore Platforms, Sub-Marine Pipelines and other underwater structures (i.e jetty piles, PLEM etc):** Coatings, CP current density, Design and Engineering, Monitoring Impressed Current vs. Sacrificial System, under water retrofitting.
- **External DC and AC Stray Current Interference and Corrosion:** About DC and AC Stray Current Interference, Problems and Trouble shooting.
- **Cathodic Protection Case Studies:** Discussion of practical case studies and providing expert opinion on the problems faced. Overview and question/answer session.

Salient Features:
- Practical oriented training
- Learn design calculations & practices in Industry
- Understand the subject with Case Studies
- Interactive Q/A Session
- Certificate of attending the Training Course
- Delegate Kit with Course Material
- Arrangement of Tea/ Coffee and Buffet Lunch

Faculty Details:
Mr. R. Chaudhury
M. Tech. in Metallurgy (specialization in Corrosion Science & Technology), IIT Kharagpur
B. Tech (Hons.) in Metallurgy, IIT Kharagpur
Ex. Group Head-Corrosion Control Group Engineers India Ltd.

It will provide an ideal opportunity to learn technical as well as Practical knowledge from the faculty Mr. R. Chaudhury (Ex. Group Head of Corrosion Control Division, Engineers India Ltd), a highly renowned Cathodic Protection Specialist in the Oil & Gas Industry with more than 36 years of hands-on experience in the field of Corrosion Control and Management, Cathodic Protection, Material Selection, Protective Coatings and Pipeline Integrity for various industries like process plants, off-shore Oil & Gas production/process platforms, submarine and on-shore pipelines, integrity assessment of hydrocarbon pipelines etc.

The brief faculty profile is as follows:
- **Mr. R. Chaudhury (Ex. Group Head of Corrosion Control Division, Engineers India Ltd), New Delhi as Deputy General Manager and Group Head of Corrosion Control division.**
- **He studied B. Tech (Hons.) in Metallurgy (IIT Kharagpur, 1975); M. Tech. in Metallurgy (specialization in Corrosion Science & Technology) IIT Kharagpur, 1977.** He is member of NACE International since 1987
- **He has provided his consultancy services to most of the premier companies like ONGC, Cairn India, IOCCL, GAIL, GSPC/GSPL, NPCC-Abu Dhabi, KNPC, National Fertilizers Ltd., Tata Chemicals (Fertilizer Div.), ADCO-Abu Dhabi, Sonatrach-Algeria, HPCL, BPCL, Nagarjuna Fertilizer etc.**
- **Specialist in analyzing different forms of corrosion failures and the various corrosion prevention methods e.g. material selection, cathodic and anodic protection, organic paint and thermally sprayed metallic coatings, anode evaluation and testing methods, corrosion monitoring methods and techniques, corrosion studies to predict corrosion rate for Oil/Gas pipelines.**
- **Wide experience in Design, testing & commissioning of all types of cathodic protection system for on-shore & off-shore structures, process equipment, process plant piping, anode material selection, application of corrosion monitoring techniques, cathodic protection system maintenance/retrofitting, cathodic protection performance tests and evaluation.**
- **Introduced state of the art mixed metal oxide coated titanium anodes on commercial scale and thermally sprayed aluminium coating for offshore platforms for the first time in India.**
- **Had overall responsibility for selection of industrial coatings (organic and metallic) for various services for process plant equipment’s, inhibitors for upstream operations in oil and gas production as well as for industrial water treatment, pipelines carrying hydrocarbons.**
- **20 years of experience in In-line inspection (intelligent pigging) and integrity assessment of operational pipelines by method of cathodic protection performance evaluation, internal surface corrosion rate prediction and results of in-line inspection.**
- **Familiar with various relevant and applicable international codes and standards e.g. DIN, ISO, NACE, ASTM, API, SSPC etc.**
- **He has worked as specialist engineer in International Metallizing and Engg. Co. Calcutta during 1978-84, in the high area of high temperature resistant metal coatings, corrosion resistant organic paint coatings, and design, engineering, supervision, commissioning of CP systems.**

Registration Fee
- **Indian Participants:** Rs. 15,000/- + 18% GST
- **Foreign Participants:** USD 300 (including taxes)
- **Students:** Rs. 6000/- + 18% GST

Early bird discount: 10% if registered before 28th May 2019.
Corporate discount: 10% (for 2 and above), 15% (for 4 and above) & 20% (for 6 and above) number of delegates from the same organization.
Terms & Conditions:
- All bookings carry a 20% cancellation charge.
- Substitutions of delegates prior to the event date may be allowed subject to management’s discretion.
- For any reason, Organizer decides to cancel or postpone this event; organizer will not be responsible for any loss incurred by Client/Participant. The conference fee will not be refunded and shall be adjusted with future event fee.
- The content of the event program can be revised without any intimation.

Branding Options

Table Top Display (Exhibit your Products/Services) - Rs. 35,000/- (USD 700):
- 1 Table to display your products & services
- 1 complimentary participant
- Special Acknowledgement
- Display of Company Logo & advertisement in website

Product Promotion during Tea/ Coffee Break - Rs. 30,000/- (USD 600):
- Best option to promote your products, Services & New Technologies to the gathering
- Complimentary 1 no’s of participants
- Special Acknowledgement & Presence at Tea Breaks
- Video Display (15 min) of your Products/Services during Tea Breaks
- Display of Company Logo & advertisement in website

Display of Standee - Rs. 10,000/- (USD 200):
- Promote your company, products & Services
- One 4 ft x 6 ft Standee will be allowed to display for both the days.
- Standee shall be arranged/brought by the company

Registration Details

In favor of: Matcorr Consultancy Private Limited
Bank Name: IDBI Bank (Malviya Nagar Branch)
A/c No.: 100810200003186
IFSC Code: IBKL0001008
PAN: AAICM9221A; GSTIN: 07AAICM9221A1ZR

For registration, please send us details of the participants through email. The registration fee can be paid through online (NEFT) or by sending Draft or Cheque drawn in favor of “MatCorr Consultancy Pvt. Ltd.”, payable at New Delhi. Only 20 Participants shall be registered for the seminar on First Come First Serviced Basis. Request for nominations shall be sent before 20th June 2019.

Who should attend?
The course outline is designed for professionals engaged in design, installation, monitoring, testing, commissioning, inspection, maintenance and corrosion control from:

- Oil and Gas Production and Processing
- Pipeline
- Oil Refineries
- CGD, LNG and Natural Gas Industry
- Petrochemicals & Fertilizer
- Chemical and process industries
- Power Plants
- Infrastructure Companies
- Design & Engineering Companies
- EPC Companies
- Equipment Suppliers
- Technical Institutes
- Vendors & Suppliers
- Material & Corrosion Professionals
- Asset Integrity, Reliability & HSE Professionals
- Operation, Maintenance Professionals
- Inspection Professionals
- Failure Analyst, Life Assessment professionals
- Educational & Technical Institutes
- R&D, Educational Institutes and Students

Course Timings:
Training timing from 09.00 am to 18.00 pm both the days with intermediate Tea/ coffee Breaks, Buffet Lunch.

Contact Details for Registration:
Web: http://matcorrconsultancy.com/cathodic-protection-fundamentals-design-and-application
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