

Tank Floor Acoustic Emission Inspection

ATTAR uses state of the art acoustic emission equipment to monitor and classify the condition of tank floors, allowing "good" tanks to be sorted from "bad" tanks.

Acoustic emission monitoring detects active leaks and active corrosion. AE is a screening tool that indicates those tanks with more active corrosion/leaks and these are more likely to fail earlier unless some action is taken. It tells you which tanks to open and carry out normal NDT on first.

The Benefits include:

- Acoustic emission is a non-invasive and non-destructive technique.
- Cost-effective technique which can quickly evaluate tank floor condition of many tanks in a tank farm in order to prioritise maintenance.
- Convenient method not requiring tank to be emptied or cleaned.
- Results can then be entered in risk management models to plan and prioritise maintenance.

Equipment

ATTAR uses Physical Acoustic Corporation DiSP or μ Samos acoustic emission equipment with AEwin software with special tank floor location option. The sensors used are very sensitive and are in the frequency range required to detect leaks and corrosion.

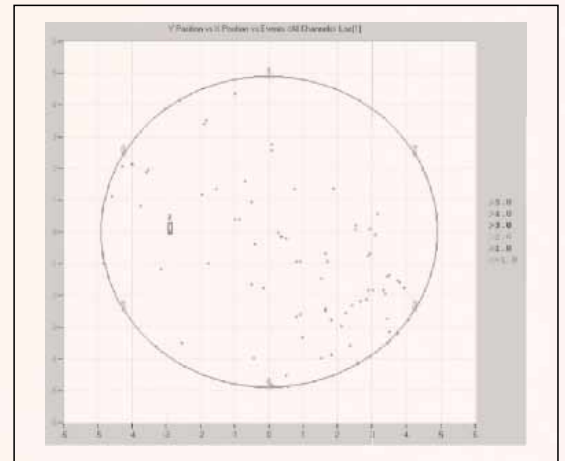
Testing Procedure

Sensors are mounted on the outside circumference of the tank and the acoustic emission generated in the tank is recorded over a 1-hour period. The preparation required is that the tank remains static for a short period of time prior to and during testing, after initially being filled to better than 70% full.

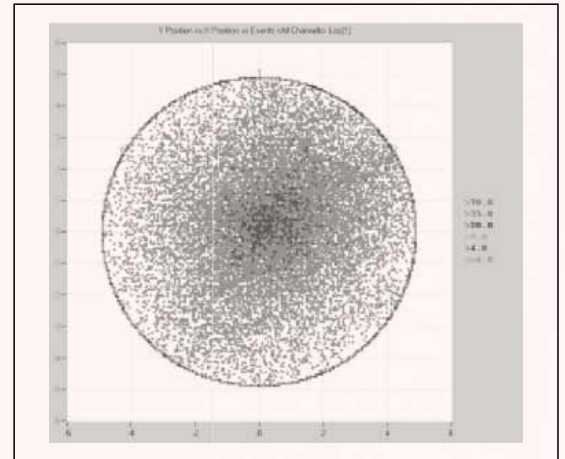
Report

The test results are then analysed and any potential leaks are identified and graded in terms of their severity. A map of the floor is provided in which a percentage of

the data is located showing areas of high activity but more importantly the overall condition of the tank floor is graded from a level A that is for tanks with very low acoustic emission which will require retesting in five years time to Level E tanks that have very high acoustic emission activity and would require immediate internal inspection.



Plan view of tank floor condition. A "good" tank, AE testing indicated a low level of active corrosion on the tank floor.



Plan view of tank floor condition. A "bad" tank, AE testing indicated a very high level of active corrosion on the tank floor.



ATTAR

Advanced Technology Testing and Research