The contribution of NACE International Gateway India Section (NIGIS) towards generating corrosion awareness and developing corrosion management strategies, over time has been commendable. The annual event CORCON conference & expo on corrosion has earned a name for itself as a unique platform for exchange of knowledge, information and development of solutions on matters pertaining to corrosion and its control.

Mr. N Manohar Rao, Chairman NIGIS & CORCON-2018 in his welcome address at the inaugural function highlighted about the significance of the conference expressed that every registered delegate at the conference could have a technical feast of three days in Jaipur.

The conference was inaugurated by Shri Devendra Bhushan Gupta, IAS, Chief Secretary, Government of Rajasthan. In his inaugural address he said that they at Government of Rajasthan were delighted to be a partner when Mr. N Manohar Rao, Chairman-NIGIS & CORCON-2018 had approached them because the government has a progressive and positive attitude to attract investments in the state of Rajasthan and encourage the visit of specialised professionals from India and abroad, like in the field of corrosion. He appreciated the efforts of NIGIS in providing trainings to industry personal in the area of corrosion control. He emphasised that more efforts are needed to develop green substitutes to control corrosion. He expressed that enhancement of life of aging infrastructure is a matter of great concern and the specialists need to evolve techniques and technologies to take care of them.

In the past decades, corrosion professionals focussed primarily on new construction, specifying materials and designing corrosion protection and control systems for buildings, bridges, roads, plants, pipelines, tanks, ships etc. Today when most of the infrastructures reaches end of its design life, the emphasis is on maintaining and extending the life of these valuable assets. The industry should take leverage from R&D to reduce direct and indirect cost of corrosion.
Shri D. Rajkumar, Chairman and Managing Director, Bharat Petroleum Corporation Ltd., who was the Guest of Honour at the Inaugural function, highlighted that the world is passing through a phase where business revolves around disruptive, innovative and sustainable practices. He opined that the theme of CORCON 2018, “Uniting the World in Mitigating and Combating Corrosion”, has tremendous potential which if explored to the fullest can effectively contribute in enhancing the environment sustainability, optimizing cost, averting infrastructure mishaps and ensuring uninterrupted conduct of business operations. It is said that money saved is more than the money earned, perhaps because of the fact that replacement costs are much higher.

NACE International President, Jeffrey L. Didas, appreciated NIGIS for the great efforts and contributions. He mentioned that India has a big strength of 892 members of NACE International community.

Shri B. Narayan, Group President, Reliance Industries Limited, an ardent supporter of NIGIS for the past several years, mentioned in his address that at this point of time when Industrial Revolution 4.0 is taking off, he expected the corrosion engineers to keep pace with the developments and come up with innovative corrosion prediction models that can predict corrosion under corrosive environment so that effective control measures can be timely adopted.

“CORCON, the annual conference and expo on corrosion science and engineering held in India since last 26 years, is one of the largest event of its kind in Asia. This event offers a powerful platform for information-sharing, knowledge-acquisition, scouting opportunities, market offerings, and networking in the field of corrosion prevention and deployment of materials and components employed in a variety of industries,” said Dr U. Kamachi Mudali, Chairman and Chief Executive, Department of Atomic Energy, Heavy Water Board, Government of India, while speaking on the occasion. Mr. Tushar Jhaveri, Past President, NACE International congratulated the entire team consisting of Chairman and the Committee members for such a grand success of CORCON-2018. Mr. Dipen Jhaveri, Secretary, NIGIS proposed the vote of thanks.

The technical sessions of the conference commenced from the morning 1st October. The technical richness of the conference was reflected by the 14 Symposia’s in 32 Technical sessions, 5 Plenary Talks, 18 Keynote Talks, 184 Oral Papers, 26 Poster Presentations and 6 Technical Interactive Forums were highlight of the conference. This was the biggest ever CORCON in terms of number of delegates, 869. The conference was supported by 1 Platinum Supporter, 9 Gold Supporters, 25 Silver Supporters, 49 Exhibitors with 77 Booths.

There were a few unique features in exhibition area this time. A special arrangement was made for those Supporters / exhibitors who were interested in presenting their products before a larger crowd in one go. The food court was in exhibition area with sitting arrangement. This made technical and business discussions possible during lunch, dinner and tea time. For the first time in expo area, a stall with medical facilities was also arranged. A Portrait Station was also setup for all the participants. This way, the invaluable time of each participant was gainfully utilized.
PLENARY TALKS
The five plenary talks, that attracted all the knowledge seekers, focussed on the following topics:

“Surface engineering for Corrosion Management”
Dr. V. K. Saraswat,
Member, National Institution For Transforming India

“Above Ground Storage Tank Bottom CP - Lessons Learned and What we are doing Today”
Jeffrey L. Didas,
Senior Technical Specialist, & Corrosion Matcor, USA,
President, NACE International

“Corrosion Control and Cathodic Protection of Steel Reinforcement: Past Present and Future”
George Sergi,
Technical Director, Vector Corrosion Technologies Ltd

“Corrosion in the Defence Sector”
S. V. Kamat,
Distinguished Scientist & Director General, Naval Systems and Materials Defence Research and Development Organisation (DRDO)

“A scintillating Corrosion Awareness Awards function was organized in the evening on 2nd October. On this occasion, Dr. V. K. Saraswat, Member, National Institution For Transforming India, NITI Aayog, said, “India loses around US$100 billion annually solely due to corrosion. In this backdrop, the annual edition of CORCON is of special significance. They provide an ideal platform to exchange ideas and views in mitigating this horrendous loss.”

This year, the award winners were:

Dr. T. P. D. Rajan
CSIR-NIIST, Trivandrum for Excellence in Corrosion Science and Technology in Research and Education

Dr. Liju Elias
Indian Institute of Technology Hyderabad, Student Award for PhD

Mr. Bidyut Dutta
IIT Bombay, Student Award for M. Tech

Mr. Pankaj Panchal
Corrosion Protection Specialist Pvt Ltd., Ahmedabad, for Excellence in Corrosion Science & Technology in Oil and Gas

CSIR
Central Electrochemical Research Institute, Karaikudi, Award for Excellent Laboratory

Dr. V. Saraswathy
CSIR-Central Electrochemical Research Institute, Karaikudi, for Meritorious Contribution to Research and Education

The Lifetime Achievement Award
Nominated by the Section Governing Board - NIGIS, was given to Dr. S. L. Kataria, International Certification Services Pvt. Ltd., Mumbai
This was followed by a surprise Rajasthan Nite-Chokhi Dhani on the sprawling lawns of the JECC with music, dance, entertainment, puppet shows, pottery makers, bangle makers and even fortune tellers guiding the delegates about their future.

**JUNG SE JUNG**

CORCON 2018 had a day with special focus on corrosion in the oil and gas industry including with ‘Jung Se Jung’ session. ‘Jung Se Jung (JS)’ was organized by GAIL in association with NIGIS on 03 October 2018. The objective of JS was to discuss the Prevention Considerations to be taken at the Design and Construction Stage so as to avoid Internal & External Corrosion for Oil & Natural Gas Pipelines, which are one of the important national assets. At the outset of the program, Mr. M K Sogani, GM, GAIL welcomed the participants and briefed about the purpose of JS program with a glimpse of journey that has been covered during the past years. The JS was inaugurated by Dr. Ashutosh Karnatak, Director (Projects), GAIL (India) Ltd, who was the Chief Guest. In his keynote, he applauded the industries for the steps taken and collaboration in the battle against corrosion as well as appealed to all the industries to participate and share knowledge for prevention and mitigation of corrosion. He stressed on the need of migration from “Reactive” corrosion management to “Proactive” management of corrosion. The eminent keynote speakers and panelists at the JS were Dr. Carlos A Palacios, Mr. Hasan Sabri, Dr. Narendra Kumar, ED, O&M-CO, GAIL, Mr. E S Ranganathan, MD-IGL, Mr. A N Pandey, ED (O&M-NR), Mr. A K Tiwari, ED-Iocl (Pipeline), Mr. R Suresh, Business Head – RTIL. The panelists shared their knowledge and views about corrosion and answered various queries of the participants during Q&A Session. The Interactive panel discussion was co-ordinated by Mr. M K Sogani, GM - GAIL.

The organizing committee of CORCON 2018 also placed on record the overwhelming support from Government of Rajasthan, for providing Jaipur Exhibition and Convention Centre (JECC) for conducting this conference.

The valedictory function of CORCON-2018 was held on 03 Oct 2018. Ms. Helena Seelinger, Executive Director, NACE International Institute, USA was Chief Guest. She specially applauded the dedication of NIGIS staff, who worked 24*7 in ensuring grand success of the conference. She had all praise for the NACE Staff in India Mr. Manoj Mishra, Mr. Rishikesh Mishra, Ms Anita D'souza, T D Sundarakanashan and Mr. Maxie Fernandes.
14 best symposia awards and 3 best poster papers, as chosen by eminent experts, were presented during the valedictory session. Awards for two best exhibition stalls and two runner-up exhibition stalls were chosen among the 77 exhibition stalls, were also presented.

**CORCON 2018: BEST PAPER AWARDS**

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<th>Title</th>
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<td>1</td>
<td>Materials and Composites: RP Tanks: A Potential Alternative Of Rubber Lined Tanks For Acid Storage, Shashank Mishra, Madhusudan Sur and Kumar Sudhir, Indian Oil Corporation Limited, Mathura</td>
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<td>2</td>
<td>Cathodic and Anodic Protection: Different Grounding Methods For Mitigation Of AC Induction On Pipelines, Mohammad Shums Abbas and Uma Shanker, GAIL (INDIA) Limited, NCR</td>
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<td>3</td>
<td>Coatings, Linings and Thermal Insulation: Performance Evaluation of a Storage Tank Cross-linked Two Components Epoxy Coating System at Three Curing Temperatures, M. Dabir, S. Mukadam and A. Al-Hashem, Petroleum Research Center, Kuwait and S. Rajendran, St. Anthony's College of Arts and Sciences for Women, Thamarapudy</td>
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<td>Corrosion in Refineries: Preferential Corrosion-Erosion Of Weldments Of Lean/Rich Amines Piping In Refineries, N Vaarth, Sukant Dev and Rajeev Ranjan Ravi, Indian Oil Corporation Limited, Mathura</td>
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<td>Internal Corrosion in Pipelines: Internal Corrosion in Pipelines Qualification of lower-cost CRA clad material for flows to T. Bos, Shell Technology Centre, Bangalore and M.E. Wilms, J. Smit, Shell Technology Centre Amsterdam</td>
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<td>6</td>
<td>Corrosion Monitoring and Testing: ECDA - Indirect Inspection through Combined On ground Survey of Pipeline and its Benefits, Atul Parmar, Indian Oil Corporation Limited, Noida</td>
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<td>7</td>
<td>Young Student Scientist Forum: Electrochemical response of embedded steel in carbonated limestone calcined clay (LC3) mortar, Sundar Rathanrajan and Radhakrishna G. Pillai, Indian Institute of Technology Madras, Chennai</td>
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<td>8</td>
<td>Corrosion Control in Water Treatment Utilities: Troubleshooting of Scaling problems in Pressable Waxy Distillate (PwD) product cooler in Crude Distillation Unit (CDU) of Digboi Refinery- A Case Study, K K Pandey, Sukla Mistry, S D Chaklader, C R Rao and R Gaya, Indian Oil Corporation Limited, Digboi Refinery, Tinsukia</td>
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<td>9</td>
<td>Microbial Corrosion and Inhibitors: Reduction of toxic thiourea usage by green and abundant quargum for steel corrosion inhibition, Venkata Muralidhar K, Vinay Jain, Beena Rai, Tata Consultancy Services Ltd., Pune</td>
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**CORCON 2018: BEST STALLS**

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<th>Description</th>
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<td>1</td>
<td>12 Sqm – Winner</td>
<td>Corrtech Energy Limited</td>
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<td>2</td>
<td>12 Sqm – Runner-up</td>
<td>Sunil Chemical Industries</td>
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<td>3</td>
<td>9 Sqm – Winner</td>
<td>B S S Tech CP (I) Pvt. Ltd.</td>
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<td>4</td>
<td>9 Sqm – Runner-up</td>
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Report on Technical Interactive Forum

WATER TREATMENT

PANEL
Mr. K V Suryam, VP & CoE (Water) - Reliance Industries Ltd, Mr. Dhrubo Banerjee - MD, WEX Technologies, Mr. Ajay Popat - President, Ion Exchange (I) Ltd, Mr. S M Mahadik - President, Vasu Chemicals

OBJECTIVE
To discuss challenges in the use of alternative sources of water for industrial make up and bring out mitigation measures

DISCUSSION
Reuse and recycle of water is becoming increasingly important due to scarcity of fresh water, strict regulations on discharge and deteriorating quality of incoming water due to pollutants.

There is a Gujarat Government regulation necessitating use of sewage water available within a radius of 50 kms by the industry. Fresh water allocation to that extent will be reduced.

Importance of proper pretreatment right from sea water intake to cooling tower
Best MOC for Sea Water applications

Limitations and/or upsets on pretreatment cause membrane fouling and reduce plant capabilities. Most membrane failures are due to improper pre-treatment and has nothing to do with the membranes or the RO plant.

Membrane Autopsies help identify foulants and select best cleaning methods.

Membrane failures are mainly due to Biofouling, Oxidation, Metal oxides, Abrasion, Clay and Scales.
Predictive cleaning of membranes at defined intervals is a much better option to cleaning only after pressure drop increases. Predictive cleaning ensures sustained performance and longevity of the membranes.

Correct selection and use of cleaners ensures quick recovery of the plant performance as well as longevity of the membranes.

Periodic replacement, say 1/3rd membranes every year for ETP+ROs and 1/5th every year for SWRO coupled with membrane autopsy results

Genair cleaning – proprietary method of cleaning membranes with microbubbles alongwith required proprietary chemical

Predictive cleaning versus cleaning when pressure drop increases by 10-15%

Availability of predictive monitoring. This is being worked on and some form of predictive monitoring will become available in the days to come.

RECOMMENDATION

It was felt by all that such an interactive forum followed by useful presentations was very useful and should be conducted in every conference. A full day session on-Water covering various aspects along with invited presentations would be much more effective and useful.

REPORT ON TECHNICAL INTERACTIVE FORUM

CORROSION CONTROL IN CONCRETE STRUCTURES

PANEL

Dr. Radhakrishna G. Pillai - IIT Madras, Dr. Umesh Kumar Singh - IIT Roorkee, Dr. Parmanand Ojha - NCCBM New Delhi, Dr. V. Rajendran - Hitech Concrete Solutions, Chennai, Er. Haixue Liao - Vector Corrosion Technologies, Canada

OBJECTIVE

To enhance the corrosion resistance of the concrete structures that we build today and extending the service life of the existing structures that are experiencing corrosion.

DISCUSSION

The discussions were focused on the corrosion control & prevention techniques for the existing concrete infrastructure; rather than for the new infrastructure. Field issues associated with the condition assessment of concrete structures, selection and use of good repair materials, cathodic protection of concrete structures, corrosion of prestressed concrete structures, indifferent approach of the upper management, lack of corrosion management strategy in construction sector, etc. were discussed in detail. Even professionals working in sectors other than reinforced concrete attended this - indicating the general interest of the public in this important topic of the day.

RECOMMENDATION

The discussions concluded that there is a dire need for conducting separate tailor-made training programmes for upper and middle managers/engineers and the workers crew - to enhance the quality of repair works. This event provided an excellent platform for structural and materials engineers for a face-to-face interaction on technical matters and equip them in a better way to fight against corrosion in concrete structures.

Report on Technical Interactive Forum

INTEGRITY MANAGEMENT FOR COATING AND CP SYSTEM, INTERFERENCE AND MITIGATION

PANEL


OBJECTIVE

To discuss the industry concerns regarding Pipeline integrity management, coating, CP, Internal Corrosion, and interference detection and mitigation; with aim to discuss amongst experts and providing best way forward.
DISCUSSION

The summary is as under:

a. Opening of forum by Convener with brief presentation on objective and scope of TIF followed by introduction of all panel members with their experience and specific field experience.

b. Each panel members were asked to highlight their area of expertise and thus share couple of their experience incite related to pipeline integrity management. And thus major highlight was increase of awareness on integrity management requirements, different monitoring and mitigation techniques, sharing of common ROU with old pipelines and related problems to that, AC/DC interference and mitigation and their views on integrity management of aging infrastructures.

c. The latest developments in field of Integrity management, highlighting the need for enhancing requirements of Integrity management tools considering increasing of infrastructures as well aging of many pipelines systems across world needing special tools for ensuring integrity; considering many of pipelines are non-piggable and needing different approach for monitoring and ensuring such structures integrity; highlighting several techniques as ECDA, ICDMA, MTM, ILI and options to ILI for non-piggable pipelines.

d. Current challenges faced in field of Coating, Cathodic Protection (CP) and mainly on interference detection and mitigation, experience with common ROU pipeline interference and consideration with their different coating systems were discussed.

e. Awareness of overall integrity management requirement and techniques need of standardization to extent as well making it specific to country / region considering local factors (eg. Urbanization in country like India) and thus making it modular accordingly.

f. Need for Integrity management programs, training and awareness get stronger with increase of infrastructures as well aging of earlier installed systems including older coating system, sharing ROU, non-piggable pipelines Vs piggable pipelines, integrity as well safety concerns due to interference situations.

Queries raised by Attendees:

A few of queries discussed during the interactive forum are listed below:

1. Available internal corrosion monitoring systems (eg. ER, LPR probes, Coupons, sampling) and their performance Vs design consideration, and thus need for system selection awareness.

2. AC interference, modeling consideration including criticality of resistivity, coating stress voltage, selection of mitigation techniques, alignment of pipeline vs. interfering installation of HT, Sub-station, Earthing systems etc. What all need to be considered for the requirement of AC mitigation?

3. What is to be considered as AC current and voltage threshold limit for considering for carrying AC interference testing, modeling etc. As standards suggests 15 V AC and 20A/Mtr sq. of current discharge, how to decide for requirement of interference study?

4. Is it recommended to bond two pipelines with different coating systems when a new pipeline laid in ROU of existing old pipeline? Since both pipelines will be operating with different current requirement, how we can balance the current to ensure proper PSP for both the pipelines?

5. External ER probes and coupons are not giving consistent readings or results, how can we ensure these are properly installed and readings can be extrapolated with actual results on the pipeline?

6. What is maximum (PSP) Pipe to Soil (ON) Potential we can keep. Which standard suggest to keep this PSP. I have seen several pipelines with very high PSP in interference area, is it OK. to keep high PSP to superpower interference?

7. What is coating stress voltage, what is limit for 3LPE coated pipeline to consider for safety and interference modeling and mitigation purpose?

RECOMMENDATION

The expert panelist has responded queries from the attendees with reference to their experience in similar subject and vast knowledge base and suggestions were welcomed by attendees. The points were responded with case study and history as well referred to particular paper in this conference and / or to standards relevant to the issue. Also several of subject matter experts sitting in audience were also encouraged and have responded particular query related to their area of experience.

Based on discussions throughout the TIF there was an amicable agreement on several points:

- Need of interference detection and mitigation consideration based on long term records and observations on several parameters along ROU and not just instant Voltage and current readings.

- ER probes, coupons installed and monitored properly; would give representative data. However, are of very limited and local exposure and thus need multiple factors considerations to give relatively good guidance for requirement.

- To avoid mutual interference, bonding for new and old pipelines in same ROU is recommended with balancing resistance bond and supported with sacrificial Hot-spot protection for maintaining PSP balance.

- NACE or any other standard’s criteria do not suggest max ON potentials as same is subject to IR drop; however, considering possibility of coating dis-bonding, higher PSP to be avoided; latest coating systems with good adhesion may not have very high adverse impact with little higher ON PSP.
REGULATIONS AND STANDARDS IN CORROSION

PANEL
Dr. D. Parvatalu, Convener ONGC Energy Centre, Dr. Kamachi Mudali, Heavy Water Board, Dr. Sam Mc Farland, Shell Chemicals, Dr. Brenda J. Little, Corr Consulting, LLC, Mr. L.C. Gopalan, IOCL, Mr. Ganesh Wanchole, BPCL, Dr. C.P. Panchal, CORPS

OBJECTIVE
To discuss various national and international standards available including those of NACE standards in corrosion for meeting specific end user needs and further improvement taking into country specific regulations into consideration.

DISCUSSION

- The Convener initiated discussion with three areas of common interest among audience viz., H2S corrosion, MIC and H.T.H.P corrosion and audience interacted with positive response on several areas seeking certain clarifications on standards for various processes in oil industry, power sector etc., with emphasis on development of specific standards for materials, test methods, monitoring etc.

- Among others, the suggestions of Dr. Carlos for greater emphasis on proactive participation of user in making / periodic revision of standards and by Mr. Biplab Kumar on need for revision of MR 0175 in the light of recent materials development need emphasis.

RECOMMENDATION

Need for more proactive participation of industry to improve existing standards published by NACE and provide necessary inputs for periodic revision thereof.

- Explore the possibility for adopting various national standards by NACE or vice-versa.

- Take up the suggestion of Mr. Biplab Kumar, ONGC with NACE for improvement of MR0175 to include 15 Cr and 17 Cr materials based on a white paper from the individual.

CORROSION MONITORING AND TESTING

PANEL
Dr. Anil Bharti, Sulil Kamble, Carlos Palacios, Dr. Buddhadeb Dua, P Suresh, Amish Gandhi

OBJECTIVE
Corrosion monitoring and testing is the primary step to identify the causes of failure of components, plants and equipment, which in some cases can be catastrophic. This program enables one to assess the extent of damage, find out the root cause, take preventive actions and as a long term strategy integrate these into preventive maintenance schedules and plant safety management. Last but not the least, a judicious decision can be arrived at for better material selection and training of personnel for specific skill sets, remaining life assessment and adoption of cost-effective solution to corrosion control and management.

DISCUSSION

- Monitoring is not only corrosion but also the process upsets need to be monitored regularly and tailored for its causes.

- Another key takeaway is where to monitor and that's the key one may monitor at a non-critical location and never find any deterioration.

- Always monitor what goes into your pipeline and control the input always may it be the product or the water being used for hydro.
In a gas pipeline no real handle for MIC what is important is the water being used for hydro-test and a big challenge due to terrain the content of moisture in the gas.

The corrosion control is not to be left with the CP vendor it is also to be looked into and also correlate it with the SCADA data and then share it with CP experts.

Construction again is a challenge and to be able to attend to an issue is also sometimes challenging for e.g. a short between the casing and carrier at the mid length under a highway or rail crossing.

Cathodic disbondment is again a big issue as correct coating methods are not followed like solvent cleaning after blasting is something that needs attention and is typically avoided at site.

Mill scale must be completely removed before the field coating is done

Surface temperature must always be 3 deg greater than the Due point temp

Water must be tested for chlorides the Ph the MIC and the TDS and limits must be maintained

Flow modeling is not used and it must be used to be able to analyse the flow patterns the change in velocities the pitting points the settlements zones the highs and the lows and then coupons must be installed logically at all vulnerable points and then monitored.

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**RECOMMENDATION**

Monitoring & Inspection and no one method is said to be reliable and that one should definitely do both as the former is very important and key to locating a probable failure even while it is setting in. Also standards like the OISD also recommend at least any 2 Methods to be able to concretely identify and locate.

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**Report on Technical Interactive Forum**

**DELIVERING PERFORMANCE THROUGH OPTIMUM COATING SPECIFICATIONS**

**PANEL**


**OBJECTIVE**

The coatings specification plays a very critical role in the design life of an asset. Losses due to corrosion can be staggering. In India, losses mind boggling. A significant reason being that corrosion is viewed as a “maintenance” issue rather than a “preventive” issue. The aim of this workshop is to provide a platform to discuss and address the issues related to specifications and corrosion control based on the feedback received from industry specialists.

**DISCUSSION**

**Facility Owner:**

The Facility Owner admits that the existing organisational set-up does not have adequate professional manpower and the frame work to dedicate corrosion and control to a select few and presently the same plant engineers do this as an add-on task in their portfolio. In general the developments in corrosion management is more seen only in Oil & Gas installations, Refineries and Shipping. Hence this corrosion management awareness program is recommended by the panel and all participating members in unison.

**Project Consultants:**

Discussion was to understand the importance of the coating recommendation and its direct relation to reduction in corrosion allowance in the design stage. The panel recommends to identify the coating specification performance levels in actual field study and collate the data for future recommendations.

**Engineering Fabricators:**

The typical practice is to go ahead giving the painting task on sub-contracts. Discussions were on the process of validation of the painting contractor's expertise in getting the job done as per specifications. Panel recommends strongly for painter qualification in line similar to welder qualification. NACE should extend beyond the expressions of Contractor Accreditation Programs and support the industry to benefit all stakeholders.

**Certifying House:**

The role of certifying house limits to certification and validation of product for a given service and it is of paramount importance to get parallel data from actual field monitoring and then contribute in framing of standards or even recommend for revision. The panel looks for this contribution from the certifying houses and join proactively in NACE Forums.
Paint Manufacturers:

The role of coating consultancy to technical service is being shared very effectively by all leading industrial paint manufacturers; however, the support level from the clients in documentation has to improve drastically to release case studies and papers in national forum to understand the effect of the developmental activity undertaken in new formulations.

TIF discussions were to highlight that the coating industry has to open up with more of low VOC products for the industrial segment and with enhanced performance parameters for products to offer long term durability.

Coating Applicators:

The coating applicators have limited themselves with the task of commercial governance and have not contributed more than acceptance to newer technologies in adapting application techniques, but this is again for select few and the majority is still within the commercial circle and they themselves are not aware to the extent of loss made in their projects for poor workmanship and poor work force deployment. The panel recommends NACE to involve and develop awareness programs and help improve the quality of contracting teams. It should be done in large numbers and in high frequency considering the number of paint applicators in India who work in industries.

Coating Inspection Firms:

The role of coating inspection is very high and important, but we do not see their participation in NACE Conferences in India. A few coating inspectors as freelancers are coming and the industry is basically starved for want of corporates who actively involved with dedicated coating inspectors, protective coating specialists, CP specialists.

RECOMMENDATION

The ultimate summary of the panel discussions revolve on the urgent need to expand the NACE Impact Study to include the coating performance and corrosion loss mitigation techniques adopted by the facility owners which will pave way for structured implementation of improvement strategies.

NICAP again has to be implemented as early as possible with inclusion of painter qualification programs which the industry needs to implement to help in awareness & improve in quality. The panel members and the participating delegate professionals assures NACE that they are prepared to work on the common objective to reduce corrosion Losses in the Industry.