



Founder and CEO of New Age Engineering Solutions, Joseph Zinyana and his business partner Suzan Zinyana.

**New Age:** a transformation success story

Founded back in 2003, New Age Engineering Solutions is one of South Africa's great success stories with respect to the transformation of the mechanical, welding engineering and fabrication sectors. African Fusion talks to Joseph Zinyana about the company's rise to prominence and its current trajectory.

ew Age Engineering Solutions was first established back in 2003 by Suzan Zinyana while her husband, Joseph, was employed as a welding engineer at Sasol in Secunda. "Suzan and I started the business as partners and we are still both involved, with Suzan heading up business development while I take care of operations," Joseph Zinyana tells African Fusion.

"Initially, we were called New Age Welding Solutions with a focus on consultancy work on the welding engineering and quality control side. Having had substantial experience at Sasol and Mittal Steel, I became the welding consultant to several of Sasol's sub-contractors, and this guickly extended to Eskom sub-contractors and to fabrication and construction companies servicing the refinery sector," he continues.

When asked about their first sig-



A component for the autothermal reformer (ATR) project that involved welding 38 mm stainless steel in 321 H reformer material.

nificant success, Zinyana describes work done for JLH engineering, then owned by Saul Nhlabathi, a company doing fabrication work and onsite welded construction at the Tutuka Power Station near Standerton. "In 2005, we received an order for R300 000, which was the order that first set the company on an expansion path," he recalls. "I became JLH's consultant for welding engineering and quality control, supported by two other people at that time."

"Shortly thereafter, we won a shortterm contract with Steinmüller. New Age was subsequently awarded a three-year contract with the Engen refinery itself, which ran from 2005 to 2008, helping Engen's Inspection Authority to manage the quality from contracted fabricators and installers on their sites. We dealt with all of the welding engineering related problems, trouble shooting and com-

> ing up with solutions. In the same period, New Age also won a contract with D&M Engineering, which was providing services to the Engen refinery

"This involved a lot of pressure vessels and pressure piping, all constructed to the relevant codes. Engen was the first company at that time to construct its own transfer lines, which involved different code requirements," he says, adding that in 2007, another welding engineering contract with Eskom Nuclear Power Station (the only nuclear plant in Africa) was awarded to New Age. This contract has been repeatedly renewed, with the current contract covering the 2014 to 2020 period.

## The move to fabrication

In 2006, New Age Welding Solutions was awarded its first turnkey fabrication and installation contract. "We were asked to install a new valve station and pipeline for the cooling water system for the basic oxygen furnace (BOF) at ArcelorMittal's Newcastle mill, which was still called Iscor at that time. This was our first foray into fabrication and installation work. And it quickly led to other work, for Johnson Controls on its mine ventilation installation systems, for example. In 2006, Thermtron awarded a contract to manufacture a mobile plant for a company in Europe called Gasrec. This was the first time that New Age had to employ the ISO 3834-2 quality management system before it was adopted in South Africa by many other companies.

In 2012, Joseph Zinyana was contracted to return to Sasol, this time on the maintenance side as a fabricator and installer of pressure components and piping. "This was our first maintenance contract, having previously been involved with consultancy, fabrication and installation work. This was another boon for New Age, because maintenance is ongoing and involves long-term sustainable contracts. I was initially awarded a three year contract, which complemented my other consultancy work and enabled us to further expand.

"The contract involved planned dayby-day maintenance, with a New Age presence permanently onsite. At that time, we already had some 20 teams executing site-approved maintenance work on various sites around the country, each consisting of a welder, a pipe fitter and an artisan," he explains.

Then in 2014, New Age had another

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significant breakthrough when awarded a maintenance contract for mechanical and welding maintenance at the Koeberg Nuclear Power Station in the Western Cape Province. This was followed by an additional professional welding services contract - and these have been repeatedly renewed, first until 2019 on the mechanical side and, earlier this year, New Age was re-awarded the contract for a further five years.

Also awarded to New Age in 2014 was a safety, health, environment and quality (SHEQ) advisory role with Eskom MegaWatt Park to perform welding, mechanical and civil inspection work for the Medupi and Kusile new-build power stations. "We also performed offshore conformity inspections on equipment and components being manufactured overseas, to ensure they were fit-forpurpose before being shipped," he informs African Fusion

Another mechanical and welding contract for the Chevron refinery in Cape Town, now Astron Energy, followed in 2015. This was initially a shut-down contract, but in 2016, we were awarded the full maintenance contact for Astron. which is only due to expire in 2021," Zinyana reveals.

## Capabilities and facilities

"We are now a big business: Our head office is in Evander, near Secunda in Mpumalanga and that is where we have our own fabrication facility. This is our flagship facility and is fully equipped with 10-ton cranes, guillotines/croppers, plate rollers and bending brakes. We also have ten welding booths equipped to do our own internal welder training.

"In addition, we have a fabrication facility on Sasol's Secunda site and, having won a maintenance contract in 2018, a permanent Sasol presence in Sasolburg.

"In Cape Town, we are based in Rivergate, where we have another fabrication shop, and we operate three permanently manned satellite offices, one inside the Koeberg precinct, another at Astron Energy and a third in Century City in Cape Town."

In terms of New Age's company structure, Zinyana says that the company remained relatively unchanged until 2017. "Then we partnered with Prommac, a mechanical and turnkey solutions company and realised we complemented one another, because they were short on the welding capability side and we

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were looking to participate in more MEIP (mechanical, electrical, instrumentation and piping) work. So we did a share swap to formalise our partnership: Prommac now owns a minority stake in New Age and we own a minority share of Prommac -and together, we trade as the CG Tech Group," he tells African Fusion.

Some notable recent projects by New Age Engineering Solutions and CG Tech include:

- The safety injection system for the Koeberg Nuclear Power plant piping system, predominantly the emergency cooling systems. The project was accomplished using an automated welding system in collaboration with a company in the USA. This was a one-of-a-kind project that satisfied the Nuclear regulatory requirements. The autothermal reformer (ATR) project for reforming methane into hydrogen gas at Sasol. "This involved welding 38 mm stainless steel in 321 H reformer material, which is designed to operate at temperatures of around 650 °C," Joseph Zinyana
- explains. Sasol's steam line replacement, which was done in collaboration with Prommac and delivered four days ahead of schedule. Prefabrication was achieved 30 days and the installation in 15 days - and this also involved a high temperature high chrome material that presents welding challenges. This was one of the 2018 Sasol flagship projects.
- The Astron Energy refineries 2019 refinery turnaround, This was a lifetime biggest project for New Age, given the value of the project and the amount of people employed. "Astron hosts one of the highest quality and safety standards previously derived from Chevron. Working on a plant like Astron is not only a pleasure but a great partnership with regards to

quality standards," says Zinyana. With respect to 3834 Certification. all of New Age's fabrication facilities and onsite operations are certified to ISO 3834 Part 2, in accordance with the SAIW's Welding Fabricator Certification







A cyclone scrubber for a chemical plant being fabricated at New Age Engineering Solutions' Evander fabrication facility.

Scheme, "This standard is the specialised standard for all high-integrity welding fabrications. For anyone wanting to deliver quality welded products to suppliers or plants, ISO 3834 is essential. It is the standard that specifies all of the inprocess procedures and quality checks needed to ensure that quality is being put in place progressively, while welding fabrication proceeds. If a fabricator follows these requirements, quality issues can either be prevented from arising or immediately eradicated, ensuring that a quality product is delivered at the end of the day," he says.

"ISO 3834 enables fabricators to measure themselves and their work against the standards for the duration of the manufacturing and installation process. I encourage all fabricators - of high integrity pressurised systems or conventional support structures - to adopt this system. It will raise their product quality, which is sure to help their business to grow well beyond expectations," Zinyana advises.

The future outlook? "Having won the Koeberg maintenance contract for the next five years, we are currently looking forward to the Steam Generator Replacement project at Koeberg, which is expected to start in February 2021. We expect to be involved in repairing and replacing piping systems and components such as valves that haven't been opened in 40 years, an exciting first-of-a-kind project for us in Africa.

"New Age is still an expanding organisation and we are looking forward to becoming the MEIP contractor of choice in the coming years. This is our goal. For those interested in delivering a quality service, New Age Engineering Solutions in conjunction with the CG Tech is ready to deliver," Zinyana concludes. 🔲