

The E.ON Castleford facility is a stand alone Combined Cycle Gas Turbine (CCGT) Power Station supplying electricity to the National Grid and now relies on a High Pressure Clayton Steam System every time it start-up.

As a supplier to the National Grid it is advantageous for E.ON to have the capability of being able to shut down the power station and start-up up as required for flexible operations in response to market conditions.

To achieve this E.ON needed a separate 30 barg high pressure steam supply that could be made available in an instant to feed the glands on the steam turbine - long before the main Waste Heat Recovery Boiler became available.

This instant steam would allow vacuum conditions to be established on the steam condenser and significantly reduce the time to synchronisation of the gas and steam turbines.

E.ON's strict specifications for this application required a steam boiler that would produce a large amount of high pressure steam but which was compact in size to fit within the



existing process area.

In addition, the steam boiler to be selected had to be extremely reliable since it would have to be available as, and when, it was needed as short notice.

After extensive research in 2005 E.ON finally selected the Clayton Steam Generator System which met the specification in full and is of a proven design.

The main features that make it ideal for this application are small size, rapid start capability from a completely cold condition and safety in operation. In addition the Clayton Steam Generator is automatic and it can be started and stopped remotely.

The complete Clayton Steam System was supplied as a modular plant and positioned



on the existing concrete base. A weatherproof enclosure was then built around the equipment and the system was integrated into the existing process.

The Clayton Steam System has been extremely reliable and low in maintenance. The operational history has been excellent and the system can be called upon to run daily weekly or on demand whenever required.

The installation is a credit to Clayton's innovative approach to technology and reliable engineering.