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## CEOCOR 2018 Abstract

### Corrosion at isolating joints due to cathodic protection

Dr David Buxton  
PhD, MICorr  
Principal Engineer

Dr D G John  
PhD, FICorr, CEng, CSci, CChem, MRSC  
Director – Consultancy Services

Intertek Production & Integrity Assurance,  
Manchester Technology Centre,  
Units 12-15, Longwood Road,  
Manchester  
M17 1PZ

#### **Abstract**

Application of cathodic protection generally provides protection from corrosion and ensures safe operation of pipelines without leaks for many years. Two separate corrosion investigations are discussed where rapid corrosion occurred repeatedly at the same location in each case, in the vicinity of an insulating flange / joint due to stray current effects.

The results of a root cause analysis are discussed whereby it was demonstrated that the most credible failure mechanism was internal stray current. Three corrosion mechanisms were considered to have the potential to account for the internal damage: oxygen corrosion, microbial-influenced corrosion and stray current corrosion. Detailed study of these mechanisms established that only stray current corrosion could account for the rate of corrosion.

For both failures, the source of the stray current and the path taken by the current are described, along with recommendations for remedial action and monitoring.

