



JOHN THOMPSON

A GLOBAL LEADER IN ENERGY AND ENVIRONMENTAL SOLUTIONS
THROUGH VALUE ENGINEERING AND INNOVATION



ACTOM

Introduction

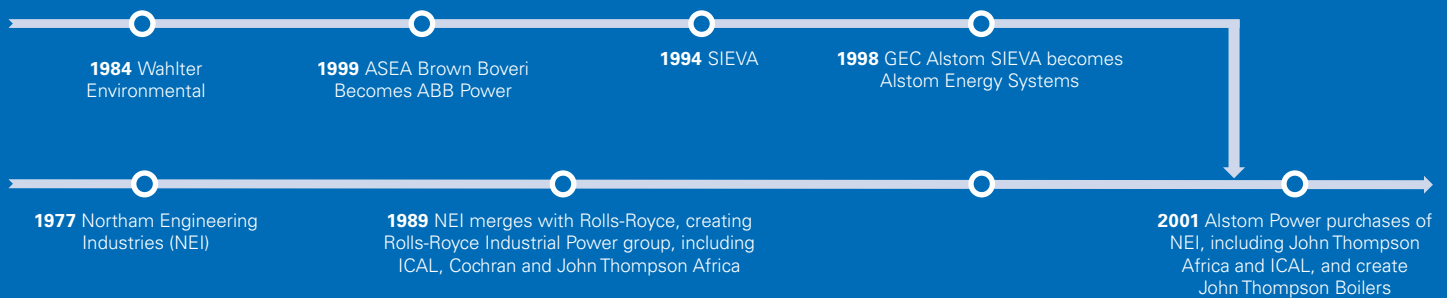
With an engineering history dating back to 1824 and experience gained through cooperation agreements with international organisations such as Combustion Engineering (CE), Rolls-Royce, ALSTOM, Wahlco, Hamon and others, John Thompson has built up a technology base that makes them leaders in this industry.

Through the agreements with CE, Internal Combustion (ICAL) was responsible for the construction of Kendal Power Station. As part of Stein Industry, ACTOM was responsible for Tutuka and Majuba milling plant. As part of SIEVA, ACTOM was responsible for the construction of Matimba milling plant. As part of the Walther, we

were involved in the Electrostatic precipitators at Sasol. As part of the ASEA Brown Boveri, we were involved in the Flakt ESP installations at SAPPI.

Today, John Thompson is based in South Africa and focusses on the design, manufacture, construction and maintenance of

Nuclear, industrial and utility boiler plants, including boiler auxiliaries. In collaboration with technology partners, we also provide products and services for environmental solutions, such as electrostatic precipitators, fabric filter plants and flue gas desulphurisation plants.



Services

John Thompson offers a wide range of services related to industrial and utility boiler, and environmental solutions. These services include:

- Manufacture and construction of boiler pressure parts, piping, burners and structural steel
- Welding services within a Nuclear environment
- Technical training of operating and maintenance staff
- Maintenance of boiler pressure parts, high pressure piping and related ancillaries
- Maintenance services for ancillary and auxiliary equipment such as coal mills, ducting, bunkers, dampers, submerged scraper conveyors and PF piping and burners
- Complete refurbishment of electrostatic precipitators.
- Retrofitting electrostatic precipitators with fabric filter plants
- Steel Fabrication Facilities for the manufacture of steel components, inclusive of pressure parts, milling equipment and transformer tanks
- Equipment plant hire for the power generation industry



Products

In industry, watertube boilers are used in various applications, utilising a wide variety of fuels. John Thompson designs, manufactures and constructs boilers for industries such as paper and pulp, sugar, petrochemical and power generation. These boilers can be sized and designed to suit the needs of the customer.

The impact of combustion on the environment within these boilers has necessitated the development of technologies that reduce emissions. We are proud to be able to assist our clients to meet minimum emission standards as set

out by their Atmospheric Emission Licenses.

We design, manufacture and construct a wide range of fabric filter plants which are able to reduce emissions to below 40mg/Nm³. With technology partners, we also provide other environmental solutions such as electrostatic precipitators and flue gas desulphurisation plants for a wide range of sizes.

John Thompson has inhouse and state-of-the-art combustion and boiler technology as well as an experienced team of design

engineers to design and customise an industrial watertube boiler for power generation, suitable for a wide range of renewable fibrous biomass fuels, as well as coal, gas and oil.

John Thompson can supply industrial watertube boilers to generate steam at pressures ranging from 20 bar

up to 110 bar at superheated steam temperatures up to 540 °C to suit the particular turbine requirements for power islands ranging from 5 MWe up to 100 MWe.

2004 Alstom South Africa acquires 90% of its shares from Alstom and become a South African owned company with 50% BEE ownership

2009 Alstom Electrical Industries (Pty) Ltd is rebranded to become ACTOM (Pty)Ltd, of which John Thompson is a division

2020 John Thompson develops a Nuclear Safety Culture for work in Nuclear industry

2005 Signed Co-operation agreement with WAHLCO

2018 Technology agreement is signed with Hamon

Technical Capabilities

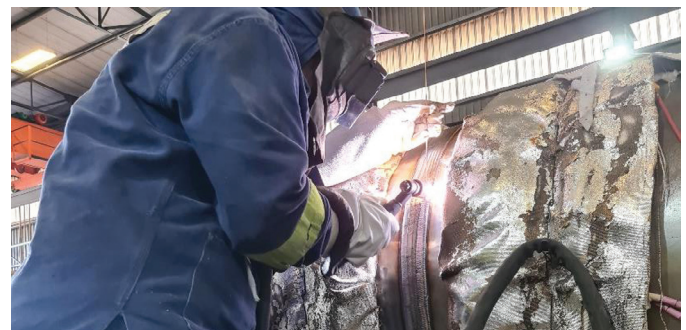
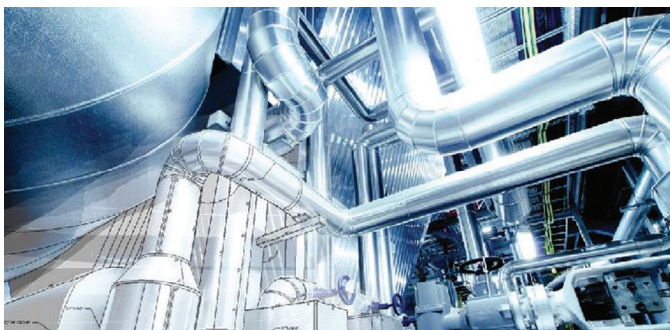
- Engineering of complete boilers, including process design, pressure part and structural design, computational fluid dynamic modelling, finite element analysis, piping flexibility analysis, equipment specification and complete bill of material.
- Analysis of boiler pressure part failures and metallurgical

inspection, including root cause analysis, are also part of our engineering capabilities.

- Engineering capabilities in the design of emission control plants
- Development of Welding Procedure Qualification Records (WPQR) and Welding Procedure Specifications (WPS) for a wide range of steels

and welding methods, including procedures for repairs of damaged components.

We have extensive welding experience on carbon steels and chrome molybdenum vanadium alloys on boiler and steam turbine plants.



John Thompson a division of ACTOM (Pty) Ltd

CapeTown, Bellville Office:

+27 (0) 21 959 8400

Johannesburg, Isando Office:

+27 (0) 11 392 0900

Durban, Bayhead Office:

+27 (0) 31 408 9700

info@johnthompson.co.za

www.johnthompson.co.za



References

- Boiler pressure part maintenance on seven large utility plants
- High pressure piping construction and maintenance on Nuclear Power plants, large utility and industrial plants
- Mill maintenance on six large utility plants, including vertical spindle and tube mills
- 16 new industrial watertube boilers installed over the last 25 years ranging in capacity from 80 t/h up to 180 t/h at various superheated steam conditions
- More than 300 installed water tube boilers in the industry
- Retrofitting of pneumatic fuel spreaders to accommodate combustion of either or both fibrous biomass fuels and coal
- Installation of moving (continuous ash discharge) grates on existing boilers
- Boiler capacity uprates
- Retrofitting of controlled superheaters
- CFD expertise to optimise combustion and heat transfer while mitigating erosion in boilers
- Efficiency improvement of existing boilers by modifications to heat recovery towers
- Combustion enhancement by installing advanced over-fire air systems
- Complete refurbishment of de-commissioned boilers
- Optimising of PLC / DCS based boiler automation
- Retrofitting of the existing ESP's into fabric filter plants on 3 x 350 MW and 6 x 200 MW utility plant
- Complete refurbishing of ESP internals on 2 x 600 MW utility plant
- Replacement of two ESPs existing internals on a paper mill
- Manufacture and export of more than 600 package boilers to Indonesia

Certifications

- BBBEE – Level 1 contractor
- ISO 3834: IIW Manufacturer Certification Scheme
- ISO 9001: 2015
- ISO 14001: 2015
- BSOHSAS 18001
- Lloyd's certificate of manufacture
- Fully comply to OHS Act and other safety requirements
- CIDB 9ME Qualification
- 3 Flames Member of SAGA
- Nuclear Safety Culture in compliance to RD0034 Level 1