Solving shortcomings in CP surveys of complex pipeline structures

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Cathodic protection assessment of complex pipeline systems is often challenging due to the limited access of the pipeline or the congested nature of the system. In particular gas stations, river and high-way crossings, or areas where pipelines require mechanical support to avoid stresses on the asset may require a more advanced approach for assessing the protection level and the need for local cathodic protection systems.

One of the solutions is to perform 3D computational modeling that provides a detailed visual representation of the potential and current distribution around the structure. Survey data collected at soil grade is used to calibrate the model which in turn will provide more insight on the protection level of eventual coating defects and will determine the detection limit of the survey methods.

This paper discusses two case studies where the advanced approach supported the pipeline operator in its decision to implement additional cathodic protection systems.