

CORROSION MANAGEMENT

Essential to infrastructure development

It has now been an established fact that reducing the cost of corrosion should be of utmost priority on the national level, to curb the impact of heavy losses in infrastructure and other related verticals. New corrosion monitoring techniques, like online diagnostic sensors, mapping instruments have advanced which could provide continuous information on material degradation due to corrosion, and proper preventive approach and mitigation strategies can then be arrived upon. Our country must confront the crisis that been precipitated by years of under investment in the maintenance and application of advanced technology and new materials to curb the problem of corrosion.

Corrosion has a huge economical and environmental impact on virtually all facets of the world. All kinds of infrastructure from highways, bridges and buildings, the oil and gas sector, chemical processing to waste water systems etc. are affected by corrosion. In addition to causing severe damage and posing a

threat to public safety, corrosion disrupts operations and requires extensive repair and replacement of failed assets. An area of major concern is ageing pipelines, which are the backbone of transportation infrastructure and carry water, hydrocarbons etc.

Corrosion monitoring

Corrosion manifests itself on metallic structures in contact with electrolytes, therefore the concern for corrosion exposure applies to the interior and exterior of piping systems, the interior and exterior of storage facilities and the equipments utilized in process and plant treatments. To ensure that proper Corrosion Monitoring is applied and the infrastructure service life is realised, corrosion exposure must be understood. This should be considered important and incorporated in the planning and design phase of major pipeline infrastructure projects. In order to take care of both design and operations, it is important to define the corrosivity of installation, where experience

analysis indicate that the environment is corrosive and aggressive, corrosion control methods needs to be developed and initiated.

Prior to laying any buried pipeline installation, the soil moisture PH, sulphate corrosion, chloride corrosion and other external factors like the potential mechanical abuse to external coatings etc., should be thoroughly assessed, and taken into account while optimizing the design. The internal corrosion depends upon the fuel being transported, and proper internal coatings compatible with the chemistries of the fluid and operating conditions.

Water distribution systems in large metros and urban townships have been aging and there is a continuous threat due to corrosion induced leakages. Water getting contaminated is a common fad, thus threatening the health and hygiene of the population with e-coli and other bacteria is definitely a common issue. The hydrocarbons carrying pipeline passing through the densely populated



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area can be disastrous, if proper and statutory corrosion monitoring techniques are not in place and are not properly regulated. With

our countries population increasing exponentially and 30 per cent of population migrating towards cities imposing an extraordinary