PLENARY LECTURE
PIPELINE CORROSION:
PIPE DREAMS OR NIGHTMARES?

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Pipelines are the energy lifelines for almost every daily activity; they are essential to all sectors of industry. The non-corrosion community – coerced by negative press and, maybe more so, by social media – may be persuaded to believe that pipelines are a nightmare, notably for those conveying hazardous petroleum products for many miles through local neighborhoods. This presentation counters the nightmare image, and uses practical examples and experiences, to demonstrate that pipe dreams – contrary to dictionary definitions – are not hopes, wishes, or dreams that are impossible to achieve, or are not practical.

Pipelines, like veins and arteries in the human body, are critical for good health, efficient performance, and longevity, obtained by planned inspections (doctors), routine or continuous monitoring (therapy, clinics), chemical treatments (medicines), repairs or replacements (surgery) - as required. In recent years, technological advances in monitoring and reliable data acquisition techniques, and improved knowledge management, have provided improved design options and construction methods, with optimized materials selection, on-line corrosion control methodology (coatings and cathodic protection), and monitoring. In brief, pipelines are safer, more efficient, more reliable, and more economic.

There is no such thing as a perfect world; we all learn from mistakes, some of which warrant sharing in this presentation. Some examples – provided as vignettes – from transporting petroleum products, chemicals, potable and waste water, HVAC systems, and beverages, will demonstrate the continued need to be vigilant about the unique ability for corrosion – in one or more forms – to appear in the precise location where such an event was impossible (a nightmare).

Being aware of a nightmare it is necessary to act to reduce or eliminate the problem and create a new definition for the pipedream.