Why have a Standard Switchboard/RTU Panel

TITLE FITS IN WELL WITH THE THEME OF GROUP DISCUSSIONS – ‘IMPROVING COSTS, PERFORMANCE, EFFICIENCY & SAFETY.’
PAUL O’KANE CONSULTANCY SERVICES IS KEY TO AN INTELLIGENT APPROACH IN KEEPING YOUR SWITCHBOARD/ PANEL DESIGN COST EFFECTIVE, CONSISTENT & SAFE
PAUL O’KANE CONSULTANCY SERVICES
SWITCHBOARD/PANEL MANAGEMENT
WASTEWATER TREATMENT
WASTEWATER PUMPING
CLEAN WATER TREATMENT
PRESSURE SEWAGE SYSTEM
BOOSTERS
GROUND WATER
WATER INTAKE
YOUR TRUSTED IMPROVING COSTS, PERFORMANCE, EFFICIENCY & SAFETY.' PARTNER
The Project Challenge
Goondiwindi RC Boundaries

- Population: 11,413 (2010)
- Density: 0.591589/km² (1.53221/sq. mi)
- Area: 19,292.1 km² (7,448.7 sq. mi)
Standard Switchboard/Panel Design ensures Monitoring & Control Consistency for every part of the water cycle.
Site Auditing
Condition Assessments
Compliance Auditing
Reverse Engineering

MEASURING
MONITORING
CONTROL
SUPERVISION
Standards Development
Our engineers have extensive experience in developing organisational standards for electrical design and installation including:
• Standard Drawings
• Standard Specifications
• Drafting Guidelines
• PLC Programming Requirements
• SCADA Standards
Design

- Concept and Preliminary Design
- Detailed Design
- RPEQ
Power System Analysis, Fault Protection Coordination and Arc Flash Studies.

This is dovetailed into our design process to engineer out issues and ensure compliance with AS3000:2007.

We use the following specialised engineering software:

- PowerCAD
- SKM PTW (Power Tools for Windows)

We provide:

- Power System Topology
- Load Flow and Voltage Drop Calculations
- Short Circuit Fault Studies
- Protection System Coordination Study
- Arc Flash Evaluation Study
- A Detailed Report containing:
  - Protection Device Settings,
  - Time Current Curves
  - Switchboard Arc Flash Categorisations
Arc Flash Analysis

**Definition**

An arc flash happens when electric current flows through an air gap between conductors. Accidents caused by touching a test probe to the wrong surface or slipped tool are the most common cause of an arcing fault. Arc flashes can also be caused by:

- Sparks due to breaks or gaps in the insulation
- Equipment failure due to use of substandard parts, improper installation, or even normal wear and tear
- Dust, corrosion or other impurities on the surface of the conductor

**Compilation of Electrical Arc Flash Video**

[LINK](#)
Goondiwindi RC
Next Challenge - Maintenance
MAINTENANCE CHALLENGES
Wasting man hours (internal staff and contractors) due to inconsistent switchboard Standards/Design
Unplanned and nuisance call outs due to differences in switchboard makeup.
Having a Backup Circuit to cope with the loss of the RTU for some reason
Energy waste due to inefficiencies in pump control and pumps not being controlled at the optimal speed.
Intelligent Treatment Plants & Pump stations with our state-of-the-art Standard Switchboards/Panels, communications & controllers.

DON’T WASTE YOUR TIME, MONEY and COMPROMISE, COST, EFFICIENCIES & SAFETY
LET’S TAKE CONTROL.
RTU/Pump Station Manager & Pump Station Backup Circuit

- MULTITRODE FSP RELAY AND PROBE AS BACKUP CIRCUIT TO THE RESIDENT RTU
Switchboards / Control Panels
Intelligent supervision system giving you total control over your complete network

KNOWLEDGE IS POWER. LET’S SEE THE BIGGER PICTURE.
Our endeavour is to solve the Water/Wastewater Challenges Electrically & Hydraulically for Goondiwindi RC

- INDUSTRY EXPERIENCE
- PROVIDING A TOTAL SOLUTION
- SITE AUDITING
- PASS ON 100 YEARS OF APPLICATION
- PROJECT PLANNING
- DESIGN
- TENDER/CONTRACT PREPARATION
- POWER SYSTEM ANALYSIS, FAULT PROTECTION COORDINATION AND ARC FLASH STUDIES
- PROGRAMMING (RTU, PLC AND SCADA)
- INSPECTION, TESTING AND COMMISSIONING
- STANDARDS DEVELOPMENT
- PROJECT MANAGEMENT
- EXPERTISE BUILT INTO OUR SOLUTIONS
Summary & Conclusion

In conclusion we can see the benefits of Why have a Standard Switchboard/RTU Panel is as follows:

- Additional cost reductions using a formalised set of standards and design and this Pump Station Manager/RTU are:
  - Simplified panel construction
  - Reductions in board manufacturing costs
  - Reductions in installation costs
  - Increased reliability and performance due to electronic devices in lieu of electromechanical options
  - Reduced maintenance costs
  - Improved efficiencies
  - Safer environments around switchboards and panels
  - Assists in good decision making & vision into all your assets

- Through the Optimisation process at the controller and visibility at both the RTU and the SCADA computer, return on their initial investment in an appreciable period of time. (I.e. Minimum 8 months maximum 18 months)

- Tangible ‘Whole of Life Costs’ for the enterprise.

- If the system is set up properly initially it will begin to pay for itself immediately.
Questions?

Thank you