

Network Innovation Allowance Progress Report

Notes on Completion: Please refer to the appropriate NIA Governance Document to assist in the completion of this form.

Network Licensees must publish the required Project Progress information on the Smarter Networks Portal by 31st July 2014 and each year thereafter. The Network Licensee(s) must publish Project Progress information for each NIA Project that has developed new learning in the preceding relevant year.

Project Progress

Project Title

Alternative Tower Construction

Project Reference

NIA_SHET_0003

Project Licensee(s)

Scottish Hydro Electric Transmission

Project Start Date

Feb 2010

Project Duration

5 Years

Nominated Project Contact(s)

Heather Bain

Scope

To investigate the use of a modified SBB Emergency Restoration System (ERS) as a Lightweight Tower Crane (LTC) in the trial construction and dismantlement of transmission towers in SHE Transmission's license area to establish if it is technically feasible, economical, minimises environmental impact and mitigates safety issues inherent in existing construction methods.

Objective(s)

To use a modified SBB ERS as an LTC in the trial construction and dismantlement of an appropriate range of towers (may include 132kV, 275kV and/or 400kV) to establish if the method can achieve:

- Reduction of construction time and costs
- Reduction of environmental impact by reducing need for temporary access roads
- Mitigation of safety issues of concern in tower construction that uses Derricks

Success Criteria

- 1 Completion of trials using a modified SBB ERS as an LTC on an appropriate range of towers in SHE Transmission's licence area, to provide sufficient data for evaluation of the method's viability
- 1 Establishment of the method's viability to reduce costs, construction time, environmental impact and safety hazards in Derricks

Performance Compared to the Original Project Aims, Objectives and Success Criteria

Objective: To use a modified SBB Emergency Restoration System (ERS) as a Lightweight Tower Crane (LTC) in the trial construction and dismantlement of an appropriate range of towers (may include 132kV, 275kV and/or 400kV) to establish if the method can achieve:

- 1 **Reduction of construction time and costs**

1 Reduction of environmental impact by reducing need for temporary access roads

Mitigation of safety issues of concern in tower construction that uses Derricks

The initial stage of this project was the procurement of the Emergency Restoration System (ERS) prototype manufactured by Acier Profile SBB in Canada. To enable the system to be adapted to working as a light tower crane, it was necessary to make some modifications based on assessment of SHE Transmission's requirements and preliminary testing by GB parties with expertise in tower construction. The initial modifications identified after the ERS system was delivered were completed successfully by the manufacturer.

The next stage involved a detailed independent mechanical assessment of the modified ERS to ensure that it would meet all the statutory provisions and accreditation prior to embarking on trials across an appropriate range of towers on SHE Transmission's network area. This mechanical assessment has identified a limitation which is being addressed prior to deployment for field trials.

Required Modifications to the Planned Approach During the Course of the Project

No modifications required as of 31 March 2014.

Lessons Learnt for Future Projects

So far, there has already been learning acquired by GB stakeholders on how to deploy a basic ERS after training was provided by the manufacturer of the system. Although this project focuses on the modified ERS to work as a light tower crane, the lessons learnt about deployment of the ERS system could be of significance in providing some knowledge about an ERS' basic application in contingency planning. Such knowledge could be useful to any network operators in GB faced with network disturbances on tower lines.

The training and familiarisation activities already undertaken on the ERS technology have demonstrated that ERS technology is deployable within shorter time scales and its components can easily be transported to site.