Non-destructive Testing of Split Sleeve Welds by the Ultrasonic TOFD Method

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This article deals with the non-destructive ultrasonic testing of split sleeve butt joints by ultrasonic methods. Split sleeve is used to repair gas pipelines with gas leakage. The new ultrasonic methods TOFD and Phased Arrays are compared considering to the selected butt weld configuration. To compare testing methods, ES Beam Tool software was used to prediction of ultrasonic beam spread through weld joint. TOFD technology was selected to butt weld section testing according to the beam spread simulation results. The results of ultrasonic testing by TOFD method were compared with results of macrostructural analysis of weld joint. Controlling the suitability of testing method to planar defect identification, the artificial defects were prepared and tested. The appropriate setting of measuring technique can be predicted from experimental results.

Keywords: Ultrasonic testing, TOFD, Split Sleeve, Defects

Acknowledgement

The article has been created within the framework of VaV task assigned by SPP-D Company, also nr. 561/PG04/2011 supported by uninvesting fund EkoFond, which founder is company SPP, a.s. and by SPP-D Company. This paper has been arisen also thanks to supply of grant project VEGA-1/0547/11, KEGA-039ŽU-4/2011.

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Paper number: M201474