

System Integration Groups Representative Projects:

- **Steel Industry**
- **Power Industry**
- **Marine Industry**
- **Food Industry**
- **Chemical Industry**
- **Aerospace Industry**
- **Nuclear Industry**
- **Others**

Steel Industry

- Designed and built complete Retrofit Heat Treating Furnace Control System for a sheet processing Industry. Used the Genesis Software Package, with individual Zone Control (4) allowing complete Ramp and Soak functionality, from the PC. Also included is the ability to control load temperature versus air temperature.
- Designed and built Complete Furnace Control System including all Car, Door and Burner Management Functions
- Provided commissioning services for two large multi-fuel boilers with a maximum capacity of 169 metric tonnes (165 imperial tons) per hour each at 3100 kPa pressure. These boilers fired Blast Furnace gas as the primary fuel with Coke Oven gas or Natural gas as the secondary fuel, and oil as the final fuel.
- Provided commissioning and start-up services for two package multi-fuel Boilers with a maximum capacity of 80 metric tonnes (78 imperial tons) per hour each base load at 3100 kPa pressure. These Boilers fired Coke Oven gas as the primary fuel and Oil as the secondary fuel.
- Designed, installed and commissioned a waste water Bio- Remediation control system for a steel processing Industry.
- Designed and developed the PLC program and HMI screens to control 43 KV sub stations.
- Reverse engineered and manufactured a custom designed - outdated interface board at the fraction of the control system replacement cost.

Power Industry

- Design, implementation support and startup of 1.5 MW temporary power during asbestos removal project. Developed substation and distribution design & drawings. Supervised build trades during Installation & startup.
- Design specification, purchasing assistance, startup assistance of diesel powered co-generation station.

• Detailed specification and design of a steam turbovisory system including training manuals and installation drawings.

Marine Industry

• Designed, installed and commissioned a **Ballast Control System** for ship ballast tanks. The system includes a remote computer control and automatic valve travel calibration. This system is developed as a **Marsh standard product**.

• Designed, installed and commissioned a fuel rack positioning indicating system for the ships. The system uses the latest ultrasonic sensors to measure the distances.

• Designed, installed and commissioned an Engine & shaft speed measuring indicating system for the ships

• Simplified the existing complex pneumatic engine control system to increase the reliability and facilitate easy maintenance and trouble shooting by ship crew.

Chemical

• Designed, configured, programmed and commissioned the control system to operate the design prototype pilot plant for the halogen recovery system. This was a prototype project with high degree of Research & Development in establishing unique control system to extract / condense / purify CFC's using Heat & Liquefied gases

• Technical support by means of supplying instrumentation staff to address all concerns relating to process control. Foxboro IA Upgrade, maintenance support

• Designed and installed a multi-tank level monitoring and control system. Specified Field transmitters and interfaced with the existing DCS system

• Specified, procured , Installed and Commissioned a 100+point SCADA system. This included all electrical and instrumentation work as a turnkey project.

• Developed complete specification for a DCS selection process and performed consultation with clients purchasing personnel. for selection of DCS system. Performed detail design, Engineering, Programming and Configuration through Startup and commissioning

• Designed, installed and commissioned a multi-loop measurement system for a back pressure control system for a catalytic converters manufacturing facility in automotive industries.



Food


- Installation of all instrumentation and electrical equipment of a Plant Wide Effluent Treatment System. This project also includes the collection, pre-treatment and then the final treatment of all the waste water on the complete plant site. A TI 545 PLC was installed and programmed to control and perform process calculation.
- Supply, installation, start-up and calibration of interface modules to all weight processing systems in the plant resulting in the elimination of weight instruments that were frequently breaking down resulting in excessive downtime
- Provided a fully operational Computerized Maintenance Management Software System. Computer equipment, installation, data entry of Maintenance Worthy Items (1200), start-up and training were all provided by MARSH. This system was operating within three months of order placement.

Aerospace

- Designed installed and commissioned an autoclave control system using Allen Bradley PLC and Panel mate for an aerospace OEM
- Designed , installed and commissioned a 64 point heat treat Oven control system with multiple zone ramp soak temp control and temp tolerance of +/- 1°C.
- The supply of integrated cabinetry and VME computers and Design Acceptance Test software for MONCO (Runway lights control) units installed at all Canadian Airports.

Nuclear Industry

- **Shutdown System 2:** Integrated and qualified Shutdown System 2 (SDS 2) hardware for Wolsong 2, 3 &4 using VME bus architecture system. This system is developed as a Marsh Standard product.
- **Watch dog:** Designed, Built and qualified External watch dog unit for Wolsong 2,3 &4. This system is developed as a Marsh Standard product.
- **PHT pump speed pickup:** Designed, Built and qualified PHT pump speed pickup system for Wolsong 2,3 &4. This system is developed as a Marsh Standard product.
- **Shutdown System 1:** Developed a detailed Engineering and Proposed a VME based Shutdown System 1 (SDS1) for CANDU 9 reactors.



•TALC: Designed, Built, Integrated and qualified a Powerhouse Emergency Ventilation Logic System for Bruce Nuclear Power plant using FPGA technology for Ontario Hydro. This system is developed as a Marsh Standard product.

OTHERS

•As a part of our client Engineering group our system Integration group staff provides the expertise for clients Electrical and Instrumentation divisions.

•The supply, installation, commissioning, start-up and training of a complete Oven Control System. AS a part of the projects, Validation Services and Products have been provided to assure compliance with the Food and Drug Administration requirements.

•Manufactured, installed and commissioned of 11' x 80' Motor Truck Scale for Landfill site, including special foundation design and Waste Management Automation System.

•Supply, commissioning and calibration of a batching system used in the pigment portion control phase of the manufacturing process.

Please call us for more details at 1-800-449-2719 or
For Nuclear Projects, contact us at: nuclearservices@marshinst.com

For all other System Integration Applications contact us at:
systemintegration@marshinst.com