



AssetCare Counts#10

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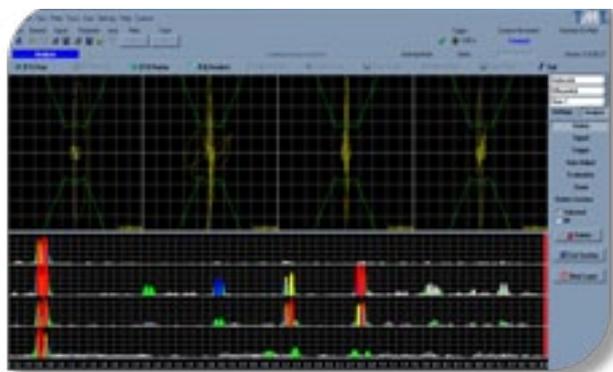
► Microbial Induced Corrosion detection in Piping and Pipelines



**SLOFEC pipe scanner
positioned on pipe**

Microbial Induced Corrosion (MIC) is an increasing problem as assets age. This type of damage mechanism can result in a variety of defect configurations, but is generally in the form of small diameter very deep conical pits that can be found anywhere in the pipe. Because of this, it is extremely difficult to determine where the damage is likely to be worst. In addition, the growth rate of MIC defects can vary dramatically depending on localised conditions, so the better the inspection strategy, the more reliable predictive maintenance and future integrity management plans.

As a result of the nature of the defect and the difficulty in predicting the location of MIC, a specific inspection strategy is required. Conventional inspection techniques like manual ultrasonic "spot" thickness surveys or even manual ultrasonic scanning can often miss the defect, leading to an unexpected failure.



Screen display showing SLOFEC data

In most cases the approach should be based on a rapid and reliable "screening" technique; to cover as much of the piping as possible, combined with a focussed and accurate ultrasonic inspection follow up to accurately measure the remaining wall thickness at each pit. To be effective, the inspection strategy should try to achieve 100% coverage, and thus increasing the probability of detection.

ALS have developed a special approach to the detection and measurement of this damage mechanism. This includes the use of our SLOFEC technology as a screening tool followed up with manual ultrasonic measurement.

The piping is scanned using the SLOFEC technique, which effectively detects the MIC pitting, allowing ALS to focus the manual UT survey achieving reliable and accurate results.



Typical MIC pit

In addition, and depending on the severity and location of the damage, additional inspection techniques can also be added to the survey including TOFD and Colour Corrosion Mapping.

All data collected can then be used for Fitness for Purpose assessments, remaining life calculations and future inspections and test plans.

MIC has traditionally caused costly problems in many industries throughout the energy resources and infrastructure sectors. The introduction of new technologies that were previously unavailable has enabled these industries to make informed decisions and pursue appropriate asset management strategies. ALS Industrial is committed to innovation and is constantly researching new methods to further add value to clients.

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