HINZ
A Rockwell Automation Company

Robin Hood Multifoods Inc.
Oat Processing

The Client:

Robin Hood Multifoods Inc. is a Canadian subsidiary of International Multifoods Inc. of Minneapolis MN. The mill in Saskatoon produces a full line of standard milled grain products such as wheat flour and rolled oats. Robin Hood has recently embarked on an automation program to prepare the mill for the future.

The Requirement:

The Oat Mill processes raw oats delivered to the mill by truck and train, and produces rolled oats, oat bran, and oat flour. The operation of the Oat Mill was a manual operation from a operator panel in the mill area. The controls were all hard wired with very little motor control interlocking. When a problem occurred there were no alarms annunciated to the operator, therefore problems would only be noticed by visual inspection. When equipment failed or a choke situation occurred, it would take a long time before it was noticed or action was taken to rectify the problem.

Robin Hood wanted to automate the process to reduce the amount of down time as a result of undetected alarm conditions, and greatly reduce the amount of lost product. Since the operation was to be largely unmanned a portable alarm paging system was also required. This paging system would allow the operators to leave the area to perform other functions but to get immediate indication when a problem was detected.

The Design Solution:

The new system consists of two Allen-Bradley PLC 5 PLCs. They control the operation of the oat mill, starting and stopping equipment as necessary. The processes currently controlled are the cleaning and rolling of oats. The oat bran and oat flour systems are to be added in the future.

The cleaning process provides the separating of oats from other unwanted grains, hulling, and a kilning process to kill any bacteria present in the oats. The oats at this point can be left whole or cut to be stored in elevator bins for use at a later time by the rolling process. The rolling process produces several types of rolled oats. One of the types includes a pre-cooked product. Other types of rolled oats include using whole or cut products. These products are conveyed to the packing area of the mill where it is put into various bag sizes.

The hulls and other unwanted material present from the raw oats received are sent to a grinding and pelletizing process. This system is shared with the wheat mill.

The system makes use of two Allen-Bradley PLC 5/25s. The first PLC controls the majority of the motors and equipment for the cleaning and rolling processes. The second PLC controls the grinding and pelletizing system.

An Allen-Bradley Advisor station is used as the Graphical User Interface. This interface includes graphic screens displaying the flow of the oat system and for the grinding and pelletizing. The operator controls all aspects of the process from this station. All motor sequence starting and stopping is initiated from a sealed membrane keyboard attached to the Advisor station.

A Motorola UHF Pager transmitter is interfaced to the PLC so that the operator is alerted to all alarms that are annunciated on the Advisor.

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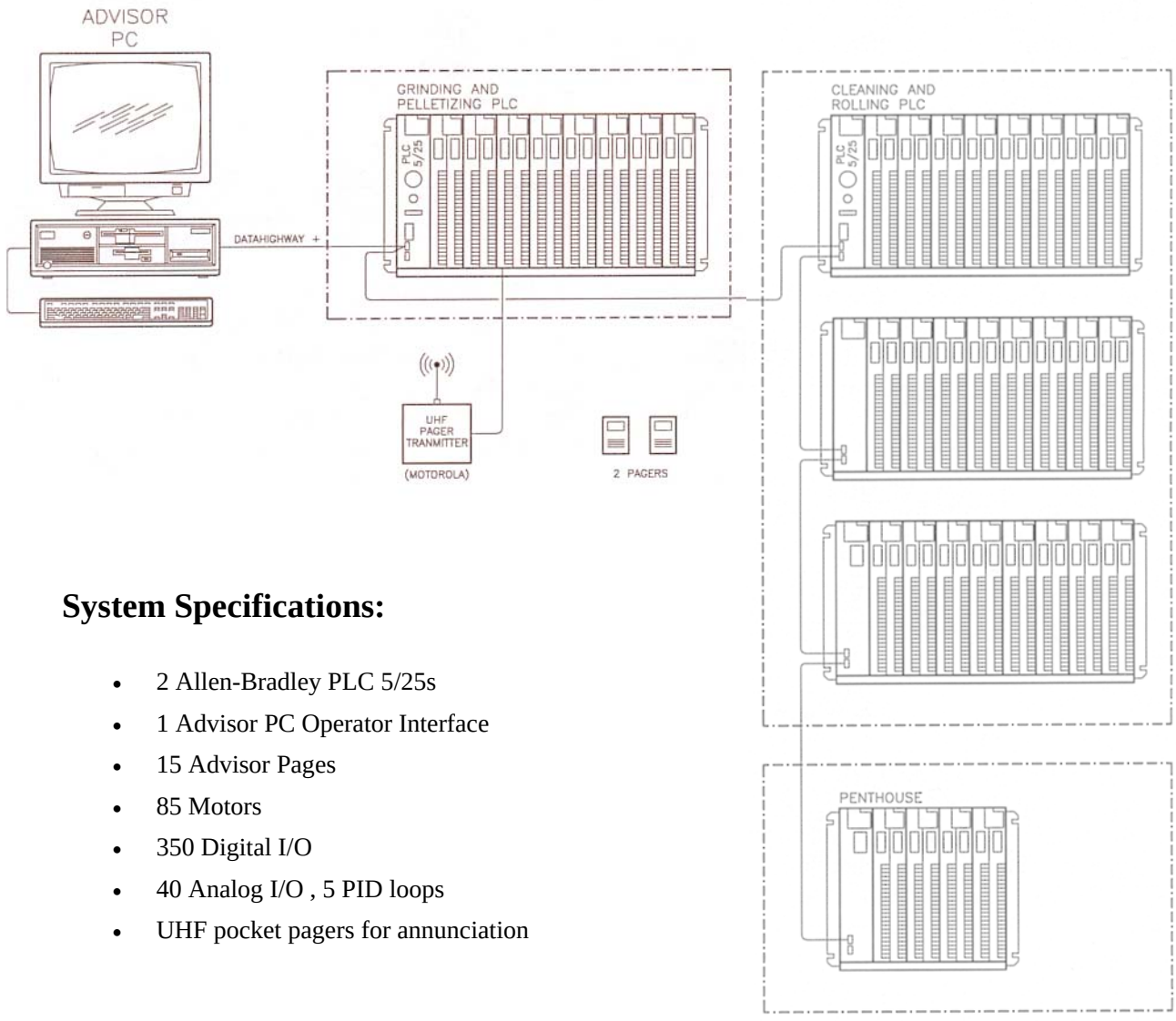

System Specifications:

- 2 Allen-Bradley PLC 5/25s
- 1 Advisor PC Operator Interface
- 15 Advisor Pages
- 85 Motors
- 350 Digital I/O
- 40 Analog I/O , 5 PID loops
- UHF pocket pagers for annunciation

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

www.hinz.com