Stanley Inspection has developed phased-array techniques for use on complex geometries such as turbine blades and discs in situ, eliminating the need for costly removal and refitting.

Stanley Inspection is a world-wide leader in specialist inspection, providing non-destructive testing (NDT) and heat treatment services. The company provides a full range of modern services that can successfully take clients through design and engineering to resourcing, execution, long term maintenance and safe operation,” Meerholz tells African Fusion.

The company has ISO 9001:2000 certification and is a preferred supplier for major clients in South Africa’s power generation, petrochemical and oil and gas industries including Sasol, Eskom, Chevron, Fluor, AccelorHittal, Babcock and Rotek Engineering. “As an international service provider, we have worked in Swaziland, Kenya, Sao Tome, Namibia, Ireland, Nigeria, Abu Dhabi, Brunei, Congo, Botswana, Cameroons, Mauritius, Seychelles, Turkey, the United Kingdom, and the United States,” Meerholz says.

SISA has offices in Johannesburg, fluorescent and visible dye penetrant and magnetic particle inspection; IRIS and eddy current tube inspection; laser profilometry; and many more.

Over the past two years, depending on individual power station requirements, SISA has been actively developing advanced tube inspection and phased array inspection techniques for South Africa’s power industry. “We pioneered smallbore phased-array UT inspection on boiler tube with wall thicknesses of 3.4 mm and up, comparing the results to traditional X-ray techniques. We have also developed phased-array techniques for use on complex geometries such as turbine blades and discs in situ, eliminating the need for costly removal and refitting,” Meerholz informs African Fusion.

For the petrochemical industry, SISA has been active in the detection of high temperature hydrogen attack (HTHA), which occurs in refinery equipment exposed to hydrogen at temperatures above 200 °C. At high temperatures under dry conditions, hydrogen gas disassociates into atomic hydrogen, which can then diffuse into the steel structures of vessels. “Using advanced SIFD along with total focusing method (TFM) phased array equipment, we are able to detect tiny HTHA defects that indicate the onset of potentially catastrophic HTHA-induced failure,” he explains.

On the nuclear side, Meerholz cites the company’s involvement with the PWR refitishment project at Koeberg. These tanks store borated water for the reactor cavity and spent fuel pit cooling system. This was the first new generation of PWR tanks replacement project in the world, and was recently completed using SAWW-trained UT technicians with nuclear site training enabling them to complete the contract successfully,” he adds.

SISA has been collaborating with the SAWW with respect to training for many years. “We were one of the first inspection companies to work with the SAWW and, over the years, we must have sent over 200 people on SAWW NDT and Inspection courses. Our heat treatment specialist, James Kiwan, wrote the training syllabus in conjunction with the SAWW to supply industry with qualified Heat Treatment technicians,” he says.

Currently, we are collaborating with Mark Digby and Harold Janssen to develop a training course encompassing eddy current, IRIS (internal rotation inspection system) and remote field techniques to certify technicians to ISO 9712 for tube inspections,” Meerholz relates, adding that the first of these courses is planned for May.

STANLEY Inspection SA is a preferred NDT inspection provider on outages and maintenance for six of Eskom’s 15 power stations. “We are now also picking up work in African mines and in petrochemical and nuclear plants in the Middle East, for example. We are specialists in high temperature phased array inspections, which can be done while a plant is still online, that is, before a shutdown. This enables operators to better plan for required maintenance during a shutdown, and this can minimize downtime.

“We have also developed a CR digital radiography technique that enables us to do online corrosion and thickness testing without having to remove the insulation from pipes and vessels,” he explains.

“Services such as ours are absolutely necessary, not only to ensure safe operation, but also for preventative maintenance. Big asset owners have routinely seen the cost-saving benefit. Our inspection work often prevents dangerously catastrophic and very expensive failures,” he says, adding, “which, for the owner, is worth its weight in gold.”

Turning attention to current developments, Meerholz says that, while SISA technicians understand data, the company is currently developing simpler and more user friendly NDT reporting packages to make it easier for engineers to understand results and their implications. “In collaboration with some US companies, we are working on a very visual reporting package that will help maintenance professionals to quickly assess the condition of their plant so that they can better direct their maintenance and shut down activities.

From an internal perspective, “We have new management improving the company culture and quality to drive our offering towards industry’s real needs,” he continues.

“We see ourselves as a blue ocean company that will never cut corner to compete. We are a specialty company that thrives on innovation and new technology and we are continually helping our NDT technicians to know and do more.”

“We see modern and speciality inspection as an integral part of fabricating and operating safe, efficient and reliable modern plants. It raises quality levels, reduces failure risks, increases reliability and therefore benefits owners, operators, employees, customers and the broader society,” Meerholz concludes.