Modular Substations

Modular prefabricated and commissioned switchrooms
- **Fire rated for ingress / egress**
- **Cyclonic windloadings**
- **Seismic**
- **Fire suppression systems**
- **DC supplies**
- **Control, Protection and monitoring systems**
- **Manufactured Off site , no inclement weather issues, no delays**

In today's fast track environment , projects are required to be delivered in extremely short lead times, with high risk exposure due to reduced design , manufacturing ,installation and commissioning schedules.
ABB as a leader in the electrical and instrumentation field has integrated and combined its product divisions into project group teams, where integrated systems including modular portable substations can be provided completely factory installation and pre commissioned.

The approach reduces risks with respect to, co ordination, interfacing, project management and at the same time reduces total installed costs to the customer.

In the past the concept of modular switchrooms has been perceived as a technically inferior solution , the garden shed concept, but with advanced design , materials and manufacturing techniques the modular substations can be placed in the most extreme environments.

Modular prefabricated and commissioned switchrooms

- **Fire rated for ingress / egress**
- **Cyclonic wind loading**
- **Seismic**
- **Fire suppression systems**
- **Gas detection**
- **DC supplies**
- **Control, Protection and monitoring systems**
- **Environmental climate control**

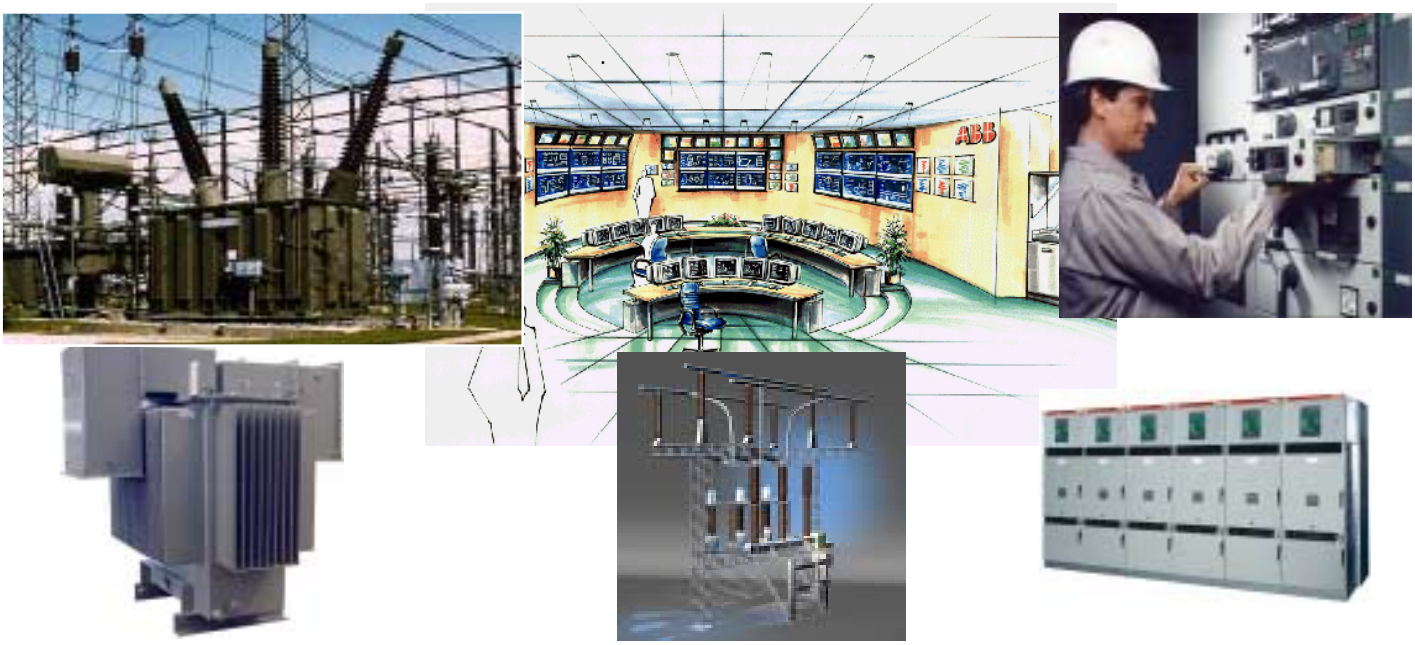
6.6 KV 2500 A 40kA Station Tie Switchboard / Switchroom being installed at NRG Gladstone Power Station.

The modular substations allow for the equipment to be factory installed and pre commissioned off site , thus allowing simple onsite civil works , installation and commissioning .
An ideal solution for remote sites or sites which are exposed to inclement weather or poor access soil conditions.
Mobilisation of site workforce can be dramatically be reduced with offsite switchroom construction , installation and pre commissioning of equipment.

Switchroom being installed on simple concrete footings , minimal site work required. Once installed only external field cabling required to be connected.

The complete solution.

ABB offers a complete single source , providing a simple uncomplicated substation installation via this modular concept incorporating the comprehensive range of ABB primary and secondary distribution equipment from 500kV through to 415V , including protection control and monitoring systems.

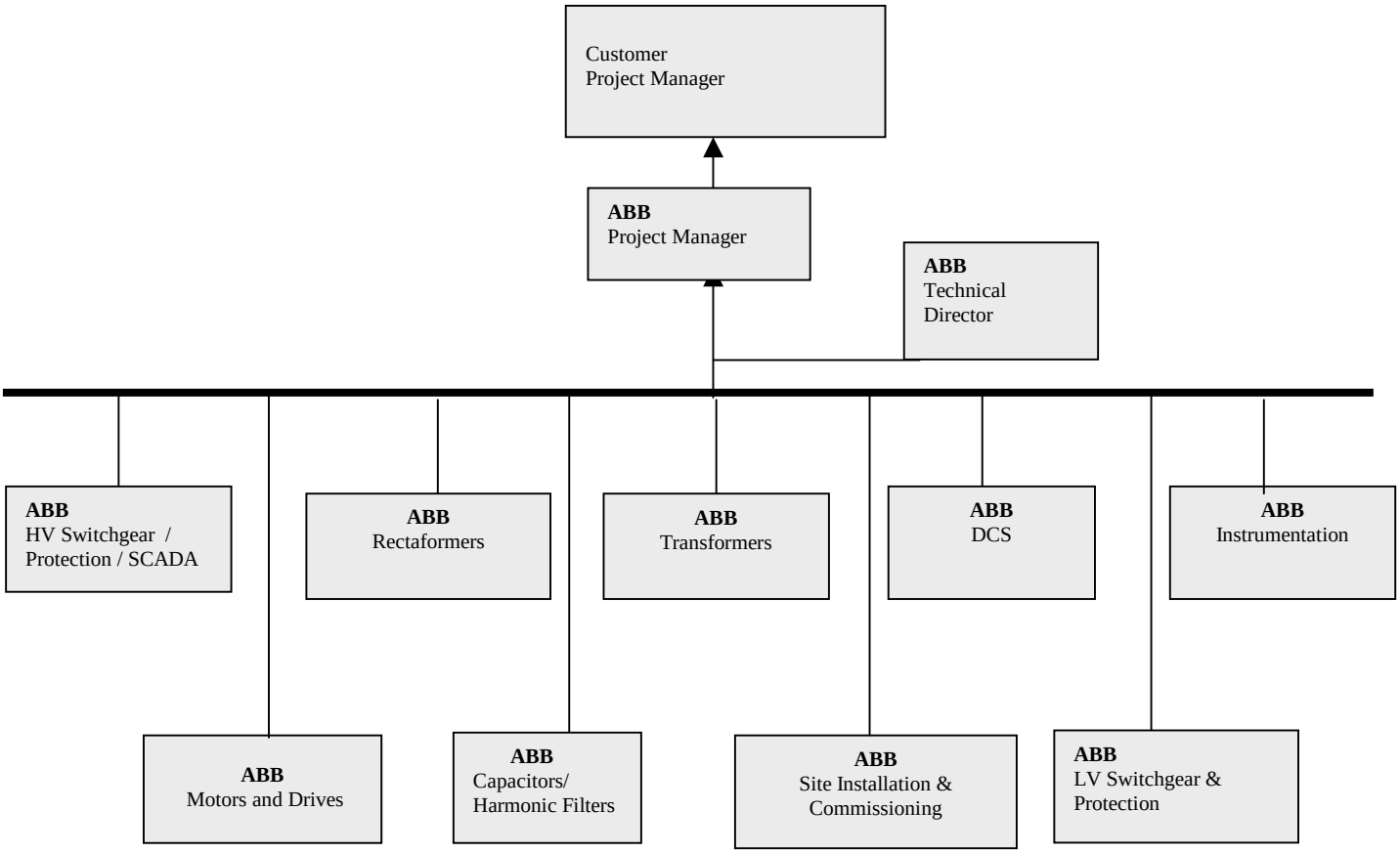


The complete package

Within the vast product range ABB is able to offer a complete integrated package , that provides an engineered , co ordinated and interface system harmonizing Power , Protection Control and Instrumentation within the pre packaged substations.

- Protection Relays for Transmission, Generation and Distribution
- Distribution Automation
- SCADA / EMS / DMS
- Substation Automation
- Power System Communication
- Metering
- Load management / Ripple Control equipment
- Power Transfomers
- Distribution Transformers
- Low voltage Switchgear (up to 1000V)
- Medium Voltage switchgear (up to 36kV)
- Intelligent Switchgear solutions
- Outdoor switchgear (up to 36 kV)
- Instrument transformers, cast resin to 36 kV, and Oil filled to 500kV
- Circuit Breakers - High Voltage & Generator Applications
- Surge Arresters, Distribution and Station class
- Disconnectors.
- GIS Switchgear.
- High and Low Voltage Capacitors
- Harmonic Filters
- Power Factor Correction

ABB ONE TEAM Approach



ADVANTAGES :

Professionally integrated and expertly interfaced package from mV to kV
ABB is one of the largest electrical engineering companies in the world, ensuring continuance of supplies and service of all project portions.

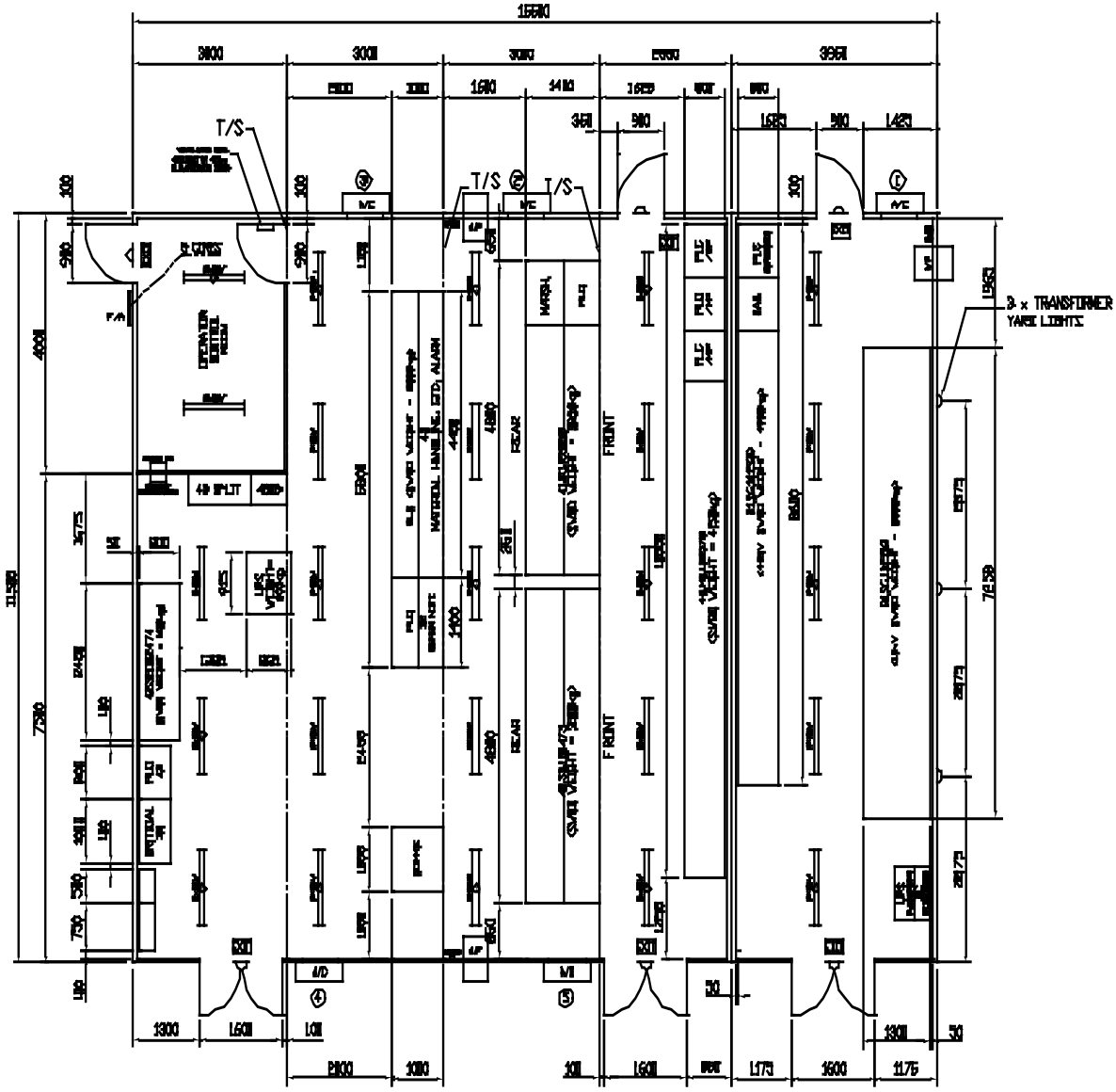
ABB provides state of the art latest technology solutions that ensure optimum plant performance ABB is a global company with local resourcing

Single point of contact for any electrical / control fault allowing :
Quicker response with , No finger pointing and no excuses.

Quick fix times therefore Less down time

Maximum savings

Modular Substations can be as simple or as complex as the installation requires.



PLAN VIEW

LEGEND

2x36W — 2x36V FLUORESCENT FITTING (PIERLITE DB236 WITH DB1S INDUSTRIAL REFLECTOR)

2x36W — 2x36V FLUORESCENT FITTING C/W MAINTAINED EMERGENCY PACK (PIERLITE DB236 MAINTAINED EMERGENCY)

EXIT — EXIT LIGHT

TWO WAY SINGLE POLE 10A LIGHT SWITCH

10A DOUBLE GPO - E/L PROTECTED

F/A — FIRE ALARM - ONE COMMON UNIT PER SUBSTATION

EYE 750 2D SODIUM LX FLOODLIGHTS OPERATED BY LIGHT CONTROL SWITCH WITH BYEPASS AT EACH DOORWAY & TRANSFORMER YARD. ALL SUPPLIED FROM LIGHT AND POWER DISTRIBUTION BOARD LOCATED IN SWITCHBOARD 21-SG-101539

UPS — UPS UNIT - BACKUP POWER SUPPLY TO PLC

A/C — LIEBERT TYPE ET059A AIR CONDITIONER

A/P — AIR PRESSURISATION UNIT

AP-SCS — AIR PRESSURISATION UNIT - SPEED CONTROL

PRD — 3 PRESSURE RELIEF DEVICES FITTED TO EXTERNAL WALL AT REAR OF 21SG101539 11kV SWITCHBOARD.

NOTE:

Call ABB for further details

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