



A Rockwell Automation Company

Baymag Plant II Control System

The Client:

Baymag mines and processes raw magnesium ore and processes it into pure magnesium oxide (MgO).

The products they produce is used for livestock supplements, milk of magnesia, paint, ceramics and refractory brick.

They operate two plants located in Exshaw, Alberta.

Plant I processes the raw ore using a crushing system and a rotary kiln. Plant II takes some of the product from Plant I and fuses it for use in refractory brick. Plant II was expanded to include a crushing, processing and milling system to expand Baymag's production.

The Requirement:

The existing Plant II utilized Allen-Bradley PLC hardware and Intellution FIX MMI software. The new system had to integrate with the old PLC and MMI systems to provide plant wide uniformity and control. Operators needed to be able to operated both the existing plant as well as the new plant from the same MMI system as well as having remote MMI stations available for operators in other area's of the plant.

The control system needed to have the ability to communicate to a scale for the loadout system which communicated via the Modbus communication protocol.

A number of manufacturer supplied skid packages also needed to be integrated into the system.

The Design Solution:

The new PLC system was implemented using Allen-Bradley's 5/40C PLC processor and 9 remote racks of I/O strategically placed in the plant. ControlNet was chosen for remote I/O communication for I/O update speed and for future peer to peer communication.

The PLC system also contained a 1785-ENET card which provided an Ethernet port for MMI communication.

A ProSoft communication card was used to communicate to the load out scale. This provided the control system with the necessary information to automate the load out sequence.

Two pneumatic conveyor packages were integrated into the control system via remote I/O. These packages contained SLC-500 I/O systems which do not have ControlNet capability.

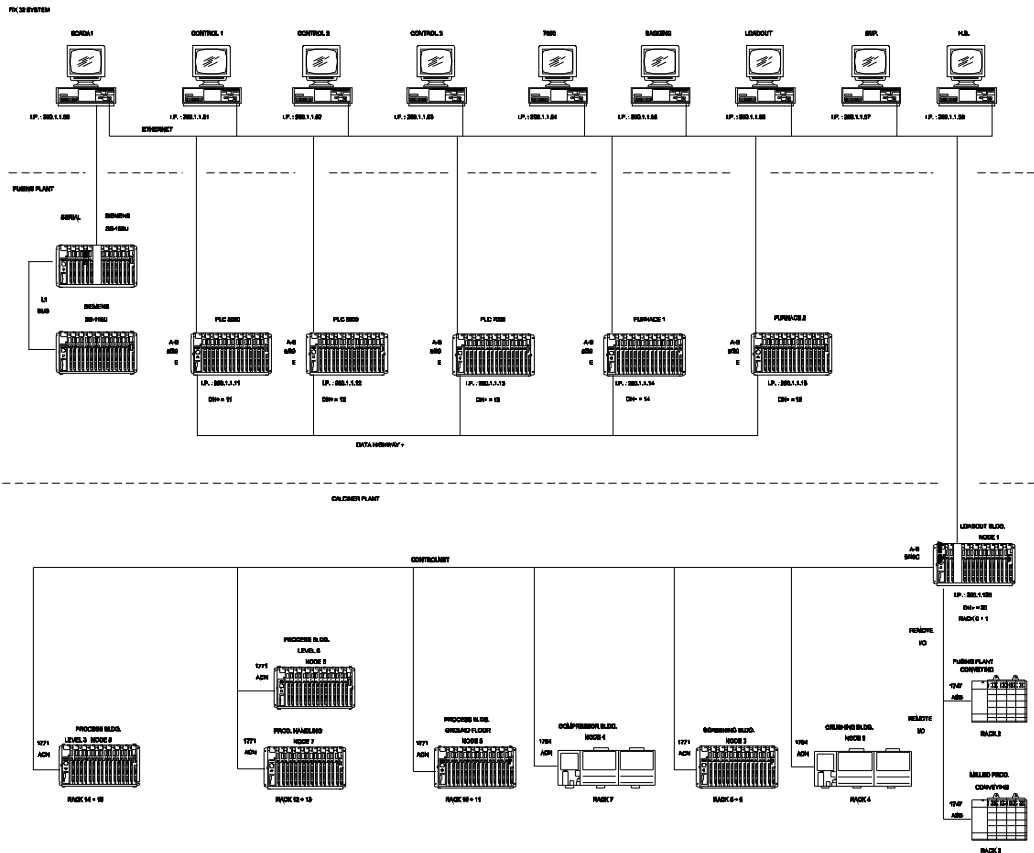
The existing Intellution Fix system was upgraded to run on the Windows NT platform. The communication driver was upgraded to an Ethernet driver as well. This meant that all PLC 5/15's in the existing plant needed to be upgraded to PLC 5/20E's to provide an Ethernet port for MMI communication. Five new Intellution Fix nodes were added as well.

The new plant MMI database was integrated into the existing database and new screens were provided for each of the new plant areas. This provided a central location for all MMI functions including Trending. Voice alarms were utilized for critical alarms in both plants.



A Rockwell Automation Company

Baymag Plant II Control System



System Specifications:

- 1 Intellution Fix SCADA node
- 8 Intellution Fix View nodes
- 1 Allen-Bradley PLC 5/40C
- 5 1771-ACN ControlNet remote I/O adapters
- 2 1794-ACN Flex I/O ControlNet remote I/O adapters
- 2 1746-ASB SLC500 Remote I/O adapters
- 1 ProSoft Modbus master communication module
- 390 Discrete inputs
- 245 Discrete outputs
- 40 Analog inputs
- 20 Analog outputs
- 6 RTD inputs
- 16 Thermocouple inputs

For further information or to contact a Hinz office near you, please check our website at:

www.hinz.com