

# Case Study

## The Power Transmission and Distribution Industry

Helping Scottish and Southern Energy meet the nation's future power needs



**Location:**  
Millbrook to  
Southampton

**Client:**  
Scottish and Southern  
Energy

**Contract:**  
Design and construction

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With over 80 years' experience, Babcock is uniquely placed to provide a complete range of management solutions and delivery services from a single source. Our dedicated teams of managers, designers, engineers, foremen and lineworkers consistently work together to oversee multi-million pound network infrastructure projects, ensuring they are delivered on time, and to budget. And that is why Britain's major electricity companies are increasingly turning to Babcock.

During 2009, Babcock proved its ability to develop creative solutions for its Client, Scottish and Southern Energy. The project required a new terminal tower to be introduced to the network, adjacent to an extremely busy dual carriageway, which was complicated by the prohibition of road closure and the use of scaffolding. Babcock therefore proposed a new scope of works which eliminated the need to re-string across the dual carriageway, which was accepted by the Client.

Innovative design solutions were implemented to facilitate the control of the stringing procedure and, more specifically, expert manipulation of the balance of conductor sags and tensions in a 'short span' situation.

Major design issues that were overcome included, but were not limited to, re-conductoring and installing downleads to Sealing End Platforms (SEP) in close proximity to a live circuit and design and placement of a complex earthing system. This line is the only high voltage route into Southampton, therefore all works had to be carried out under single circuit outage conditions.

The new tower position relative to one circuit of the existing route enforced stringent planning of the works to enable the co-ordination of electrical re-connection. The construction was based on a sequential part erection of the new build on substantial piled foundations and, further, a carefully orchestrated completion sequence. Replacement

of members in the existing penultimate tower, damaged by dockland traffic, was carried out to a satisfactory completion.

### Summary of Core Activities:

- Removal of span
- Dismantle tower
- Removal of foundations
- Install piled foundations for a new tower, including foundations for the SEP ladders
- Supply and erect new tower complete with SEP's
- Supply and install new span, including downleads



Main image: Second stage build next to live line

Above: New terminal tower