Contact Energy® Reduces Operator Alarm Load by 60% for Heterogenous Control Systems

PAS PlantState Integrity™ Increases Operator Effectiveness, Reduces Operator Fatigue

About the Company
Contact Energy® is the second-largest power producer in New Zealand, with ten generation sites whose capacity exceeds 2 gigawatts. They include a mix of gas turbine, geothermal, hydroelectric, and the trial incorporation of end-user installed photovoltaic into the grid.

Challenge
Contact’s power generation facilities are a hybrid of older and newer technologies. Operator alarms were identified as a challenge and an opportunity for business improvement. Contact identified over 90,000 configured alarms with inconsistent approaches to their creation, definition, and use. Excessively high alarm rates, nuisance alarms, and alarm floods at several facilities hindered operators’ ability to respond to alarms effectively.

Business Benefits:
- Increased operator situation awareness
- Reduced operator load and operator fatigue
- Improved process uptime
- Centrally-managed multi-site platform
- Site and enterprise performance reports and dashboards
Solution

CONTACT sought to address their corporate-wide alarm management challenge by first developing an alarm philosophy to govern the design, implementation, and maintenance of the alarm system.

PAS facilitated the creation of a comprehensive alarm philosophy in alignment with the principles contained in the ISA 18.2 standard and PAS’ The Alarm Management Handbook.

CONTACT set the goal to acquire a single software platform to manage the alarm systems for four different control systems installed across ten sites. After evaluating multiple available solutions, CONTACT chose PAS PlantState Integrity™ (PSI) for its robust platform-independent connectivity and comprehensive capabilities.

PSI provided automated alarm performance reports for all sites, with KPI analyses for alarm rates, priority distribution, frequent alarms, flood analysis, chattering alarms, stale alarms, and several others. CONTACT also implemented the PSI Master Alarm Database and Alarm Audit and Enforcement modules for proper management of change.

Results

As each site received the regular performance reports, the detailed, quantitative analyses enabled immediate alarm improvement by first addressing nuisance alarms. In a short four-month period, CONTACT achieved 60% in alarm rate improvements by adjusting alarm setpoints, deadbands, delay-times, and improving control logic. Additionally, the company realized a 65% reduction in long-standing “stale” alarms, contributing to a noticeable improvement to the operators’ alarm-related workload.