

### Inspection for shallow internal corrosion

OFFSHORE PIPELINES are different from their onshore equivalent, not only with regard to their design and operation but also with regard to the deterioration process of these structures. While onshore pipelines are threatened by third-party damage and external corrosion, the main threat for offshore pipelines, besides occasional anchor damage, is internal corrosion. Naturally, the accessibility of offshore pipelines is more restricted than their onshore counterparts, and these circumstances are taken into account during the design and construction of the offshore pipeline. Heavy-wall pipe – a wall thickness of 30mm is not uncommon – is used to withstand a high-pressure regime but also to allow for controlled reduction of the wall thickness during the lifespan of the pipeline.

These developments in design, construction, and maintenance of this particular sub-group of offshore pipelines have triggered the deployment of a new in-line inspection technology by the **Rosen Group**, who has developed an eddy-current-based sensor technology that is designed to provide a high-resolution and accurate image of the internal pipeline surface. Additionally, the system provides very detailed information about the internal

diameter and the internal shape such as ovality and dents in the pipe wall.

The company says that corrosion of any size with a diameter of at least 10mm and a minimum depth of 1.0mm can be detected, and internal shallow defects with a maximum depth of 10mm are sized with an accuracy of +/- 0.5mm. The compact design of this inspection tool is advantageous with regards to its pipe passage performance. The robust but flexible sensor suspension works in challenging bore or multi-diameter pipelines, and the absence of a magnetizer unit enables a low-friction application. This can be a low-flow or low-pressure autonomous pigging application, as well as a tethered tool operation. ●