

# PROJECTS LIST

## WATER AND WASTEWATER INDUSTRY

### Wallsend Water Pumping Station 1 & 2

Design of incoming power supply, electrical switchboards & Motor Control Centers (MCCs) including instrumentation & controls, PLC, telemetry and radio. Control philosophy document and functional specification to determine control set points for normal & emergency conditions, flow controls, motor starting and running controls.

### Cardiff 1 Wastewater Pumping Station

Options development for the upgrade of the electrical services including the incoming supply, switchboards & MCCs. Consultation & negotiations with Ausgrid for power supply upgrade, ASP3 design & approval. Maximum demand assessment including pump sizing and modes of optimal assets operations. Design and documentation for concept, detailed (Tender) and construction stages of the electrical services. Development of control philosophy, functional specifications and assessment of tenders, Studies for protection coordination, constructability, power quality and harmonic mitigation. Project planning for electrical services implementation, stakeholder consultation including Ausgrid, Hunter Water Corporation and multi-disciplinary design teams & consultants.

### Tomago (Ash Island) Trunkmain Earthing & Isolation Design

Assessment & evaluation of electrical safety risks due to high Voltage power lines in the vicinity of the Trunkmain and identify design requirements to control risks. Determined the requirements of Flange Isolation Kits (FIKs) and design of earthing systems.

### West Bagnalls Beach (Corlette 1) Water Pumping Station

Design of incoming power supply and switchboards including MCCs, PLC and telemetry. Control philosophy and functional specification including the requirements of control set points for normal & emergency conditions, flow controls, motor starting and running control.

## TEAM

Our Team has to offer wealth of technical know-how from their previous experience in Water & wastewater industry.

Team members have previously worked in Utilities and Design Consultancies. Their collective experience is broad and have many collaborative interactions with the key assets owners to provide solutions to their problems.

The projects listed are some of the key projects and our Principals have contributed to these projects at different stages of their career.

## **Gillieston Heights 4 & 5 Wastewater Pumping Stations**

Options study for incoming power supply, switchboards & MCCs. Consultation & negotiations with Ausgrid for power supply connection. Maximum demand assessment including pump sizing and modes of optimal assets operations. Design and documentation for concept, detailed (Tender) and construction stages of the electrical services. Development of control philosophy, functional specifications and assessment of tenders, studies for protection coordination, constructability, power quality and harmonic mitigation. Project planning for electrical services implementation, stakeholder consultation including Ausgrid, Hunter Water Corporation and multi-disciplinary design teams.

## **Woodburn Water Pumping Station**

Consultation & negotiation with Essential Energy for incoming power supply and electrical switchboards in a flood prone area. Electrical design for concept, detailed and construction stages for power supply, MCCs including instrumentation and controls, and telemetry. Tender documentation including functional specifications. Stakeholder consultation including Essential Energy, Richmond Valley city council, Coffs Harbor city council and multi-disciplinary design teams and consultants.

## **Evans Head Water and Wastewater Pumping Station**

Consultation & negotiation with Essential Energy for incoming power supplies and electrical switchboards for the network of water and wastewater pumping stations for a flood prone coastal area. Electrical design for tender and construction for power supplies, MCCs including instrumentation and controls, and telemetry. Tender documentation including functional & technical specifications. Stakeholder consultation including Essential Energy, Richmond Valley council and multi-disciplinary design teams and consultants.

## **Electrical Services for Water Pumping for ATC and Boggabri Mine**

Design services for the electrical power supply and control systems for mines' water pumping and storage sites including MCCs including instrumentation and controls, and SCADA. Defined electrical & control design criteria, functional & technical specifications, piping & instrumentation diagrams for the control system. Cost estimation and tender documentation for the electrical services.

## **North Rothbury (Lochinvar reservoir) Electrical Services**

Consultation & negotiation with Ausgrid for the incoming power supply. Design documentation for the electrical switchboard and control system panel including controls, telemetry, security and air craft warning lights. Control philosophy, technical and functional specifications including the requirements of control set points for normal & emergency conditions, flow controls, motor starting and running operations.

### **Tumut 3 Power Station Cooling Water System Instrumentation and Control Upgrade**

Options study on the control philosophy to accommodate rapid change over of unit's modes between Generator, Syncon and Pump. Requirement analysis and selection of cooling water flow meters. Design and update of piping & instrumentation diagrams and schematics for power supplies, control and SCADA. Detailed design for tender and construction. Project management including procurement construction, installation of equipment, Installation Test Plans (ITPs), commissioning and witnessing.

### **Micro Hydro development with Tumut 3 Power Station Cooling Water System**

Options study to minimise noise and energy waste in pressure reducing devices of Tumut 3 power station cooling water systems. Development of the micro hydro option including feasibility study and business case approval to implement reverse running impeller coupled with induction generator. Functional and technical specification for the detailed design and construction of proto type micro hydro generator to replace pressure reducing device. Design of micro hydro integration to main generator power supply and control schematic diagrams. PLC programming, Installation Test Plans (ITPs) commissioning and witnessing.

### **Jounama Dam pump well Electrical Services Relocation and Upgrade**

Options study for the review of control philosophy to relocate and upgrade pump well and dam control equipment to a non-confined space. Requirement analysis and selection of equipment. Design and update of piping & instrumentation diagrams, power supplies, control and SCADA schematics. Detailed design for tender and construction. Project management including procurement construction, installation of equipment, Installation Test Plans (ITPs), commissioning and witnessing.

### **Power supply and MCC design for hazardous area pumps in Ammonia plant at Orica**

Requirements analysis and basis of design for the selection of electrical equipment including variable speed drives and switchgear. Study of protection coordination and hazardous area design requirements. Design of power supply, instrumentation and Control and SCADA schematics with hazardous area requirements. Control philosophy and dossier documentation for the installation including instruments and equipment.

### **Mardi to Mangrove pumping station Design Review for Wyong City Council**

Design review and consultation to the asset owner (Wyong City Council), Department of Primary Industries & the design consultant on the location and sizing of the switchboard, motor drives and control panels to comply with safety and mandatory Australian Standards.

### **Design, Deliver and Improve Electrical plants, I & C Systems at Colgate Palmolive**

Design & manage capital works projects up to a value of \$10 million. Conversion of a high speed filling line to PLC/SCADA control, installation of a robotic palletiser, an energy management system for powder detergent plant and interfacing of SAP with formula and raw material management system. Commissioning and maintenance of electrical plants and instrumentation and control systems.