NEED/OPPORTUNITY STATEMENT (NOS)

Substation Security Zone (SSZ) Condition

NOS- 000000001366 revision 2.0

Ellipse project no.: P0008000
TRIM file: [TRIM No]

Project reason: Capability - Asset Replacement for end of life condition
Project category: Prescribed - Asset Renewal Strategies

Approvals

Author	Mark Jones	Secondary Systems and Communications Asset Manager
Endorsed	Mark Jones	Secondary Systems and Communications Asset Manager
Approved	Lance Wee	M/Asset Strategy
Date submitted for approval	17 October 2016	

Change history

Revision	Date	Amendment
0	27 June 2016	Initial issue
1	17 October 2016	Update to 2016/17 dollars
2	17 November 2016	Update to format

1. Background

TransGrid is able to remotely interrogate, configure and modify Ethernet enabled devices located in substations via the Substation Security Zone (SSZ).

The SSZ is an IP based network segregated from other networks such as the Corporate Data Network and the SCADA network by access restrictions, firewalls and physical separation. This is required as devices attached to the SSZ are capable of directly affecting the high voltage network without the failsafe guards provided by the SCADA system or local HMI. Access is restricted to skilled operators as to limit the potential of unintended operation or configuration changes to devices on the Network.

Due to the sensitive nature of the network, it is important that its integrity is maintained to prevent unauthorised access. This is best achieved by routinely updating the network to provide good industry practice cybersecurity and ensure compatibility with modern substation based devices and the underlying communications network.

2. Need/opportunity

The current iteration of the SSZ was established between 2013 and 2015. Since then, plans have been implemented to increase the capability and capacity of the underlying communications network that the SSZ runs over. The opportunity exists to upgrade the SSZ infrastructure to take advantage of the additional capacity to the communications network and future proof the system for increased demand as use of online condition monitoring, client-server based applications and IEC61850 become more commonplace.

There is also a need to address:

- the condition of the redundant SSZ gateways;
- the condition of the routers and firewalls at all 99 sites;
- the condition of the physical security of SSZ gateways and cabinets at all 99 sites; and
- the condition of the security protocols on the SSZ network.

The risk cost associated with this need is $15.75m per annum. The most significant element of concern is the financial impact associated with a long-term outage of the SSZ due to hardware failure. This risk will be exacerbated by the projected obsolescence of the current system and TransGrid's inability to return the system to service efficiently. The risk costs are based on 2015/16 probabilities of failure and the Borg Scale methodology of assessing IT network and cyber security risk.

3. Related needs/opportunities

The following related needs should be considered when addressing this need:

- Need ID 1254 – SCADA-EMS NM4 Replacement
- Need ID 1365 – Telecommunications SDH Network Condition

4. Recommendation

It is recommended that options be considered to address the identified 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: Substation Security Zone (SSZ) Condition

Option Name: 1366 - Base Case

Option Assessment Name: 1366 - 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)
SSZ Network	1	Distribution	Out of Support (SSZ Network)	$414.93	Security Vulnerability	$414.93	0.05%	$0.21	$0.20		$0.00			$0.01
SSZ Network	100	Distribution	Service Failure (SSZ Network)	$3.03	Hardware Failure	$302.90	5.00%	$15.15	$0.00		$15.15			$0.00
SSZ Network	100	Distribution	Unapproved Change (SSZ Network)	$399.66	Software Failure	$39,966.18	0.00%	$0.40	$0.40		$0.00	$0.00	$0.00	$0.00
				$817.62		$40,684.01		$15.75	$0.60		$15.15	$0.00	$0.00	$0.01

Total VCR Risk: $0.60

Total ENS Risk: $0.00