

NEED/OPPORTUNITY STATEMENT (NOS)



Transmission Line Steel Tower Asbestos Paint

NOS- 000000001164 revision 2.0

Ellipse project no(s): P0005050

TRIM file: 2015/1478

Project reason: Capability – Improved Asset Management

Project category: Prescribed – Network-Other

Approvals

Author	Edward Luk	Transmission Lines and Cables Analyst
Endorsed	Steve Stavropoulos	Transmission Lines and Cables Asset Manager
Approved	Lance Wee	Manager Asset Strategy
Date submitted for approval	25 November 2016	

Change history

Revision	Date	Amendment
0	1 December 2015	Initial issue
1	18 August 2016	Update to 2016/17 dollars
2	25 November 2016	Update to format

1 Background

Asbestos containing paint has been identified on steel towers across TransGrid transmission lines. The paint is generally limited to the lower part of the tower legs, however there are a few towers identified as having been completely painted with the asbestos paint. Tension and suspension towers are affected.

Testing has been undertaken on paint samples on a number of suspected transmission lines, namely Transmission Lines 8, 11, 16, 23, 27, 28 and 959/92Z. Following the initial testing, further ground inspections were undertaken and suspect paint was found on Transmission Lines 76/77 and 39. The ground inspections identified a varied paint condition across all towers, with most towers reported in an average or poor condition. A proportion of paint samples analysed were found to contain non-friable asbestos, on the basis that the paint 'material' is not in a powder form and/or cannot be crumbled, pulverised or reduced to a powder by hand pressure when dry. As a result, GHD has assessed that in its current condition and in the short term, it presents a 'low' health risk. However, as the condition of the asbestos paint deteriorates with time (de-bonding from the steel and flaking), the safety risk it presents to TransGrid staff and the public will increase. The paint is not considered to be lead based paint.

2 Need/opportunity

Paint containing asbestos has been identified on the following transmission lines:

Table 1 – Transmission Lines with Asbestos Paint

Line	Towers on Line	Towers Sampled	Towers Positive
8 (Marulan – Dapto)	175	165	42
11 (Dapto – Sydney South)	154	110	25
16 (Marulan – Avon)	160	140	63
23 (Vales Point – Munmorah)	25	8	1*
27 (Sydney North – Sydney East)	58	57	57
28 (Sydney North – Sydney East)	55	49	45
76/77 (Wallerawang – Sydney South)	410	40	40
959/92Z (Sydney North – Sydney East)	58	45	49

* On Transmission Line 23, it initially thought that the asbestos paint has been removed. However, it was found that the asbestos paint was only painted over and encapsulated and therefore, the asbestos paint remains on the tower.

The above towers identified to date as having asbestos paint have been added to the [asbestos register](#). It is not apparent as to why this asbestos containing paint was applied to the structures. It is expected that the paint contains approximately 5% asbestos.

Analysis was undertaken on the towers identified with asbestos paint to determine any common connection between their age, spatial locations, types of paint and historical uses for the paint. To date, little correlation has been identified, and as such, no effective method in predicting other transmission lines to target for further sampling has been found. Hence, it is expected that additional structures and transmission lines across the TransGrid network not yet sampled will also be found to be coated with the asbestos containing paint.

It is estimated that the total number of towers with asbestos paint which will require sampling and remediation is 3,682 across the network. The number is based on the extrapolation of the percentages of asbestos paint found

on existing lines and suspect paint found on ground inspections across every transmission line constructed prior to 1980 (1980 was selected as the most appropriate cut-off as the likelihood of asbestos containing paint still being used beyond this time would be low).

The associated risk cost is \$7.43m per annum, attributable to exposure of persons to asbestos fibres.

TransGrid's asbestos management plan states that for asbestos classified as having a 'low' risk rating, "Controls should be implemented as soon as possible to repair or remove the deteriorated material". Property owners have been informed of the asbestos paint on the towers and warning signage has been installed on the towers as an interim control measure in consultation with PS&S/Stakeholder Engagement and FS/Health, Safety & Environment.

Transmission line maintenance work practices will be modified to allow work on unpainted areas of the affected structures, however routine and corrective maintenance cannot be performed on the portion of the structures coated in the paint without removal of the paint.

Addressing the treatment of the asbestos containing paint upholds the expenditure objectives in the NER Clause 6A.6.7(a), in particular to maintain the reliability, safety and security of the transmission system through the supply of prescribed transmission services.

3 Related needs/opportunities

The transmission lines impacted may require tower life extension in the future which involves abrasive blasting of the towers prior to application of a zinc rich paint to effectively restore lost galvanising. The removal of asbestos on the towers must occur prior to this work; however there may be an advantage in combining the work packages.

4 Recommendation

It is recommended that options be considered to address the identified need/opportunity.

Attachment 1 – Risk costs summary

Summary of results is attached below. Refer to supporting document in PDGS for full risk assessment.

Current Option Assessment - Risk Summary

Project Name: Transmission Line Tower Asbestos Paint

Option Name: 1164 - Base Case

Option Assessment Name: 1164 - Option 1 - Assessment 1

Rev Reset Period: Next (2018-23)



Major Component	No.	Minor Component	Sel. Hazardous Event	LoC x CoF (\$M)	Failure Mechanism	NoxLoC xCoF (\$M)	PoF (Yr 1)	Total Risk (\$M)	Risk (\$M) (Rel)	Risk (\$M) (Op)	Risk (\$M) (Fin)	Risk (\$M) (Peo)	Risk (\$M) (Env)	Risk (\$M) (Rep)
TL - Asbestos Towers	3682	Roof, Floor, Walls & Fit out	Exposure to Dangerous Substances (TL - Asbestos Towers)	\$11.90	Occupation	\$43,826.85	0.02%	\$7.43				\$7.34		\$0.09
								\$7.43				\$7.34		\$0.09
								\$7.43				\$7.34		\$0.09

Total VCR Risk:

Total ENS Risk:

Number of Components

The number of components (3682) used in the Risk costs summary model are as per the number of forecast structures coated with asbestos paint.

Probability of Failure

As per the Risk costs summary model.

Consequence of Failure

As per the Risk costs summary model.