Evaluation of the relevance of the risk assessment in the presence of dc stray current

L. SANDERS[a], E. FLEURY[a], A. LOPITAUX[a], R. BOUAFFRE[a], S. FONTAINE[a], L. HENRY[b], M. BARBALAT[c], C. DOMBARD[d]

[a] *GRTgaz, (laura.sanders@grtgaz.com), [b] GRDF, [c] Air Liquide, [d] Fluxys Belgium*

The topic addresses in this work deals with the relevance of the European Standard NF EN 50162 regarding the criterion for the dc stray currents corrosion risks assessment on buried, coated and cathodically protected steel pipelines.

Nowadays, the standard defines a 24h registration of the dc current through a coupon in order to determine the maximum anodic and the reference currents. Those values are then used to determine the amount of time allowed for different ranges of currents compared to the reference current. The determination of those periods of time can be a subjective task leading to difficulties for applying the standard requirements. As the criteria defined in the standard is considered to be too restrictive, GRTgaz and its research department conducted experiments with different interference conditions. In addition, as the standard is in a revision process, work on the criteria suggested by field experience, by the literature and by lab tests were also considered.

Part of the results found would be shared in order to get a better understanding regarding dc stray current and have some information to determine a more relevant criteria to assess the corrosion risk in the presence of such interferences.

Keywords: Stray current; cathodic protection; corrosion; criterion; standard