

Workflow automation in non-destructive weld inspection at Applus+ RTD

Folkert Bleichrodt¹, David Blom¹, Sjors van Noort¹

¹Technology Center, Applus+ RTD, Netherlands

As non-destructive methods for weld inspection become more accurate, smaller defects can be found with large probability of detection. At the same time, the welding process is increasingly more automated resulting in fewer flaws. The limited occurrence of weld defects makes the inspection work tedious while still requiring full attention of the NDT operator. Workflow automation is therefore a necessity to speed up the inspection work, reduce human error, and ensure data consistency and quality. At Applus+ RTD substantial steps have been taken with respect to workflow automation. The automation approach consists of three phases. Automatic quality tests have been developed which run in the background during an inspection to warn the operator in case of inconsistencies in the data or data acquisition. For example, start and end of a girth weld scan are compared to ensure sufficient overlap and the length of the image is compared with the nominal pipe circumference. Inconsistencies can point to slip of the encoder. Secondly, software tools have been developed to help the operator speed up the data analysis while still maintaining accuracy. Image quality indicators, for example, can be analyzed automatically after being selected by the user. Finally, steps have been taken towards automatic detection and classification of weld defects. These steps combined lead to a high throughput scan process that guarantees performance and scan quality exceeding the demands of the standards.