

in MFL, but a thick 15mm annular plate with coating will reduce the accuracy and detection capability.

NDT techniques can be complimentary, and in some cases they may need to be combined to give the best result. Again this comes back to the detailed procedure to guide the technician, and what assessment on site should be done to decide which approach to take.

Verification of results

As an inspection is performed verification of results should be carried out to cross check any indications, and also ensure the procedures are being followed. This is easier to do with that latest inspection tools such as the Silverwing Floormap 3Di or Scorpion wall crawlers as all calibration data and measurements are recorded digitally. It is entirely possible for inspection results

to be sent off site for review by a level III, who can see what has been done and make an assessment of the inspection.

For in tank inspection it is very important to complete the verification whilst tank access is available, but for external inspections these can be carried out later. There is at least one inspection company in the US that has embraced this and can provide remote level III assessment of its inspections by sending live inspection data to its assessment team.

Archiving of results and data sharing

Traditionally an inspection will deliver a paper copy of the results with an assessment that can be archived. This is a very useful document but does not give full access to the inspection data, limiting any future analysis of results.

When full data capture

of measurements and calibrations is done this data can be subsequently reviewed to see what the technicians carried out, and also re-process with new accept/reject limits as requirements change.

By recording all measurement data it also gives the opportunity to re-process with new analysis techniques that can improve the quality of measurements without re-scanning. It is therefore possible to improve understanding of asset condition, and potentially extend working life as a result.

Companies such as Silverwing are also developing inspection database management tools, such as C-Map, that will provide easy access to inspection results across multiple sites, making an inspection a live document that can be shared between engineers and sub-contractors such as repair teams,

and also make historical comparisons for risk based inspection (RBI) much easier.

Conclusion

If an inspection is performed with attention to training, procedures employed, use of the latest technologies, verification and data analysis it is possible to have a high confidence in the inspection, whilst remaining efficient and cost effective. With improved archiving through database management tools, leading to easy interpretation of data with powerful analysis tools, it will in future aid tank engineers to make decisions based on higher confidence in the inspection, with potential to reduce the operating safety margins and therefore cost.

For more information:

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