Requirements for intelligent a.c. mitigation devices, that minimize the negative effects of electromagnetic interferences on pipelines

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Abstract
Pipelines are often influenced by interference voltages from various sources such as traction power supply systems, high voltage lines, earth faults and lightning effects. These interference voltages can occur in form of transient, temporary or steady state overvoltage. The effect of it can be a.c. corrosion, damage of parts of the pipeline or damage to persons. These multiple interferences and protection goals make high demands on decoupling devices, that should discharge these voltages and currents to a defined earth-termination system, without negatively affecting the cathodic protection potential. The sources of influences are discussed and the resulting requirements for a.c. decoupling devices are presented. Moreover, an example of a possible solution is given.

Keywords
a.c. corrosion; a.c. mitigation; intelligent a.c. decoupling device; lightning and surge protection;