

Next Generation Tank Floor Scanning – Total Inspection Efficiency

Matthew Boat¹, Paul Jackson²

¹Silverwing, Eddyfi Technologies, United Kingdom, ¹LRUT and MFL, Eddyfi Technologies, United Kingdom

Above Ground Storage tanks are subject to obligatory and periodic inspection routines. Due to the harsh operating environments and the catastrophic impact of failure, storage facilities are governed by regulatory practices to ensure the assets are fit for service. There are numerous potential damage mechanisms associated to the in-service operation of tank storage and each risk of failure requires careful management and routine inspection. Underfloor corrosion is specifically related to the soil interface underneath the tank floor. Regarded as one of the most significant threats in tank storage, floor corrosion often is identified as a risk during integrity management programs and inspection of this potential defect will regularly be included within the written scheme of examination/inspection. Due to the large service area of a tank floor, the typical inservice condition of the scanning service and the general working conditions inside a storage tank, the inspection method identified to detect underfloor corrosion, must be fast, robust, reliable and provide a high value of confidence for minimum detectability. Magnetic Flux Leakage systems have been historically deployed for this part of the inspection process and the technology has a proven track record for being able to provide consistent results within these harsh and uncomfortable environments. However, the historical practices have been challenged for inefficiency and asset owners are insisting for improved productivity, without sacrificing accuracy and traceability. The latest generation of MFL technology has been developed to significantly improve inspection efficiencies and has identified specific areas within the work flow and scanning parameters that can provide an asset owner with a final report in as minimal time as possible. This results in direct cost savings for reduction in labor time, indirect savings by getting the tank back in-service and reduces risk of confined entry by minimizing the time spent inspecting. Such developments include; Minimising setup time using software driven inspection plans, onboard LED lighting system to reduce the need for pre-inspection setup, paperless reporting strategy that will include assisted defect recognition and focussed supplementary inspection, minimised deadzones to maximise floor coverage and curved scanning capability to map the critical zone of the annular plates