

UDCS Consulting Project Summary

The Company

UDCS Consulting provides

- survey and
- engineering consultancy

services to the

- electricity
- infrastructure
- mining
- commercial sectors

The primary works being undertaken are in reticulation, distribution and transmission of power, water and gas.

Our Clients

Domestic and foreign Utilities

Major construction companies

Government & Private asset owners

Services Offered

Engineering Survey

Electrical Distribution Design

Sub-transmission OH Design

Sub-transmission UG Design

Substation Design

Preparation of environmental

reviews

Developer initiated Design

Solar Power and Lighting Design

Road Lighting Design

HV Auditing (QLD ESO)

Contact Details

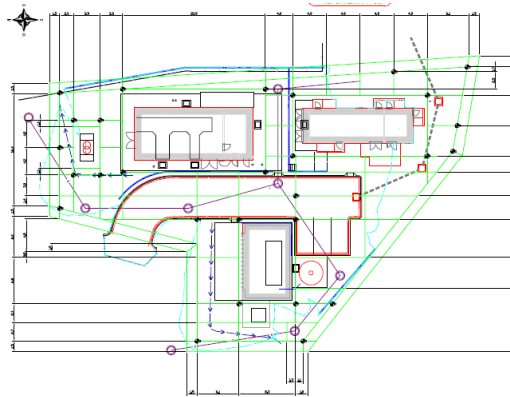
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33/11kV Substation Earthgrid Design Enoggera Barracks ISS-1



Project Scope

UDCS Consulting was engaged by the DoD via the construction contractor to review a proposed design and offer alternatives and improvements for one of two intake substations at the Enoggera Barracks in Brisbane. UDCS Consulting undertook field testing and detailed design of substation ISS-1.

The study included:

- The collection of detailed ground resistivity data at the site using a Fluke 1625 Geo Earth Ground Tester
- Development of a computer based soil and grid model using CymGrd™.
- Development of an amended design, enabling simplified construction practices.
- Computer based model were developed and reviewed for step and touch induced voltage conditions under the proposed conditions.

Key Staff

Test Technician: Stephen Edwards

Design Engineers: Kerry Prickett

Stephen Edwards

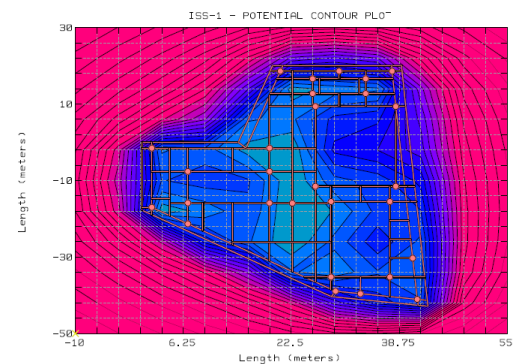
Design Method

Earth grids are designed on the basis of static operational design limits under fault conditions. In this case these limits were dictated by Energex and the construction program which required the partial installation of the grid and energisation of the 11kV switch room prior to the completion of the remaining portions of the 33/11kV substation.

The studies were conducted in-line with ENA publication EG-1:2006 "Substation Earthing Guide", AS/NZS 2067:2008 and IEEE Std 80 – 2000.

Project Achievements

- Reduction in installation cost
- Reduction in metal pipe hazard zone from 1.3km down to 320m.
- Reduction in telecommunications hazard zone from 120m down to 30m.



UDCS Consulting

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