

1.3.30. LONG RANGE GUIDED WAVE INSPECTION – CURRENT DEFECT SIZING CAPABILITIES AND FUTURE PROSPECTS

Cawley P., Ma J., UK Research Centre in NDE Imperial College, UK

Long range ultrasonic guided wave inspection is now used routinely in the petrochemical industry to screen long lengths of pipe for corrosion. The method is attractive because it gives 100 % coverage of the volume of the pipe, and tens of metres can be covered from a single transducer location. Therefore full coverage is obtained in a fraction of the time required for spot thickness gauging. The method gives an indication of defect severity but cannot give a precise value of maximum wall loss. It is therefore necessary to follow up defective areas with conventional techniques, but the location of the suspect region is known precisely so this is not an onerous task unless the location is inaccessible. Recent research has led to the development of focusing techniques that improve the sensitivity of the test, and give circumferential as well as axial location of features; they also improve the sizing capability, but follow-up is still required. This paper will describe the basic method, describe the improvements provided by the current focusing technology and discuss future improvements.