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## Saltend Cogeneration Plant, UK

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**Client:** Saltend Cogeneration Company Ltd

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Saltend Cogeneration plant is a 1200 megawatt (MW) power station commissioned in 2000 and located on the Northern shore of the Humber estuary. The plant provides power to the National Grid by means of three single shaft, combined cycle, natural gas and steam turbine generator modules.

Each turbine generator module is provided with ten mechanical draft cooling cells. The cooling cells are arranged in two 247 metre long timber construction cooling towers each consisting of 15 cells. Each cell is provided with a GRP stack, GRP axial fan, spiral bevel helical fan gearbox and a 175kW rated fan motor located at fan deck level.

The cooling towers circulate salt water taken from the Humber Estuary at a rate of 48,090m<sup>3</sup>/hr and at a water temperature range of 17.1<sup>o</sup> to 23.1<sup>o</sup> Celcius. The salt water is also chlorinated with Sodium Hypochloride as an effective biocide.

Incendia Consulting acted as the clients fire engineering consultants for the cooling tower fire protection replacement project. The project involved the removal of the existing fire protection system due to major corrosion and replacement with a new waterspray fire protection system.

Following a risk assessment carried out on the cooling towers which reduced the level of fire protection required, Incendia Consulting prepared the tender documentation for the project. The tender documentation consisted of technical performance and preliminaries specifications supported with design schemes.

Due to the severe corrosion of the existing fire protection system and the aggressive environment within and around the cooling towers a new approach to the equipment location, piping routes and materials was adopted.

A major element in the preparation of the tender documents was the correct selection of corrosion resistant materials to ensure the systems minimum service life of 35 years.