

Exploring Weld Rejection Rate Limits and Tracers Effects in Construction Projects

Authors : Abdalaziz M. Alsalhabi, Loai M. Alowa

Abstract : This paper investigates Weld Rejection Rate (WRR) limits and tracer effects in construction projects, with a specific focus on a Gas Plant Project, a mega-project held by Saudi Aramco (SA) in Saudi Arabia. The study included a comprehensive examination of various factors impacting WRR limits. It commenced by comparing the Company practices with ASME standards, followed by an in-depth analysis of both weekly and cumulative projects' historical WRR data, evaluation of Radiographic Testing (RT) reports for rejected welds, and proposal of mitigation methods to eliminate future rejections. Additionally, the study revealed the causes of fluctuation in WRR data and benchmarked with the industry practices. Furthermore, a case study was conducted to explore the impact of tracers on WRR, providing insights into their influence on the welding process. This paper aims to achieve three primary objectives. Firstly, it seeks to validate the existing practices of WRR limits and advocate for their inclusion within relevant International Industry Standards. Secondly, it aims to validate the effectiveness of the WRR formula that incorporates tracer effects, ensuring its reliability in assessing weld quality. Lastly, this study aims to identify opportunities for process improvement in WRR control, with the ultimate goal of enhancing project processes and ensuring the integrity, safety, and efficiency of constructed assets.

Keywords : weld rejection rate, weld repair rate in joint and linear basis, tracers effects, construction projects

Conference Title : ICIMP 2024 : International Conference on Industrial Materials Processing

Conference Location : Istanbul, Türkiye

Conference Dates : August 15-16, 2024