

NEED/OPPORTUNITY STATEMENT (NOS)



Transformers - Reactors Expected Failure

NOS- 000000001708 revision 1.0

Ellipse project no(s):

TRIM file: [TRIM No]

Project reason: Capability - Asset Replacement for end of life condition

Project category: Prescribed - Asset Renewal Strategies

Approvals

Author	Tony Gray	Substation Asset Manager
Endorsed	Robert Li	Asset Strategist
	Azil Khan	Investment Analysis Manager
Approved	Tony Gray	Acting/Manager/Asset Planning
Date submitted for approval	5 January 2017	

Change history

Revision	Date	Amendment
0	27/10/2016	Original issue
1	5/1/2017	Improved Need description. Removed evaluation spreadsheet as included in OER.

1. Background

Failures of oil filled transformers and shunt reactors are expected to occur over the regulatory period and allowance is required to purchase replacement spares.

2. Need/opportunity

Across the fleet of oil filled transformers and reactors, failures are expected to occur over the 5 year regulatory period from 2018/19-2022/23. It will be necessary to replace spares following these failures.

Provision of transformer spares is crucial to the operation of the network to minimise impacts on the reliability of supply and to maintain licence conditions. Allowance is hence required to restore spares capability following a transformer failure.

Reactors are required to maintain correct system voltage profiles under all operating conditions and hence replacement is required in the event of a failure. Permanent loss of a reactor will result in an inability to maintain voltages at the levels required by the market operator in all cases.

Allowance is required for this expected expenditure.

3. Related needs/opportunities

Transformer/reactor replacements and refurbishments planned during the regulatory period will affect the likelihood of failure and the requirement to purchase an additional spare. This has been accounted for in the calculation by adjusting the failure rate based on the revised condition at the time of refurbishment or replacement.

Specific related Needs are:

- 1219 – Marulan No. 4 Transformer Replacement
- 548 – Sydney East No. 2 & 3 Transformer Replacement
- 276 – Forbes Transformer Replacements
- 1282 – Wellington No. 1 Reactor Replacement
- 1607 – Armidale No. 2 Reactor Replacement
- 1454 – Molong No. 1 Transformer Replacement
- 1354 – Transformer Refurbishment Program

4. Recommendation

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