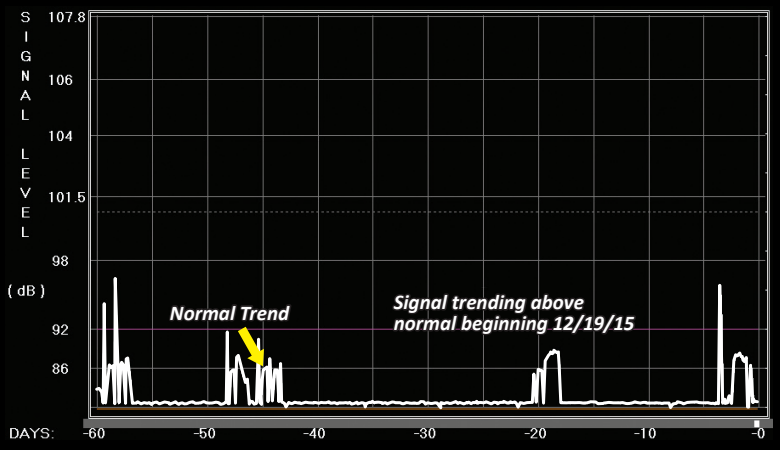
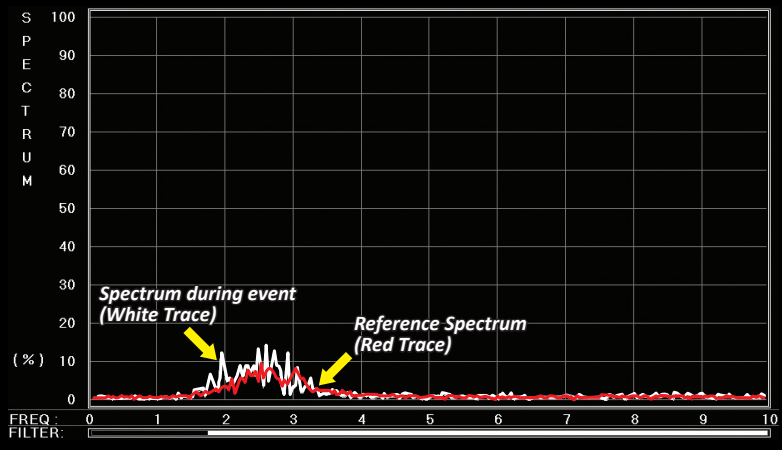
MISTRAS | TRIPLE 5

One Source for Asset Protection Solutions

PRODUCTS & SYSTEMS DIVISION | CASE STUDY



60-DAY TREND FOR CHANNEL 9



SPECTRAL ENERGY DISTRIBUTION OF ACOUSTIC SIGNAL

Leak History #41 for Peaking Gas Plant

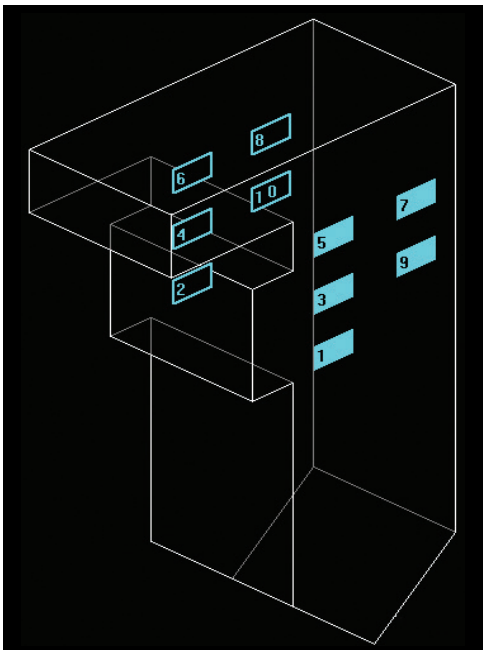
The leak occurred in the Economizer section of a Combustion Engineering, Balanced draft Twin Furnace, Natural Gas fired unit. The unit is equipped with 10 metalborne waveguides (sounding rods) welded to the seal welds between the tangent tubes monitoring the back pass area.

The signal first began to trend above normal levels 12/19, increasing to 89dB from normal 86dB, soon after the unit entered service on 12/17. The unit was taken offline 12/20 for economics. The increased acoustic levels were reported to the plant on 12/22 in the weekly acoustic surveillance report. Due to the reported increase, the plant investigated the area while offline. The plant was again in service 01/03 – 01/06.

During the investigation, the plant discovered that there were two leaks in the economizer. The first was at the inlet north side, directly behind an anti-rotation plate connected to the bottom of the header. The root cause was determined to be the plate rubbing on the tube. The second leak was on the south side water wall. The leak was initiated from an OD pit from the end line of a piece of membrane.

The only indication the plant had an issue was the increase in the acoustics while the plant had been running. The plant was able to run one more time, due to demand, with the known leaks and plan the repairs according to the plant's schedule.

Problem: Through-wall failure
Boiler: CE twin furnace
Location: Economizer
Equipment: 10 metalborne waveguides



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