



A Rockwell Automation Company

## Trus Joist Corporation Fluidized Bed Burner

### The Client:

Established in 1965, the Trus Joist Corporation produced the world's first all-wood I-joist in 1969, the TJI® joist. Trus Joist Corporation now manufactures a variety of engineered lumber products for structural framing and industrial applications.

In 1999, Trus Joist built their third TimberStrand® LSL plant in Kenora, Ontario.

TJ International was purchased by the Weyerhaeuser Company in January 2000, and became Trus Joist, A Weyerhaeuser Business.

### The Requirement:

Trus Joist had purchased two new Fluidized Bed Combustor (FBC) burners from Energy Products of Idaho to meet their process heat requirements. The chief engineer for EPI created an elaborate, but complex and difficult to troubleshoot, control scheme to control these burners. Unfortunately, the engineer died before he was able to finish making this control scheme work. Subsequent EPI representatives made some progress on gaining control of the burners, but

control was never satisfactory.

Hinz was called in to assist in getting satisfactory control of the burners.

### The Design Solution:

The following control modifications were made:

- All generic subroutines were replaced with functionally-compatible inline code, allowing local display of all variables for maintainability.
- Analog PLC code was streamlined such that PID loops executed 4 times as often, yet overall scan time was dramatically less.
- All PID loops were re-tuned; all input module filtration reviewed. Controllability was markedly improved.
- Control scheme was simplified where practical and corrected where necessary.

- Communications problems were resolved.
- Communication performance was improved.
- Signal quality checking (watchdog function) was made to work.

The end result was a highly controllable pair of burners.



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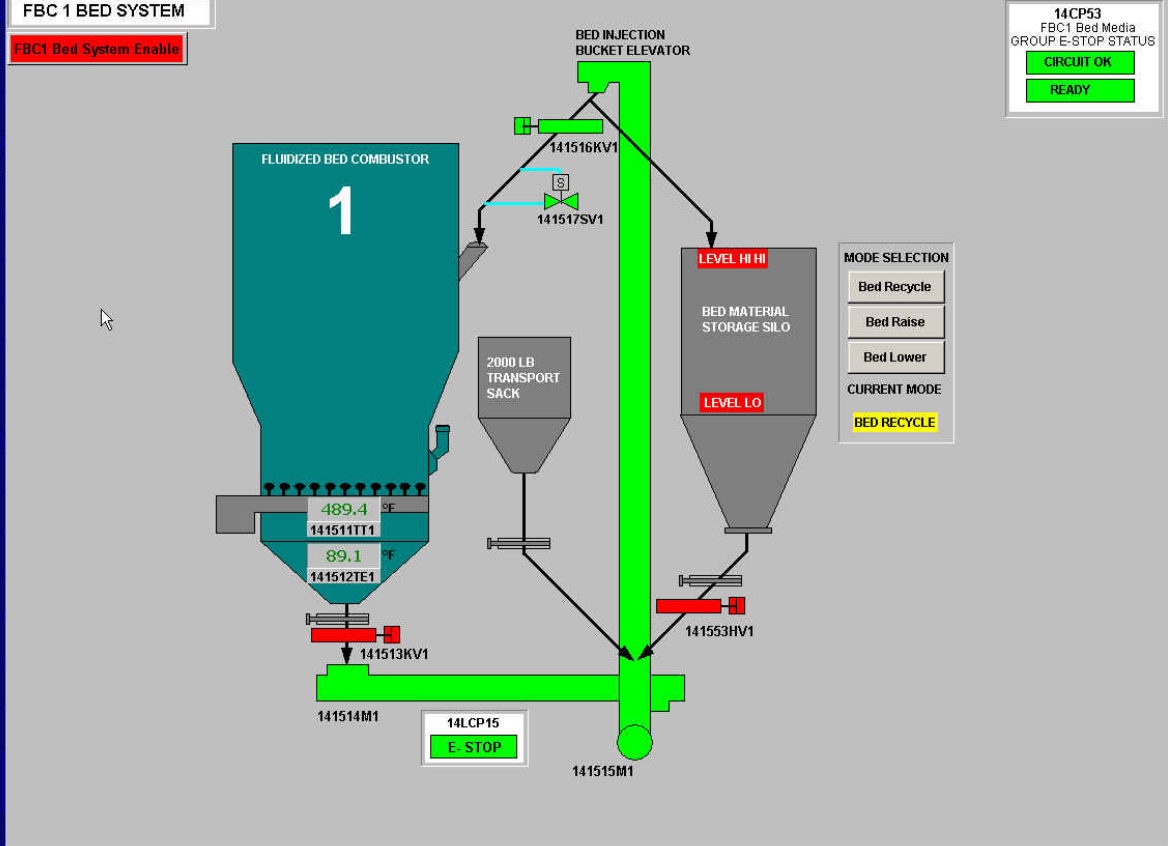
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Plant Overview	Green End	Green Strand	Blending	Drying	Forming	Pressing	Recipe	Energy System	Product Line
Emission Cntrl	Dust Collection	Power Status	Trending	Alarms	Spare	PC Network	PLC Network	Login-F2	SAFETY FIRST!

Overview
Wet Fuel Storage and Distribution
Dry Fuel Storage and Distribution
FBC1
FBC2
Fuel Metering
FBC Lower and Upper Section
NFPA Gas Train
Ash System
Bed System
TF Heater
Gas Fired Heater
TF Primary Loop Pumps
TF Secondary Loop Pumps
TF Building Heat Loops
TF Log Pond
Heat Dump Radiators
Ash Storage&Unloading
E-STOP



14CP53  
FBC1 Bed Media  
GROUP E-STOP STATUS

CIRCUIT OK

READY

	Ack	Date Last	Time Last	Time In	Description	Tagname	Status	Value
FBC1 MFT Reset	1	9/10/02	11:24:06.856	11:24:06.856	FBC1 Fluidizing Air Plenum Temp Hi	O141431TE1_AH	CFN	CLOSE
FBC2 MFT Reset	2	9/10/02	11:22:11.672	11:21:53.657	EFB Ash Storage Bin Level LL	S148400LVSL1	CFN	CLOSE
	3	9/10/02	11:22:11.672	11:21:53.657	EFB Ash Storage Bin Level Hi-Hi	S148400LVSH2	CFN	CLOSE
	4	9/10/02	11:22:11.672	11:21:53.657	EFB Ash Storage Bin Level Hi-Hi	S148400LVSH1	CFN	CLOSE
	5	9/10/02	11:22:11.672	11:21:53.657	EFB Ash Storage Bin ~ Level Switch - Hi	S148400LVSH2	CFN	CLOSE

## System Specifications:

- Allen-Bradley ControlLogix
- iFix

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

[www.hinz.com](http://www.hinz.com)