What is magnetite exfoliation flakes and how to detect it?

Magnetite tends to exfoliate when going through heat cycles. When exfoliated magnetite flakes fall down inside the tubes, they tend to accumulate in the lower tube bend sections and will eventually cause magnetite blockage in the bends. When the blockage exceeds a certain limit, the tube may fail in the form of rupture. Early detection of magnetite blockage is therefore key to ensuring normal operations.

Russell NDE Systems Inc. has provided a solution, using through transmission (TT) electromagnetic technique for the detection and quantification of magnetite blockage in stainless steel tubes.

Russell NDE Systems has designed a sophisticated yet simple to operate ET system that effectively detects magnetite exfoliation flakes.

The ET system consists of the Ferroscope TT unit and a specialized scanner which, can inspect the vertical and horizontal sections of the tubes (including bends) in one run.

**Software Features**

- Built-in report generator creates an Excel file
- Friendly Graphics User Interface
- Realtime percentage blockage calculation
- Overview mapping
- Cross-section image of blockage

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