

Trent projects in  
power generation

Seal Sands, England



## Fact sheet

### Project Description

This natural gas fired 50MW power station project at Seal Sands on Teesside in the United Kingdom is the world's first application of the Industrial Trent gas turbine operating in simple cycle duty. Operated by Viking Power the set has been built near a nature reserve



on land reclaimed from the Tees in the late 1940s and offers an overall plant efficiency of over 40% at 15 degrees Centigrade.

As with four other Trent projects in the United Kingdom, in the Midlands and the South West, the power station has been constructed under a Rolls-Royce turnkey contract. Normal utilisation of the

plant is expected to be between 5,000 and 7,000 hours per annum and the plant is designed to meet the statutory minimum emissions legislation with only 60 mg/m<sup>3</sup> NO<sub>x</sub> and 100 mg/m<sup>3</sup> of CO.

Northern Electric will supply the natural gas for the station and distribute the electricity generated through its own distribution network, thereby eliminating the transmission charges. This allows a greater flexibility in the management of gas and electricity supplies to the various industries in and around Seal Sands.

### Simple cycle mid merit plant

Rolls-Royce pioneered the use of aeroderived gas turbines for electricity power generation duties in the late 1950s. Since then the power generation industry has totally endorsed their use worldwide.

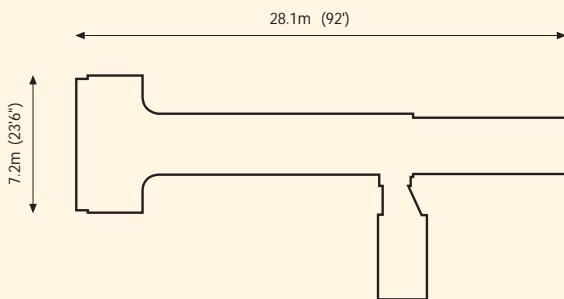
A mid merit plant requires a high degree of flexibility as it will be generating during the daily periods when prices from the Electricity Pool\* are higher than average. This type of plant has to be able to



provide the operator with complete confidence that the unit will start as and when required and take up load rapidly. The industrial Trent, the latest in the RB211 family of engines that have been generating electricity since 1974, ideally fulfils this role.

\*The Electricity Pool, the United Kingdom's trading arrangement, by which public electricity suppliers and large industrial users purchase from the generators dictates which generating stations are called upon to satisfy fluctuating demand.

### Trent package dimensions - simple cycle



The main packages of the Trent set are installed in line, with the control and accessories packages and the ancillary systems equipment arranged to suit the customers' requirements.

The depth of concrete foundations may vary slightly to accommodate local conditions, at Seal Sands it is 1.5m.



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