2018-22
POWERLINK QUEENSLAND REVENUE PROPOSAL

Project Pack - PUBLIC

CP.02304
Clare South - Strathmore - Collinsville Transmission Line Refit

Delivering better value

ID&TS - Reset 2017/18-2021/22 Project Proposal for CP.02304 BS1215 Clare South – Strathmore – Collinsville Transmission Line Refit

Document Approval		
	Name	Position
Prepared by		Project Manager
Reviewed by		Manager Projects
Approved by		Group Manager Infrastructure Delivery

Contents

1. Executive Summary

Built sections 1215 and 1260 on Clare South – Strathmore – Collinsville North 132kV double circuit transmission line feeders F7208/F7128/F7127 total 104 km in length and were constructed in 1967. Built Section 1215 consists of 7 steel tension towers and 291 steel suspension towers. Built Section 1260 consists of 2 steel tension towers and 16 steel suspension towers. The transmission line is an essential component of the transmission network supplying the townships of Clare, Ayr and Home Hill in Far North Queensland and has an electrical capacity which meets long term requirements. The transmission line has deteriorated due to corrosion and requires major refurbishment or replacement to ensure its long term safety and reliability.

The objective of this project is to extend the reliable life of the transmission line by October 2021.

2. Project Definition

2.1 Project Scope

2.1.1 Transmission Line Works

Undertake transmission line refit works to attend to declining condition of built sections 1215 and 1260 Clare South – Strathmore – Collinsville North.

Surface preparation and painting of 316 towers as per current Powerlink standards:

- Containment of Materials Used – surface treatment of structures located near residential or environmentally sensitive areas may require the construction of scaffold and plastic sheeting to protect residences and capture water and residue.
- Review all tower leg / stub members and encapsulate where the concrete to steel interface is showing signs of corrosion.

- Replacement of 5% of all tower nuts and bolts as required.
- Replacement of 1% of steel members per tower as required.
- Replacement of:
    - Insulators.
    - Conductor hardware.
    - Vibration dampers.
    - Tower accessories including signs and anti-climbing barrier.
    - All step bolts.
- Minor drainage works and clearing of growth around tower foundations.
- Review of the electrical design to confirm electrical clearances and insulation levels.
- Review and documentation of the structural capacity of the structures.
- Tower earthing to be upgraded to the current standard

2.1.2 Substation works

N/A

2.2 Major Scope Assumptions

- Detailed site inspections were not performed for this estimate. Detailed site inspections will be required to allow a more accurate estimate to be prepared.
- It was assumed that 5% of tower legs would need to be encapsulated where the concrete to steel interface is showing signs of corrosion. A site inspection will be required to obtain an accurate number for tower legs requiring encapsulation.
- Single circuit outages will be available to allow this work to be performed.

2.3 Scope Exclusions

- Site inspections were not performed as part of this estimate.

3. Project Execution

3.1 Project Dependencies & Interactions

Project No.	Project Description	Planned Comm Date	Comment
Pre-requisite Projects			
Co-requisite Projects			
Other Related Projects			

3.2 Site Specific Issues

3.3 Project Delivery Strategy

It is expected that the project will be delivered using a Line Refit Panel Contractor under a Construct Only contract. The Maintenance Service Provider (MSP) could also be utilised to perform some of the work. Powerlink is expected to perform the design with the Line Refit Panel contractor and MSP performing the site works. The maintenance service provider will be required to perform switching.

Project Delivery Strategy Matrix		
Design	Transmission Line Design	Powerlink
Construction	Transmission Line Construction	Line Refit Panel Contractor/ MSP

3.4 Proposed Sequence of Works

3.4.1 Project Schedule

The latest date for the commissioning of the new assets included in this scope and the decommissioning and removal of redundant assets is October 2021.

High Level Schedule

- Project Approval : April 2019
- Design Complete : August 2019
- Contract awarded : October 2019
- Refit Construction Work : April 2020 – Sept 2021
- Final decommissioning/Tidy up : October 2021
- Project Completion : 31st October 2021

3.4.2 Project Staging

Major project stages of the project are considered to be:

Stage	Description/Tasks
1	MSP to perform switching/isolations Feeder 7128 Section 1 (remove/modify bridges to allow King Creek to remain in service via Feeder 7128 Section 2)
2	Refit Contractor Site Work on Fdr 7128/1.
3	MSP Site Work
4	MSP to perform switching/isolations Section 1 & Section 2 Feeder 7128. Modify bridges to allow King Creek to remain in service. Return Section 1 to service feeding King Creek via Tee and complete isolations for Section 2.
5	Refit Contractor Site Work on Fdr 7128/2
6	MSP Site Work
7	MSP to perform reverse switching, install bridges at King Creek Tee, and energise Feeder 7128.
8	MSP to perform switching/isolations Feeder 7127
9	Refit Contractor Site Work on Fdr 7127.
10	MSP Site Work
11	MSP to perform reverse switching and energise Feeder 7127.
12	MSP to perform switching/isolations Feeder 7208
13	Refit Contractor Site Work on Fdr 7208.
14	MSP Site Work
15	MSP to perform reverse switching and energise Feeder 7208
NOTE:	The final schedule is likely to have multiple outages following the above general sequence. The sequence will need to be determined as part of the detailed outage plan preparation.

3.4.3 Network Impacts and Outage Planning

Preliminary outage advice from Network Operations has indicated that only single circuit outages will be available. T177 King Creek will also need to remain in service via the Tee.

3.5 Project Health & Safety

The implications of relevant workplace health & safety legislation in delivering the proposed solution have been considered in preparing this estimate. In particular, this estimate includes an allowance for typical safety related activities required in the delivery phase of the project.

3.6 Project Environmental Management

A site specific environmental management plan will need to be developed for the delivery of this project. More detailed costs for environmental management can be estimated following the completion of this document.

4. Project Risk Management

Some allowances have been allowed in the estimate. Please see estimate for details.
Please refer to the assumptions and exclusion as these items have implications for the overall project risk.

5. Project Estimate

5.1 Estimate Summary

Quote Summary :CP.02304 - BS1215 Clare South - Strathmore - Collinsville Transmission Line Refit

The quotation at current cost levels and escalated for completion by 31 October 2021 at 4.1% per year, for CP.02304 - BS1215 Clare South - Strathmore -Collinsville Transmission Line Refit is as follows;

CP.02304 Quotation in $,000 AUD	Base Cost Levels	Escalated to Compln.	Comment (Costs @ Base Cost Levels)
Transm. Line #1 -Clare South - Strathmore - Collinsville	[redacted]		**BS1215 & BS1260 Clair South - Strathmore - Collinsville 132kV line refit (316 towers - structure bolt/member replacement,insulators, hardware, dampers and painting)**
			Project Management
			Site Establishment and Running costs
			Prepare condition assessment report for Life Extension
			Procurement
			Accommodation and Messing
			Bolt Replacement
			Other replacement Items(step bolts, fall arrest, ACD and Signs)
			Structural replacement (Primary and Secondary member replacement)
			Surface preparation and Painting
			Foundation and Stub Repair
			Contractor Establishment for life extension
			Access Track Upgrade
			Replace Insulators on existing structure
			Switching Costs
			Line Specific allowances - Wet weather delays
Project Concept/Investment & Planning, Statutory Costs and O&FS -Network Ops			Overheads
TOTAL QUOTE (EXCL RISKS)	**44,759**	**55,051**	
Risk Estimate	**3,500**	**3,500**	
TOTAL QUOTE (INCL RISKS)	**48,259**	**58,551**	

5.2 Asset Disposal Table

No assets have been identified for disposal as a result of this project.

6. References

Document name and hyperlink (as entered into Objective)	Version	Date
Project Scope Report	June	2015
Estimate Detail	Aug	2015