

YEAR	INDUSTRY	REGION	PROJECT DESCRIPTION
2016	Mining: Mineral Processing	Canada	Electrical, instrumentation and controls leadership for the detailed design of a precious metals refinery.
2015	Mining: Mineral Processing	South America	Commissioning oversight for a 240,000 tonne per day copper concentrator, as Lead Electrical and Instrumentation Engineer.
2014	Mining: Mineral Processing	Africa	Control system commissioning assistance for a gold concentration and treatment plant. Control system: Emerson DeltaV.
2011-12	Mining: Mineral Processing	USA	Electrical, instrumentation and controls for a High Pressure Grinding Roll Pilot Plant. Control system: Quantum, Unity Pro, Citect.
2008-14	Mining: Mineral Processing	USA & Australia	A program of projects to develop a common machine control and condition monitoring system for a manufacturer's line of mineral processing equipment. A hardened Windows machine provided web-based user interface, LabView-based condition monitoring, and various other apps. A hardened Linux machine provided PLC control via Rockwell Automation's ISaGRAF.
2007-08	Mining: Mineral Processing	USA	Electrical, instrumentation and control system upgrade for a uranium concentrator. Project value: \$3,500k USD. Control system: Rockwell Automation ControlLogix PLC and FactoryTalk HMI.
2006-07	Mining: Mineral Processing	Indonesia	Prepared the logic narrative and program design, then implemented the PLC-5 programming of new HPGR (high pressure grinding roll) circuit. Project value: \$120k USD.
2006	Mining: Mineral Processing	Indonesia	PLC programming of portsite ship loader. Control system: Allen-Bradley PLC-5.
2005-06	Mining: Mineral Processing	Canada	Engineering and PLC programming of high tonnage aggregate plant. Control system: Rockwell Automation SLC-5 and RSView32.
2005-06	Mining: Mineral Processing	USA	Electrical engineering, instrumentation and control specifications, and programming for moly plant expansion. Project value: \$ 760k USD. Control system: Emerson DeltaV.
2005	Mining: Mineral Processing	USA	Designed and drafted electrical schematics, PLC cabinet layouts and wiring diagrams, and programmed the PLC and HMI for manufacturer's equipment test center. Plant consisted of 25 motor loads fed from MCCs controlled by a SLC-5/04 PLC and RSView32 HMI. Project value: \$ 50k USD.
2004	Mining: Mineral Processing	USA	Designed and drafted electrical schematics, PLC cabinet layouts and wiring diagrams, and programmed the PLC and HMI for the construction of an aggregate crushing plant. Plant consisted of 140 motor loads fed from DeviceNet MCCs controlled by SLC-5/04 PLCs and RSView32 HMIs. Project value: \$ 140k USD.
2003	Mining: Mineral Processing	Russia	Designed the Siemens Step 7 control logic and provided commissioning assistance for a diamond concentrator.
2003	Mining: Mineral Processing	Indonesia	Engineering review, Foxboro DCS Configuration and PLC-5 programming for Overburden Handling System 3. Project value: \$224k USD.
2002-03	Mining: Mineral Processing	Indonesia	DCS Configuration for Knelson Concentrator in Indonesia and Kelowna office. Completed DCS logic configuration in Kelowna office then travelled to site to supervise graphic development and assist with commissioning. Project value: \$50k USD. Control system: Foxboro I/A.
2001-02	Mining: Mineral Processing	Indonesia	Programming of a PLC-5/Foxboro I/A control system for a pressure filter at the portsite plant. Project value: \$135k USD.
2000-01	Mining: Mineral Processing	Indonesia	Controls upgrade to a concentrate drying, storage and shiploading system. Included retrofit of a PLC-5 system to a hardwired plant. Project value: \$530k USD.
2000	Mining: Mineral Processing	Canada	Revised Modicon Quantum PLC program and Wonderware HMI configuration, then commissioned the new program at the customer site, which included considerable loop tuning for the grinding circuit of a gold concentrator.
2000	Mining: Mineral Processing	Australia	Provided Foxboro I/A DCS configuration for startup support of a lead/zinc concentrator.
1999	Mining: Mineral Processing	Turkey	Audited the Yokogawa Centum DCS and made recommendation for the resolution of customer concerns.

1999	Mining: Mineral Processing	Indonesia	Collected data at site regarding the Oreflow control system upgrade. The following information was collected: PLC intercommunication network diagram, I/O audit, PLC and comms performance audit, process equipment audit, load control audit. Control system: Allen-Bradley PLC-5.
1999	Mining: Mineral Processing	Canada	Reviewed and documented existing LabView software application, then modified the application for a manufacturer's mill charge sensing system.
1999	Mining: Mineral Processing	Indonesia	Researched, specified and procured National Instruments sound card and programmed LabView software for SAG mill sound analysis.
1998	Mining: Mineral Processing	Indonesia	Onsite period of general electrical controls support. Activities included: logged forces and shorted branches in PLC-5 programs, evaluated PLC security options, upgraded firmware on PLC processors, evaluated PLCs for Y2K sensitivity, troubleshot multilin comms problem, evaluated and re-wrote primary crusher PLC-5 program, commissioned a lime plant, and implemented a PLC-based Dahlin compensator.
1998	Mining: Mineral Processing	Indonesia	Proposal for crusher PLC-5 program re-write.
1997-98	Mining: Mineral Processing	South America	Allen-Bradley PLC-5 programming and RSView32 HMI configuration and FAT for the 96k expansion of a copper concentrator. System included four PLC processors and three different control rooms.
1997	Mining: Mineral Processing	Indonesia	Drafted motor schematics and wiring diagrams, designed/drafted PLC cabinet layouts and wiring diagrams, completed DCS/PLC data mapping, prepared site work punchlist, provided installation supervision and commissioning assistance for North Concentrator PLC system.
1996	Mining: Mineral Processing	Canada	Drafted loop sheets, assigned I/O, configured Yokogawa DCS, assisted with installation of CPU cabinet and commissioning for instrument additions to a coal preparation and drying plant.
1996	Mining: Mineral Processing	Canada	Drafted motor schematics, assigned PLC-5 I/O, programmed Yokogawa DCS, assisted with control system changeover and plant startup for a coal preparation and drying plant.
1995-96	Forest Products	Canada	Developed electrical drawings, PLC I/O layouts, bill of materials, PLC programming of Allen-Bradley PLC-5 for a planer mill sorter line.
1995-96	Forest Products	USA	Prepared schedule and project binder. Developed electrical drawings, bill of materials, programmed motion controller in "C" and provided startup assistance for automated grading stations.
1995	Forest Products	Canada	Modified electrical drawings, PLC I/O layouts, bill of materials, PLC programming of Allen-Bradley PLC-5/40 for angled ending rolls addition.
1995	Forest Products	USA	Completed testing to resolve "bad sample" problem and assisted with shipping for x-ray lumber gauge.
1995	Forest Products	Canada	Developed electrical drawings, bill of materials, tested and assisted with shipping for x-ray lumber gauge.
1995	Forest Products	Canada	Developed electrical drawings, PLC I/O layouts, bill of materials, PLC programming of Allen-Bradley PLC-5/40 and provided startup assistance for an optimized trimmer, sorter and stacker line.