NEED/OPPORTUNITY STATEMENT (NOS)

Substation Noise Non-Compliance Program

NOS- 000000001454 revision 1.0

Ellipse project no.: P0008473
TRIM file: [TRIM No]

Project reason: Compliance - Regulatory obligation
Project category: Prescribed - Security/Compliance

Approvals

Author	Suzanne Sheekey	Senior Environment Officer
Endorsed	Denise Lo	Environment Asset Strategy Team Leader
	Heather Wagland	Property & Environment Asset Manager
	Anthony Englund	Manager / Investment Strategy & Solutions
Approved	Lance Wee	Manager / Asset Strategy
Date submitted for approval	30 November 2016	

Change history

Revision	Date	Amendment
0	10 May 2016	Initial issue
1	30 November 2016	Update to format

1. Background

TransGrid has about 100 sites (substations and switching stations) that contain equipment with the potential to cause a noise nuisance. The potential for noise nuisance, or an unacceptable level of noise amenity, is associated with significant noise generating sources, typically capacitors, reactors and transformers. In NSW, noise nuisance (or pollution) is regulated through the Protection of the Environment Operations Act 1997. Guidelines for managing industrial noise are set out in the NSW Industrial Noise Policy, which the Environmental Protection Authority uses to set noise limits for new developments, and also existing developments - particularly when noise complaints are received.

The proximity of residential receivers correlates with reduced noise amenity, which leads to the potential for an elevated number of complaints. This can lead to negative media/stakeholder attention, and increases the risk that the relevant regulatory body will impose the implementation of noise mitigation controls and potentially issue a Noise Control Notice or a Prevention Notice. This can lead to unplanned capital expenditure, such as the replacement of transformer assets (approximately $7m) or installation of noise mitigation measures (such as walls at approximately $500k). In the event that TransGrid fails to comply with orders issued by the regulatory body, fines can be issued (the maximum being $1m plus $120k per day the offence continues).

TransGrid has no existing comprehensive data regarding current operational noise levels. Noise consultants have been engaged to undertake a desktop assessment to evaluate the risk of sites causing an existing (or potential future) unacceptable noise amenity level. For each site the risk assessment considered the presence of noise generating equipment, distance to the nearest residential receiver, desktop consideration of the existing background noise levels, presence of existing noise mitigation measures (such as noise or blast walls), plus additional factors related to future risks (such as residential encroachment).

2. Need/opportunity

The desktop risk assessment identified eight substation sites operated by TransGrid that are potentially causing noise exceedances at nearby receptors of greater than 2dBA above the acceptable noise levels. These sites are listed in Table 1.

Table 1 - Sites Identified as Having a High Risk of Exceeding Noise Objectives

Site	Distance to Nearest Receptor	Predicted Noise Exceedance	Risk of Existing Noise Exceedance
Canberra 330kV Substation	250m	+11dBA	High
Coffs Harbour 132kV Substation	107m	+6dBA	Moderate/High
Dapto 330kV Substation	226m	+14dBA	High
Griffith 132kV Substation	188m	+5dBA	Moderate/High
Molong 132kV Substation	380m	+14dBA	High
Muswellbrook 330kV Substation	417m	+12dBA	High
Orange 132kV Substation	87m	+16dBA	High
Wagga 132kV Substation	54m	+10dBA	High

These sites represent TransGrid's highest risk sites in regards to the potential for unacceptable noise amenity, which could lead to complaints and EPA non-compliance issues.

It is noted that further investigations are required to quantify the actual existing noise exceedance levels at all these sites, especially for sites that have had transformers replaced in recent years (such as Griffith, Molong and Orange substations). An assumption has been made that up to four of these sites will be identified as having actual existing noise nuisance issues that will require mitigation. On an assumption that mitigations would require installation of noise walls (rather than transformer replacement), the potential pre-investment risk value being held by the business for each site is $625k, with the total conservative risk being $2.5m.

3. Related needs/opportunities

There may be other projects planned for these sites (such as transformer replacements) that will mitigate the need to separately address the potential noise non-compliance issues. Confirmation should be sought that any planned works will adequately address the existing noise amenity issues.

Consideration should also be given to implementing mitigations that will be beneficial for mitigating the risk of future noise amenity issues due to likely residential encroachment. Of the sites listed in Table 1, Dapto was also identified has having a high risk of future noise amenity issues.

4. Recommendation

It is recommended that options be considered to address the actual unacceptable noise levels identified at each location.