



# Case study

## Acton to Willesden electrification

### THE CHALLENGE

The Acton to Willesden Electrification Project was identified as an opportunity to provide an electrified link between the Great Western Mainline (GWML) and West Coast Mainline (WCML) in West London. The electrification of the link would allow electric only locomotives, widely considered to be superior to diesel locomotives, to traverse between the two main lines, reducing journey times for this train type. The reduced journey times would lead to an increase in rail freight along the route, and an associated increase in revenues for Network Rail.

The project consisted of the electrification of ~5km of existing track through Acton Wells Junction to link the GWML and WCML. It included the provision of new overhead line equipment and motor operated switches, together with assessment of/modifications to the power supply, SCADA system, telecoms, signals and distance protection. Of particular challenge were the interfaces, which included seven physical interfaces with three different routes.

### THE SOLUTION

Frazer-Nash Consultancy was tasked with providing safety support to the Network Rail Project Team by carrying out the design of the electrification of the link. The major tasks performed by Frazer-Nash included:

- Production of a safety plan detailing the methodologies by which the project intended to ensure that implementation of the project was sufficiently safe
- Production of a project authorisation strategy, detailing how the project intended to demonstrate its compliance with the Interoperability Regulations and gain authorisation to proceed
- Production of a system definition to describe and bound the system under consideration during the safety assessments
- Facilitation of a hazard identification workshop using a structured approach to identify all reasonably foreseeable hazards
- Production and upkeep of a hazard record.
- Identification of safety requirements using the EU Common Safety Method for Risk Evaluation and Assessment (CSM-REA) risk acceptance principles.
- Compiling of a safety justification report summarising the work undertaken and detailing the future work required\* to demonstrate the project is sufficiently safe.

*\*The continuation Acton-Willesden project was postponed as part of the Hendy Review.*

All above work was carried out in compliance with the CSM-REA.

### THE BENEFITS

Frazer-Nash was able to work flexibly to provide significant added value to the project. Our extensive experience with the CSM-REA allowed us to produce documents in line with Network Rail guidance and gain the approval of the assessment body. Frazer-Nash also sought to provide value for money through intelligent working, such as the combination of the safety plan and project authorisation strategy into a single document.

#### Client

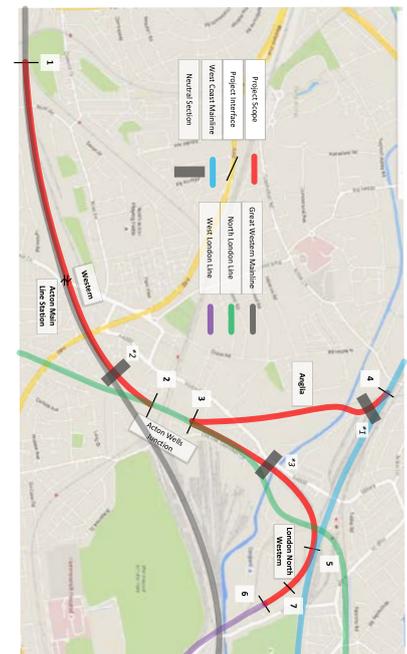
Network Rail

#### Business need

To increase freight transport volumes (and thus Network Rail revenue) through a reduction of journey times between the GWML and WCML.

#### Why Frazer-Nash?

Frazer-Nash Consultancy has a strong background in rail electrification safety, particularly in the area of compliance with the EU Common Safety Method for Risk Evaluation and Assessment.



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