Completed Projects

NORTON CONSULTANTS

H.V. POWER SUPPLY SYSTEMS SUBSTATION DESIGN & COMMISSIONING PROJECTS

☞ **JET TURBINE SERVICES – Tullamarine**

Design of 22 kV supply connection, ring main unit, cabling and substation. Procurement of equipment for installation May 2005.

☞ **BHP WHYALLA :**

Selection and recommendation of 6.6kV 3 MW drives associated with Pellet Plant de-dust system. Protection grading and acceptance of installation.

☞ **QENOS (formerly KEMCOR) :**

Assessment of 11kV motor for use in Zone 2 hazardous area, the motor being Ex'n' rated and subsequently modified to Ex'p'.

☞ **S.A. WATER :**

Upgrade of two pump stations involving lengthy negotiations and investigations regarding 66/3.3kV supplies with the power Supply Company to resolve step voltage changes on motor start and power factor correction.

☞ **ASTA COMPONENTS - 5MW DEMAND, 11kV SUPPLY :**

Report and recommendations re H.V. maintenance and the viability of retaining a second feeder from the grid.

Design and supervision of installation of 11kV ring main unit, cable relocations and power factor correction cubicle.

☞ **DOW CHEMICAL :**

Development of 11kV distribution system to provide additional substations for new process plant at the Altona facilities. Successive projects included detail design of substations, preparation of transformer specifications, development of a ring system with interlock ring main and earthing switches.

Calculation of fault sequences components for the complete system, setting and testing all protection relays to ensure discrimination was maintained with changes to the distribution system. Annual review of system loading and operational performance.

☞ GOLIATH PORTLAND CEMENT CO LIMITED :

Design, project management and commissioning of the 22kV distribution system from its original Maximum Demand (M.D.) of 6MW to its present M.D. of 20MW over a period of some 25 years, Electrical plant development required design and numerous new substations and the progressive conversion of outdoor switchyards to indoor distribution centre. Design, supervision and commissioning of 22kV and 6.6kV motor switchgear up to 4.3MW.

Review of system fault levels and upgrade of protection system to improve response times and stability.

Design of system load management scheme including auto power factor correction.

☞ ADI LIMITED, BENALLA :

Design and commissioning of 22kV distribution system comprising eight (8) substations at the new 1500hA property at Benalla, Victoria.

Design includes a combination of ring and radial distribution to provide the degree of supply reliability.

The project includes load management to maximise the benefits of M.D. tariff.

☞ ADI LIMITED, MULWALA :

Complete audit of the 22kV overhead reticulation system of the ADI Facility Mulwala, involving some 22 substation and several kilometres of overhead reticulation incorporating ring switches, section switches, and substation spurs.

The report of the audit included :-

- Recommendations to upgrade overhead switches for reliability of operation.
- Earthing and lighting protection application to several substations.
- Budgets, specifications and drawings pertaining to upgrades.
- Data base of all HV overhead equipment transformers and poles.
- Recommendations re routine inspections and maintenance.

☞ DUPONT AUSTRALIA :

Feasibility study into redevelopment of substation network and review of protection systems.

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☞ A.C.I. PILKINGTON :

Design of the initial 22kV distribution system including protection study.

Progressive development of the system to include additional substations to the present 6mW capacity.

☞ QENOS (formerly Altona Petrochemical) :

Supervision of main 11kV substation reconstruction after a major fire.

Protection study with recommendation for modifications to improve co-ordination and stability. Supervision of relay testing and documentation of maintenance procedures for both H.V. and M.V. systems.

☞ OTHER PROJECTS :

Design of H.V. switchgear installations ranging from ring main systems to circuit breaker and reclosure system, transformer specifications and H.V. cabling general arrangements for industrial clients including :-

Rheem Australia, Victoria
Coca-Cola Bottlers, Victoria
Weston Milling, Victoria & W.A.
Golden Poultry, Victoria
Ingham Bros., Victoria
Portland Harbour Trust, Victoria
Grain Elevator Board, Victoria
Polygold Industries, Victoria
Tullamarine Estates Pty Ltd, Victoria
Bunge BioProducts, Victoria
Bunge Ballarat, Victoria
Shell Company of Australia, Victoria, NSW, Qld & S.A.
B.P. Australia Limited, Victoria
Mobil Australia, Victoria

The Company has more than 30 years experience in the design of HV and LV distribution systems and motor applications in heavy industry ranging from Mining, Grain Handling, Cement Manufacture, Food Processing, Petrochemical, Fuel Storage and many other medium industrial processes.