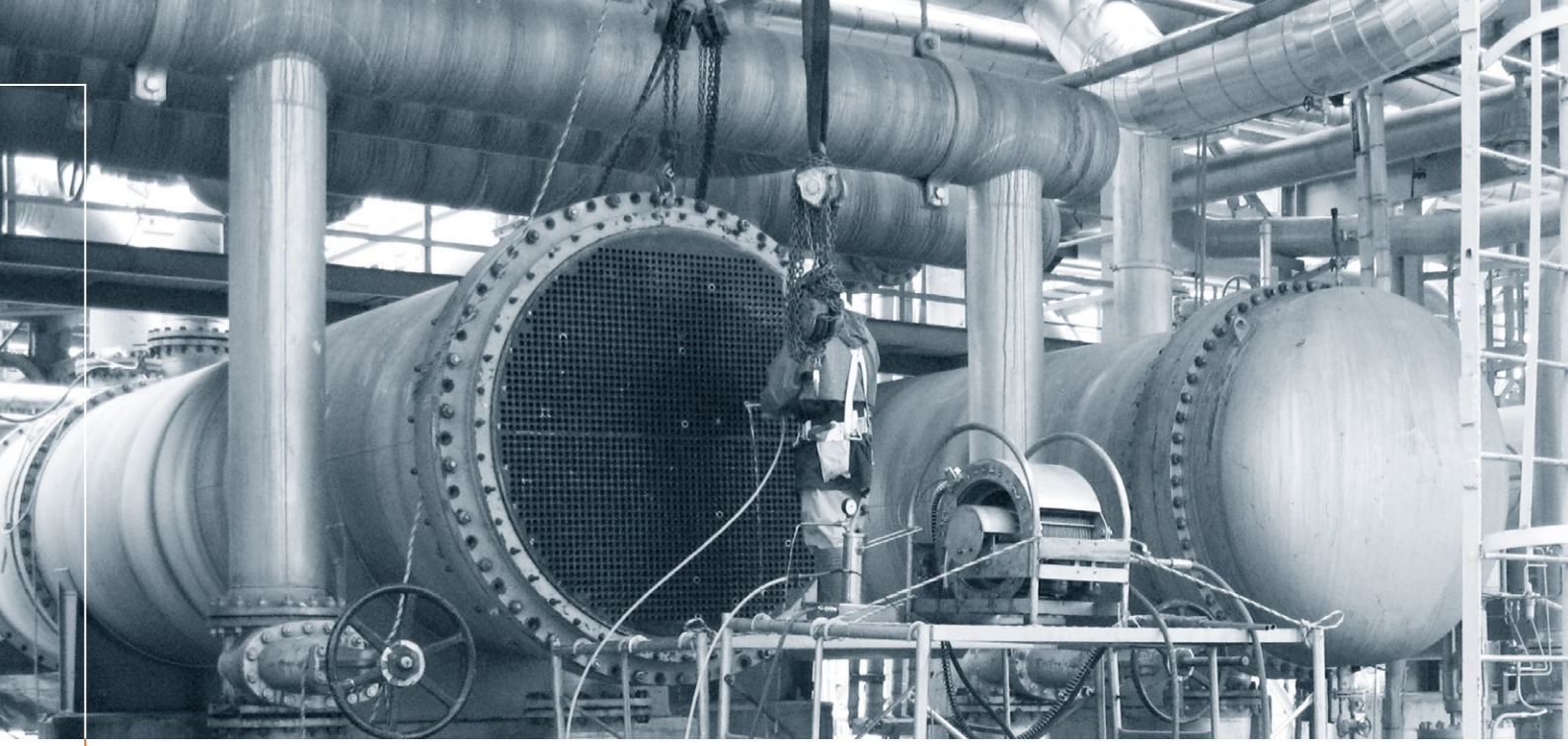


HEAT EXCHANGER LIFE ASSESSMENT SYSTEM (HELAS)

WWW.SGS.COM/NDT

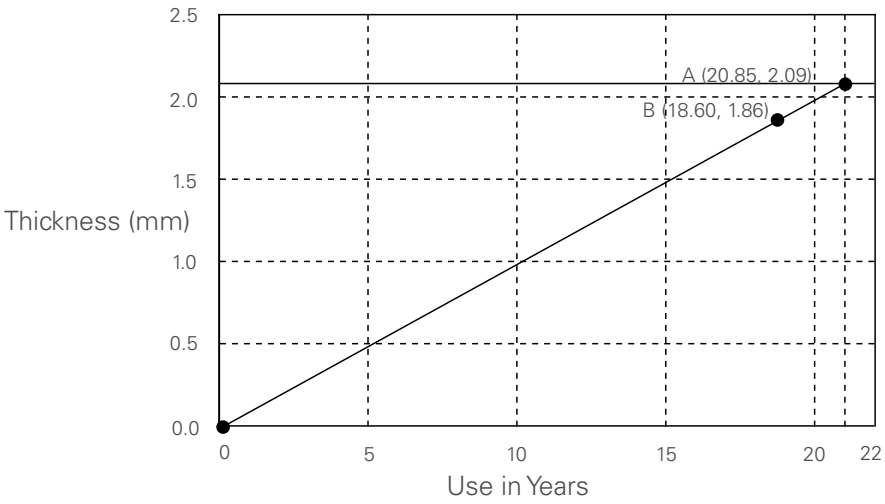
SGS

REMAINING LIFE ASSESSMENT BY MEASURING
THE DEPTH OF CORROSION

Heat exchangers are vital components in your processes and good performance ensures safe and energy efficiency operations throughout operations. Therefore heat exchangers are regularly inspected and taken out of operation. SGS offers a complete package of inspection in and around heat exchangers in order to create a full set of data, which is easy accessible and ready for follow-up. Several technologies and tools can be applied depending on your preference, history built so far and technical requirements.

HELAS has been developed to inspect heat exchangers where corrosion is expected only on the inside tubeing. The inspection speed is much higher than using IRIS, which makes the inspection faster and more efficient. All data is directly analysed and leads to a complete life time assessment of the inspected pipes including a 'wall thickness' report. The basic principle is the measurement of ultrasonic immersion length converted into corrosion depth inside cooling water/air fin type tubes. Based on the maximum value of corrosion measured, extreme value analysis is performed and the remaining life of the heat exchanger is estimated by evaluating the maximum corrosion depth which can exist in the whole heat exchanger.

PREDICTION OF LIFE TIME REMAINED GRAPH



EXTREME VALUE ANALYSIS

The depth distribution of corrosion which occurs in specific equipments is different according to particular probability distribution.
Each sample's basic distribution follows an index distribution the maximum of which follows the Gumbel distribution. SGS calculates the remaining life by estimating the maximum corrosion with MVLUE (Minimum Variance Linear Unbiased Estimate) and MLH (Maximum Likelihood) methods.
Our service offers is a complete answer on your primary request to ensure safe operation. Our assessment does not end with the report only. It will conclude with a full calculation of remaining life time and follow-up inspections.

ADVANTAGES OF HELAS TECHNOLOGY

- All materials can be inspected
- High speed inspection of max. 200 mm/sec
- Corrosion data acquisition max. 10,000 point/sec
- High precision data presentation (±0.15 mm of corrosion depth)
- Remain Life Assessment & Transition Graphs
- Very comprehensive and portable system

THE SGS EXPERTS

SGS Industrial Services has the knowledge, expertise and experience to perform conventional and advanced NDT inspections around the world using our unique network. Our services offer variations from Guided Wave and the conventional NDT techniques to Risk Based Inspection (RBI/AIM), Time of Flight Diffraction (TOFD), Corroscan, Positive Material Identification (PMI), Magnetic Flux Leakage (MFL), ACFM, Leak Testing, Thermography, Electromagnetic Testing (ET), RFEC, IRIS, Digital Radiography, Radiation Detection, RVI and Endoscopy Inspections.

We are pleased to provide services to any location around the world, pertaining as to how SGS can help you in improving the reliability of your processes and assets.

CONTACT US
WWW.SGS.COM/NDT OR INDUSTRIAL.GLOBAL@SGS.COM

WHEN YOU NEED TO BE SURE

SGS