

Proposed Workshop: *Corrosion Management Applications in Industry*

By: Ali Morshed (allok_morshed@hotmail.com)

Corrosion is a major integrity threat for many industries. Since early 2000s there has been two main options for tackling industrial corrosion. The first option is based on corrosion engineering (CE) approaches and the second option is based on corrosion management (CM) approaches or methodologies.

The first option, which is also referred to as the traditional or classical approach uses CE as its main tool to combat and control corrosion. More precisely, this option uses the three main components of CE, which are: design, material's selection and environmental control. In other words, the traditional and CE-based approach only takes into consideration the parameters or variables which have a direct effect on the corrosion rate or on the corrosivity of the environment.

On the other hand, the new approach which is based on CM, not only takes into consideration the above three CE components, but it also includes various non-CE-based parameters or variables such as, but not limited to: inspections, corrosion rate monitoring, fluid sampling, risk-based inspection, databases, registers, procedures, communication and competency. These non-CE-based parameters do not directly affect the corrosion rate or the corrosivity of the environment; however, their creation or enhancement renders an existing corrosion control system both more effective and efficient (compared to a system which uses only CE to combat the corrosion phenomenon).

The old approach and mentality came under increased scrutiny in 2001 and 2002 in the UK and USA, respectively. The CM Report by Capcis in the UK and the Dr Koch's (NACE-sponsored report) in the US were published in 2001 and 2002, respectively; highlighting the influence of non-technical (or non-CE-based) factors on better and more effective corrosion control and prevention.

Consequently, and since early 2000s a number of CM Models/Platforms have been offered and the most distinguished of them from an international point of view, recognition and applications are the following:

1. CM model or approach promoted and sponsored by UK's HSE (via three publications in 2001, 2008 and 2019)
2. CM model or approach promoted by NACE International (the predecessor of AMPP) known as the IMPACT Plus Platform, offered in 2017
3. The Morshed Corrosion Management Model (MCMM) introduced via five NACE/AMPP book publications in 2012, 2016, 2017, 2018 and 2020 alongside numerous paper publications via both NACE/AMPP and UK's ICorr between 2007 and 2022

The main objective of the proposed CM workshop is to introduce the CM concept, application and benefits to the interested audience and simultaneously highlight the distinction between CE and CM. The other equally important objective is to introduce (or in some cases to re-introduce) the CM concept to various peers in academia who currently run CE-based courses in their respective universities and their graduate students only learn about the CM concept and its applications when they have started their first job and it might be a bit too late!

CM applications, if implemented in a timely and proper manner bring about various benefits including:

1. Enhanced corrosion control and prevention compared to pure CE-based systems
2. Longer asset uptime and simultaneously extended asset operational life
3. Improved personnel safety and environmental protection
4. Optimised corrosion and integrity costs
5. More efficient use of CE measures such as: coatings, CP, chemical treatment and dehydration

Expected duration: 1.0 to 1.5 hrs

Expected audience: 75 to 125 attendees (a very modest estimate!)