

# **Case Study of Cathodic Protection System for Steel Used in Buried/ Immersed Environments or Concrete Structures in Oil and Gas Refinery**

**Sarun Choomchaiyo**<sup>a\*</sup>

*<sup>a</sup>Aurecon Consulting (Thailand), 11<sup>th</sup> Floor, Unit 1101, Pakin Building, 9  
Ratchadapisek Rd, Din Daeng Bangkok Thailand 10400*

*\*Sarun.choomchaiyo@Aurecongroup.com*

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A major cause of unscheduled plant shutdowns in aging infrastructure is corrosion of steel in buried or immersed environments or steel reinforcement in concrete structures. To prevent corrosion problem and minimize the risk of unscheduled maintenance due to costly failures, ultimately risking possible plant shutdown and environmental pollution. Cathodic protection (CP) is one of the corrosion mitigation methods employed in oil and gas plants. After commissioning the CP system, the interval monitoring and inspection shall be conducted to maintain and extend service life in accordance with international standard practices.

The following case studies had been found during inspection at oil and gas refineries:

- Incorrect monitoring and interpretation of CP potential reading
- Underprotection and overprotection problems
- Unbalancing protection level
- Insulating flanges shorted
- Interference and stray current from adjacent systems