



Improve Control & Safety System Reliability

Instrumentation, controls, & electrical systems are the foundation for a safe and reliable plant. If any issues arise, the well-designed safety systems will prevent equipment from exceeding safe operating limits.

At Equity Engineering, our Instrumentation, Controls, and Electrical Engineering team combines industry experience with a practical approach to ensure your field instrumentation, control systems, and power systems are delivering the required performance. We leverage our broad range of expertise to assess your systems and provide practical recommendations that are focused on safety, reliability, and code compliance.

Instrumentation Technology & Maintenance Strategies

We specify instrumentation solutions to meet your application requirements for process measurements and controls, analyzers, and protective and regulatory systems. We provide guidance on implementing digital and wireless instrumentation technology. Our team uses their instrumentation expertise, hands-on device diagnostics experience, and condition-based maintenance practices to help design instrumentation maintenance strategies. We can investigate failures, perform root-cause analysis, and recommend reliable alternatives.

Alarm Management

Implementing a properly designed alarm system results in sustained safe operation with fewer process upsets. Our team helps clients develop an alarm system philosophy, perform alarm rationalization, and measure progress following the ISA 18.2/IEC 62682 framework. We conduct alarm management system training to develop knowledge and build experience within the facility personnel as a precursor to philosophy development to ensure a consistent approach.

Risk Analysis Studies

We can facilitate process hazard analysis (PHA) and layer of protection analysis (LOPA) studies as well as quantitative risk analysis to evaluate hazard scenarios. We can develop facility process safety management (PSM) plans or conduct independent audits of your current PSM program. We collaborate with your team to conduct studies to evaluate compliance gaps with industry standards related to process safety such as storage tank overfill and flammable liquid storage.

Functional Safety & Safety Instrumented Systems (SIS)

A properly designed safety instrumented system (SIS) detects dangerous process conditions and automatically responds to drive the process to a safe state. Our team helps clients maintain compliance with ANSI/ISA/IEC 61511 Functional Safety: Safety Instrumented Systems for the Process Industry Sector. We provide technical support through all stages of the system's lifecycle with specific focus on the operation and maintenance stage. We provide documentation management services to keep your safety requirement specification; safety plan; and operation, maintenance, and proof test procedures up to date. We conduct functional safety assessments (FSAs), as well as provide independent verification audits to ensure your SIS is achieving the required performance. We customize our approach to your system and the needs of your team.

Electrical Systems

We can facilitate on-site electrical safety audits to evaluate performance to relevant regulatory standards. We can perform power system studies to ensure safe and reliable operation such as short circuit, coordination, and arc flash hazard analysis. We can also provide shop surveillance for motor repair and rewind services. Equity engineers will collaborate with the equipment owner and motor repair facility to review the motor condition, evaluate the damage assessment, and monitor the repair and testing activities.

Benefits



Maintain uptime and efficiently control the plant



Reduce maintenance costs



Improve operational reliability and safety of systems



Comply with jurisdictional requirements



Apply a risk-based approach to maintenance strategy

Risk Assessment

Severity	Disaster	High	Medium	Minimum
Irregularly	Critical	Critical	High	Medium
Probable	Critical	High	Medium	Medium
Conditional	Critical	High	Medium	Low
Frequently	High	Medium	Medium	Low