The process design of a water or wastewater facility ensures that the treatment requirements are captured and it is the instrumentation and controls that provides operations with the ability to optimize their system performance.

Once the process design is complete, the task of adding instrumentation and defining the control strategies for the various process areas becomes a critical aspect of system design. Our team has extensive experience working with process consultants to define the instrumentation and control strategies for process control. We then develop the process and instrumentation diagrams (P&IDs) using ISA standards (www.isa.org), and create the Process Control Narratives that define the software that is to be developed to fully control the system in an automated mode. We work closely with process consultants and operations groups to define the fully automated operation of facilities for our clients.

Instrumentation & Controls

Eramosa Engineering can provide the following services to our clients, during preliminary and detailed design, and into the construction phase of the project.

Control System Design

The process control of a facility is critical to ensuring the ability of the operations group to control a system under both normal and abnormal conditions. Our team understands the requirements for local, remote manual and fully automated control, and designs our control systems to allow for fault tolerant operation in the event of a failure through appropriate hardwiring of equipment where required for personnel and equipment safety.

P&IDs

These drawings are a critical design component for any control system and are used to detail the process equipment as well as instrumentation and control requirements. Typically these drawings depict all instrumentation and hardwired interlocks, I/O points and local control panels that are included in the control system design.

Process Control Narratives

During the preliminary design phase of a project our team works closely with the process design team to develop an understanding of how the process is to operate. Using the control descriptions provided by the process team we develop detailed control narratives that identify all normal and abnormal operations, hardwired interlocks, software interlocks, equipment operation, alarming, data collection and reporting requirements for each process area. These documents form an integral part of the control software development and the final operations manuals for each project.