



Flaw Analysis of a Gas Scrubber

Anomalies were discovered in the heads of two inlet separator vessels during a routine ultrasonic inspection. DNV was asked to assess the flaws and to determine if repair was necessary. Assessments were performed according to API 579 and used as a basis for fitness-for-service assessments. The flaws were found to be acceptable and costly repairs were avoided.

Critical issues

To provide an accurate fitness-for-service evaluation of separator heads with known anomalies.

During routine ultrasound testing (UT) at a compressor station, the client discovered anomalies in the heads of two inlet separator vessels. After more detailed UT, five flaws were documented in the two vessels. The client needed DNV to provide an accurate fitness-for-service evaluation of the anomalies and determine if repairs were needed.

Solutions

DNV performed Level 1/Level 2 assessments from the API Recommended Practice 579 on four of the flaws using finite element analysis. Due to the sensitive location of the fifth flaw, which was close to the nozzle, a Level 3 analysis was employed using finite element analysis (Level 1/Level 2 assessments are not acceptable practices for that location). Finite element analysis was used to calculate stresses, which were used as a basis for a fitness-for-service assessment. From the assessment, it was concluded that the flaw was acceptable for service by Level 3 criteria.

Value delivered

- A detailed finite element analysis and fitness-for-service assessment was conducted
- A reliable and accurate assessment of the flaws in the separator vessels was provided
- The conclusions prevented unnecessary, costly repairs

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