



Memorandum

18 October 2016

To	Phil Knight		
Copy to	Nick Dazeley - PSC		
From	Phil Knight	Tel	(07) 3316 3571
Subject	Junee Prison Expansion - Power Supply Development and Site Lighting Strategy.	Job no.	41/30177

1 Existing Supply

The site is currently supplied by 2 x 750 KVA pad mounted substations that support the prison and a pole mounted substation that supports the existing prison farm out buildings.

The substations are supplied from an Essential 11kV feeder JUN3B7.

2 Site demand

The site demand is expected to increase from approximately of 800 kW to 1600 kW.

3 Proposed Supply Changes

The Essential Energy Design Information Pack (Essential Energy Project reference No: 111984) has been received and the following works have been detailed:

- Development of two new 1500 kVA substations to support the existing load and new additional load.
- Removal of the existing 2 x 750 kVA pad mounted substations.
- New underground HV cables to the new substations connected to feeder JUN3B7.
- Provision of a new ring feeder connection to Essential Energy Feeder JUN3B2.
- Relocation of the existing pole mounted substation that supports the prison farm out buildings to the proposed farm building's new location.
- Upgrading of conductors on a section of existing feeder JUN3B7 to support the additional load.

Included in the scope to support this new supply is the following additional electrical works:

- Development of a new site main switchboard.
- Provision of a new emergency generator and relocation of the existing emergency generator to a new dedicated generator room to support the whole complex.
- Associated distribution cables as required to reticulate power around the site.

4 Impact on Local Community

Essential Energy has not detailed any requirement for the works on their network excepting the feeders

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upgrade and works on the substations within the prison site. There will be some impacts during the design and construction of the HV works which will include the following:

- Traffic control on roads while existing feeder is surveyed.
- Isolation of feeder while the re-conducting/restringing works are carried out including traffic control on local roads.
- Establishment of easements over the new cable and feeder locations.

All of these impacts are typical for works on supply authority infrastructure.

See attached a site plan detailing the proposed scope of works on the prison site.

5 Site Lighting Strategy

5.1 Perimeter fence lighting

The site perimeter security will be fitted with pole mounted lighting that will provide sufficient lighting for the electronic security system to operate at their option performance. The CCTV system requires lighting level to a similar standard to the existing perimeter lighting system. This lighting will be designed to be low glare luminaires using luminaires that have no light above the horizontal to maintain a dark sky strategy.

5.2 Building Exterior lighting

Buildings will be fitted with exterior security lighting. This lighting will be designed using low wattage luminaires and be arranged to have limited upward component.

5.3 Open Area Lighting

There are a number of open activity spaces within the security fenced zones and these areas will be fitted with flood lighting columns to provide area lighting. These luminaires may have some illuminance above the horizontal, however, these luminaires will only be operational during prisoner night time activities and in the case of an emergency situation in the prison and thus should have little impact on the local community.

Regards



Phil Knight

Principal Electrical Engineer

Enclosed: Essential Energy site HV Scope Sketch Plan>