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Choosing and Using Kiln Controllers



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Presentation Objectives

- Highlight some of the details that will determine how well a control system matches your needs
- Answer questions about our kiln control upgrade project
- Have you awake for the next presentation

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Presentation Topics

- The controls that we replaced
- Details important to us
- The controls we installed
- Did it produce the expected results?
- What details did we fail to address?
- Modifications made to achieve objectives
- What would we do differently?



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The controls that we replaced

- Nine kilns with capillary tube chart controllers, mechanical fan reversing timers, poor air circulation, and generally leaky construction.
- Drying partially air dried hardwoods with modest amounts of eastern white pine



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Details important to us

- Increase speed of drying
- Data logging, reliable temperature measurement and capable of using variable speed circulation fans was required.
- Improve quality of drying – control of kiln conditions

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The controls that we installed

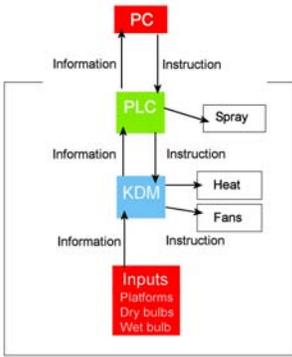
- We selected the SII Sample Watch system, completing installation in batches over 3 years.
- Control room PC on network with individual kiln PLC equipped controls.
- 4 sample platforms in each kiln with front and rear RTD dry bulbs, rear RTD wet bulb.
- Initially no variable frequency drives on any kiln circulation fans.
- Separate PC with digital scale using Excel spreadsheets to track samples by weight.

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How it works (more or less)



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Did it produce the expected results?

- Yes and No – depends on who you ask.
 - We did cut drying time
 - We had more information
 - We still had a spraying problem
- We needed to learn how our kilns worked.

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Modifications made to achieve objectives

- Control spraying at inopportune moments
 - Programming change from SII – depression control average front and rear dry bulbs
- High EMC – reaching wet bulb set point
 - Reverse flow power vents in each vent every kiln

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Modifications made to achieve objectives

- Better conditioning
 - Installed a larger spray valve & feeder to boost spray capabilities
- Heat –
 - Installed additional steam heat radiation in several kilns

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What details did we fail to address?

- Kiln alarms to protect lumber.
- What happens when a sample falls off the platform
- Equipment failure – what does the operator need to know
- Future flexibility (energy management, smarter alarms).

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What would we do differently?

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