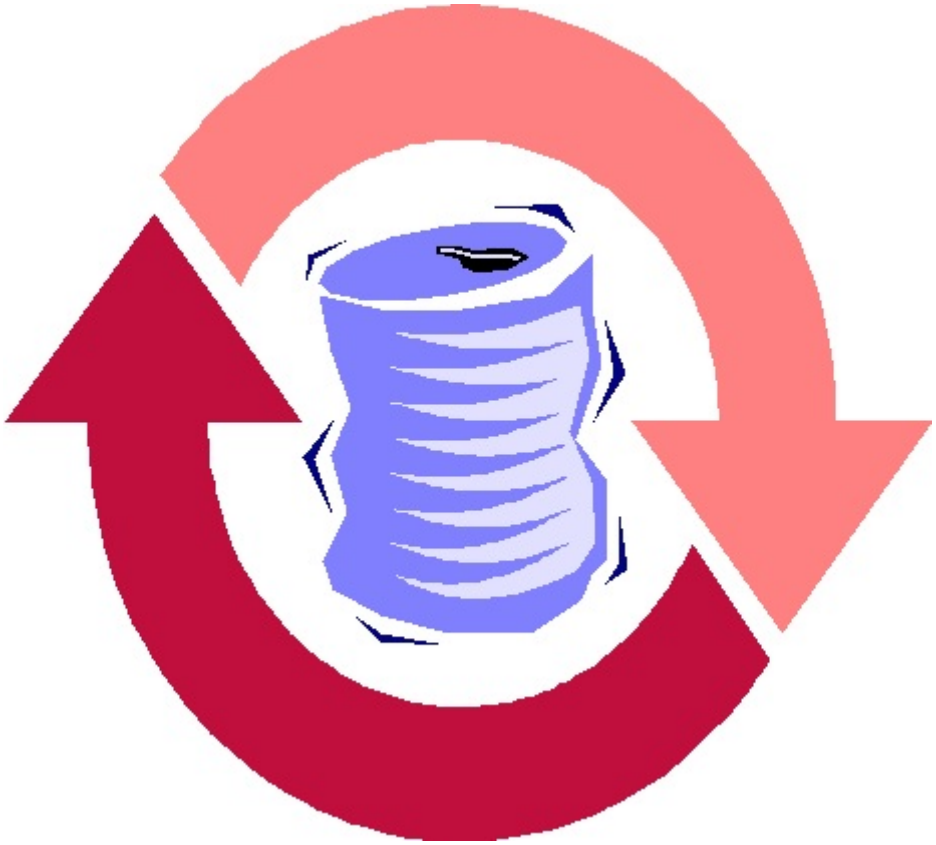
Project Profiles

Metal and Plastic Recycling



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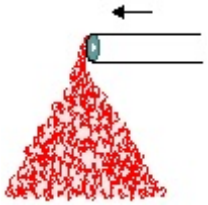
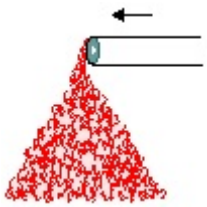
Car Shredder Secondary Recovery

Description:	Three facilities were expanded to sift and separate additional metals from Automotive Shredder Residue. (This is after the ferrous and large aluminum pieces have been separated.) Material is sifted into different size ranges and then several different pieces of proprietary equipment are used to separate the metals. All of these units are controlled from the PLC.
Hardware:	The facility is controlled by an Allen Bradley CompactLogix PLC. VFDs are controlled over DeviceNet and the belt scales over EtherNet/IP. Automatic feed rate control is implemented using one of the belt scales and the VFD on the feeder.
Operator Interface:	The operator controls the mill with touchscreens (PanelView 1500+ or Proface). Automatic start and stop sequences are fully programmed.
Engineering Activities:	Control System wiring diagrams, Control Description, Instrument Specifications, PLC and PanelView programming and Start-Up Assistance.
System Documentation:	As built drawings and complete Software Documentation were provided.



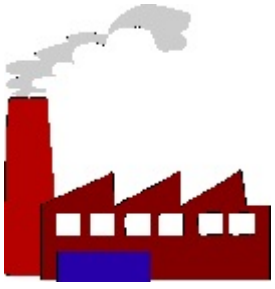
Car Shredder

Description:	This facility shreds cars and separates the metals so that they can be recycled. We provided a new design after a fire damaged the original facility. This was on an expedited four month schedule.
Hardware:	The facility is controlled by an Allen Bradley SLC 5/04 PLC. The hammer mill is powered by a 4000 hp motor with a reduced voltage starter. The conveyor motors have an automatic start and stop sequence.
Operator Interface:	The operator controls the mill with conventional pushbuttons and a joy stick controller. The plant is monitored with an Allen Bradley PanelView.
Engineering Activities:	Control System wiring diagrams, Control Description, PLC and PanelView programming and Start-Up Assistance.
System Documentation:	As built drawings and complete Software Documentation were provided.



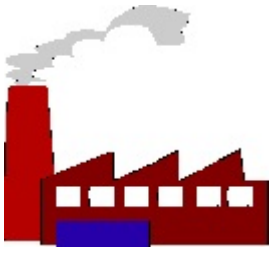
Recycling Plant Controls

Description:	These plants separate shredded waste material so that it can be recycled. The plants are located in China and Europe.
Hardware:	Allen Bradley SLC 5/05 PLCs are connected to the Plant Wide Control System's ethernet network. Each PLC is supplied with a remote rack and a PanelView 1500 Plus touchscreen (on a Remote I/O network). The total I/O exceeded 100 analog points and 2000 digital points per plant.
Operator Interface:	The local operator interfaces were PanelView 1500 Plus touch screens. These were supplied as bilingual units. The plant was monitored by two Supervisory Control and Data Acquisition (SCADA) computers running an RS View application.
Engineering Activities:	Control System Design (including preliminary design), Control System Wiring Diagrams, Programming, Documentation, and Start-Up
System Documentation:	Control Descriptions, Control System Wiring Drawings, Piping & Instrument Diagrams, Instrument Specifications, PLC Ladder Program, I/O Listing, Cross Reference, PanelView and RS View Documentation.



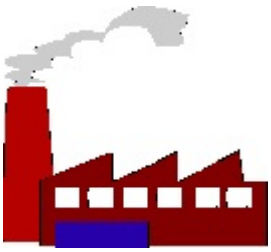
Metal Recycling Remote Monitoring

Description:	This system monitors three facilities spread out through the United States and Canada.
Hardware:	Each facility is supplied with a VPN/Firewall that acts as a gateway to the Control Ethernet network. Our server (located in Moraga) connects over the VPN and acquires data that is then stored in a SQL database. The system is configured only to read data so plant operations can not be affected. The SQL database is maintained in Moraga.
Operator Interface:	Data can be viewed (by authorized personnel) from any computer with Internet Explorer (or any other compatible browser) that has an internet connection. The system utilizes a Java Plug-In module. The users and passwords are administered from our site in Moraga. This utilizes a connection to a different server located in our office. This system uses Inductive Automation FactorySQL and FactoryPMI.
Engineering Activities:	Custom Programming, SQL Server Administration, and Hosting.
System Documentation:	System Network Drawings, and Program Documentation.



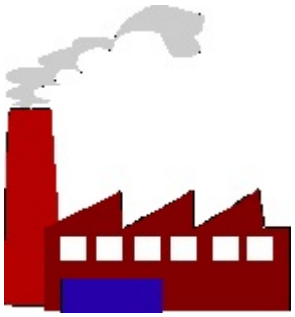
Recycling Plant Remote Monitoring

Description:	This plant separates shredded waste material so that it can be recycled. The plant is located in Europe.
Hardware:	The plant SCADA System utilizes RS View to gather and display data. The acquired data is sent through a Gateway computer to our facility in Moraga. The data is sent in an encrypted format. Our site contains the SQL Server and the Application Server for Inductive Automation's Factory PMI.
Operator Interface:	Data can be viewed (by authorized personnel) from any computer with Internet Explorer (or any other compatible browser) that has an internet connection. The system utilizes a Java Plug-In module. Users and passwords are administered from our site in Moraga. Over 1000 items are monitored and data is updated every five minutes.
Engineering Activities:	Custom Programming, SQL Server Administration, and Hosting.
System Documentation:	System Network Drawings, and Program Documentation.



Waste Metal Baler

Description:	This facility takes the waste from a series of stamping mills and produces 350 pound bales for recycling. The waste metal is weighed and dropped into the baler. The finished bales are dropped into a truck. An automatic bypass conveyor is provided in case the baler is out of operation.
Hardware:	The facility is controlled by an Allen Bradley SLC 5/04 PLC .
Operator Interface:	The operator controls the system with conventional pushbuttons and selector switches. The operation is monitored with an Allen Bradley DTAM Plus..
Engineering Activities:	Modified the wiring diagrams to include the new hydraulic unit, modified the PLC and DTAM+ programming, and Start-Up Assistance.
System Documentation:	As built drawings and complete Software Documentation were provided.



Industrial Waste Water Treatment

Description:	In this project we specified and engineered control system and instrumentation modifications for Industrial waste water processing at a large semi-conductor facility. We documented the previously installed instrumentation and produced a bid-package for system replacement. This system utilized treatment, biotreatment and filtration.
Hardware:	Siemens/TI 545 Programable Controllers
Operator Interface:	Intellution DMACs stations.
Engineering Activities:	Piping and Instrument Diagrams (P&IDs), Instrument specifications (per ISA 5.20), Control System wiring diagrams, Schedule, and a Control System bid package were prepared.
System Documentation:	Bid Package drawings and specifications were provided.