

AC Corrosion and the Pourbaix Diagram

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Abstract

AC interference on cathodically protected pipelines is of major concern due to the risk of AC corrosion. Corrosion is generally linked to AC and DC current densities, but incoherence in data from different researches is often difficult to explain. In this paper, ER-probe corrosion rate data from multiple experiments will be used to illustrate how the accepted AC and DC current density criteria may in fact be closely linked to thermodynamically calculated Pourbaix diagrams. The concepts will be illustrated by simple model experiments and discussed in a theoretical context based on literature.

