

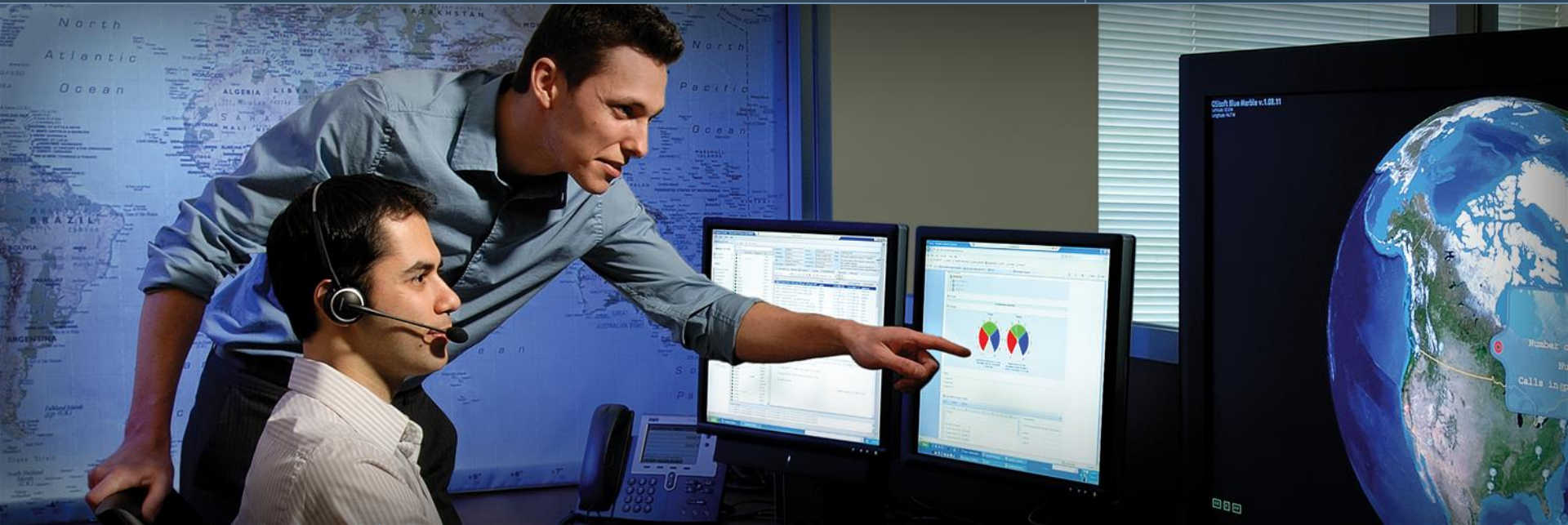


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Cincinnati

APPLETON

What Ideas Can Do™



Appleton Smart Web Trimming Project

Eric Huggins
Quality Manager, Thermal
Appleton

October 7, 2009

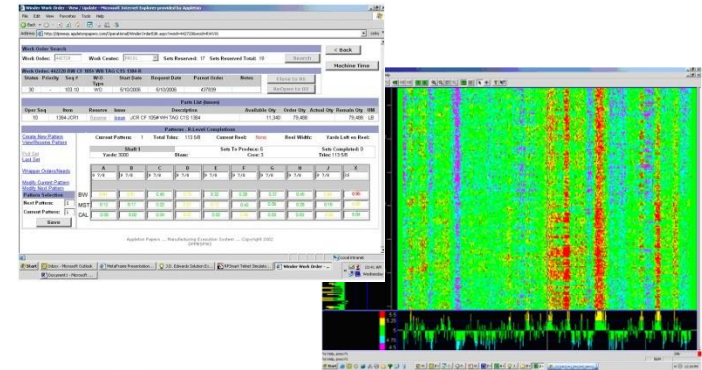
Empowering Business in Real Time.

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The Challenge: Reduce customer complaints at three paper manufacturing locations

Consistent web stability when paper is being processed is a requirement for making a quality finished product regardless of the type of converting equipment used. Many tools are helpful in reducing web variation, but we need a concise way of identifying when specific paper is at risk for below benchmark performance.

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What Ideas Can Do™



Customer Business Challenge

- Provide winder operators with live process information about the quality of the web being trimmed
- Give winder, paper machine and coater operators a prediction of how their product will perform for customers
- Turn complaints into internal scrap and internal scrap into good product

Solution

- Integrate high resolution QCS scanner information with MES web cut selection program
- Make a go/no-go determination for each proposed roll before it is cut
- The system will have access to all data so cut pattern changes will result in live updates to predicted results

Customer Results / Benefits

- Significant improvement in customer satisfaction through reduction in complaints
- A quantum step improvement in “runnability” of Appleton products when converting
- Reduction in internal scrap through more precise selection of at-risk product for internal rejection

Appleton Smart Web Trimming Project

Appleton Plant - Wisconsin

Roaring Spring Mill - Pennsylvania

West Carrollton Mill - Ohio

Appleton West Carrollton Mill



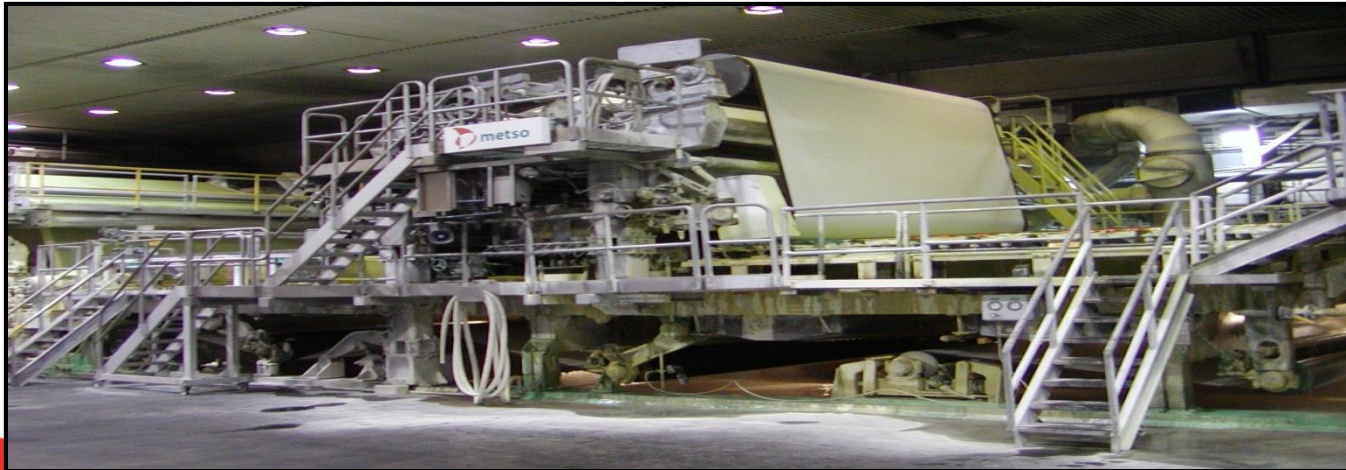
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Appleton West Carrollton Mill

- Total of 441 Employees at the Mill.
 - 337 Hourly and 100 Salary
 - Hourly workforce represented by the United Steel Workers International Union (USW - Local 266).
 - Shift employees work Southern Swing Schedule
- Recycle Plant (65% of the fiber supply for the Mill)
- Materials Prep (Coatings/Additives) / Receiving
- Three Paper Machines : No. 91, No. 92, & No. 93 (Average 600 tons/day)
- Off Machine Coater : CM 95

PAPER MACHINES

	<u>#91 Paper Machine</u>	<u>#92 Paper Machine</u>	<u>#93 Paper Machine</u>
Trim	115 inches	162 inches	138 inches
Speed	1100	2700	2750
Tons/Day	90	250	225
Tons/year	32,000	90,000	82,000
Coater	Billblade	Billblade	Twin HSM / Flexo
Products	Lightweight CF Heavyweight CF Recover CF Carbonless Basestock	Lightweight CF Thermal Basestock Thermal Label Carbonless Basestock	Premium CB Recover CB Superior CB CFB



Appleton West Carrollton Mill

- Water Supply / Treatment
 - 100% of water supply comes from deep wells located onsite.
 - Roughly 7 million gallons fresh water produced daily.
 - Water is softened prior to use.
 - Wastewater treatment plant is located offsite. 100% conformance to NPDES discharge permit limits.
- Energy
 - A steam driven turbine generator provides about one third of the Mill's electrical power.
 - Two coal fired boilers provide steam for recycle plant and paper machine process.

PI System Footprint

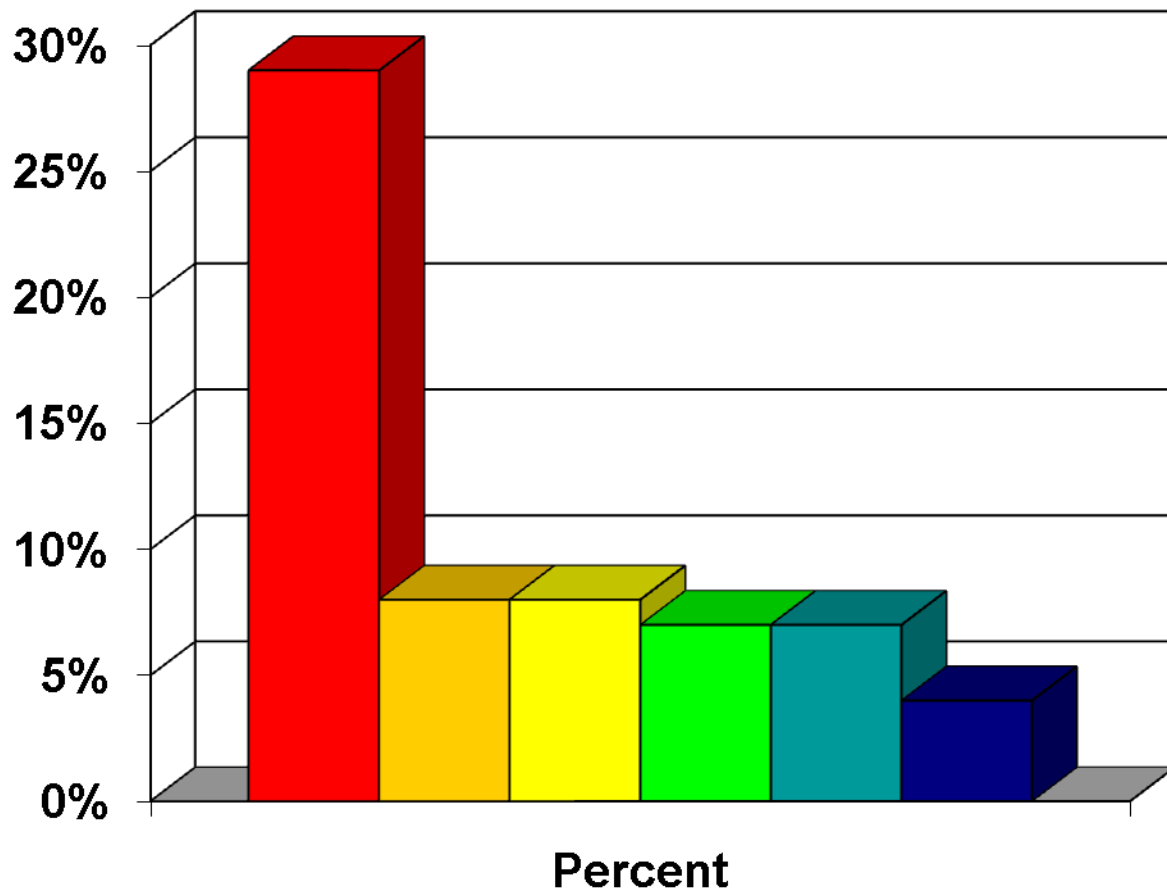
- 6 Manufacturing Locations with PI Across the Company
- 3 Main PI Servers
- 1 Development Server
- 1 PI Application Foundation Server
- 3 PI ACE Servers
- 135,000 tags Company Wide
- 40 Interfaces
- 525 Users

Increase Customer Satisfaction Through Complaint Reduction

- We must make a major reduction in the number of customer complaints.
- Any significant reduction in total complaints must reduce Baggy Roll & Throw Length complaints.
- Reducing Baggy Roll & Throw Length complaints will require a new tool for the paper machine, winder and coater operators.

Top Customer Complaints

Appleton West Carrollton Mill – All 3 Paper Machines

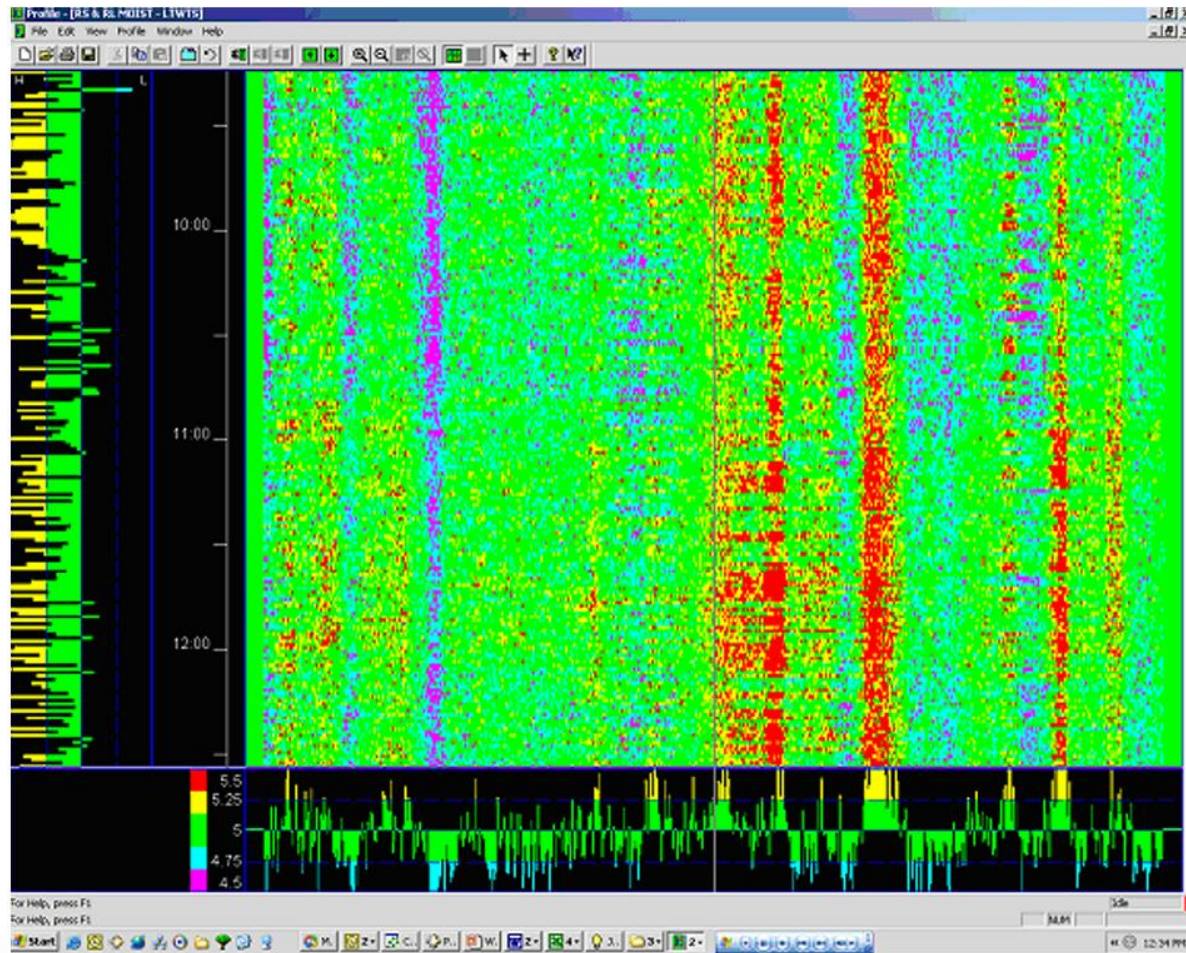


*Historically,
Baggy Roll &
Throw Length
complaints were
35 to 40% of
West Carrollton
Mill complaints*

- Baggy Rolls
- Throw Length
- Carbonless Image
- Coating Defects
- Off Size
- Printing Dust

Existing Tool – PI Profiler

When the reel's cross direction 2 sigma value is out of spec for moisture, weight or caliper, paper is scrapped based on an educated guess using PI Profiler (standard screen shown below)



Existing MES Winder Operator Screen

Winder Work Order - View / Update - Microsoft Internet Explorer provided by Appleton

File Edit View Favorites Tools Help

Back Address http://dpmesp.appletonpapers.com/Operational/WinderOrderEdit.aspx?woid=442720&wcid=RW191 Links »

Work Order Search

Work Order: 442720 Work Center: RW191 Sets Reserved: 17 Sets Reserved Total: 19 Search

< Back Machine Time

Work Order: 442720 RW CF 105# WH TAG C1S 1384-R

Status	Priority	Seq #	W/O Type	Start Date	Request Date	Parent Order	Notes
30	-	103.10	WO	5/10/2006	5/10/2006	437839	

Close to 85 ReOpen to 80

Parts List (Issues)

Oper Seq	Item	Reserve	Issue	Description	Available Qty	Order Qty	Actual Qty	Remain Qty	UM
10	1384-JCR1	Reserve	Issue	JCR CF 105# WH TAG C1S 1384	11,340	79,488		79,488	LB

Patterns - R-Level Completions

Create New Pattern View/Reserve Pattern

Pull Set Last Set

Wrapper Orders/Needs

Modify Current Pattern Modify Next Pattern

Pattern Selection

Next Pattern: 2

Current Pattern: 1

Save

Current Pattern: 1 Total Trim: 113 5/8 Current Reel: None Reel Width: Yards Left on Reel:

Shaft 1

Yards: 3000 Diam: Sets To Produce: 6 Core: 3 Sets Completed: 0 Trim: 113 5/8

A	B	C	D	E	F	G	H	J	K
9 7/8	9 7/8	9 7/8	9 7/8	9 7/8	9 7/8	9 7/8	9 7/8	9 7/8	8 3/4

X

16

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Local intranet

Start Inbox - Microsoft Outlook MetaFrame Presentation... J.D. Edwards Solution Ex... RFSmart Telnet Simulato... Winder Work Order - ...

Document1 - Microsoft ...

10:41 AM Wednesday

The Solution – A New Tool

- Create program that will bring existing scanned paper web data into existing screens that the winder operators use to cut roll sets.
- Bring Basis Weight, Moisture and Caliper data in 600 cross machine data box form together with specification limits to tell winder operators exactly which rolls cannot be shipped.
- Data is live so a change in roll cut order can result in elimination of scrap by putting narrower rolls in areas of greatest variation in the web.

New MES Winder Operator Dashboard

Winder Work Order - View / Update - Microsoft Internet Explorer provided by Appleton

File Edit View Favorites Tools Help

Back Address http://dpmesp.applonpapers.com/Operational/WinderOrderEdit.aspx?woid=442720&wcid=RW191 Links

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Create New Pattern View/Reserve Pattern Pull Set Last Set Wrapper Orders/Needs Modify Current Pattern Modify Next Pattern Pattern Selection

Current Pattern: 1 Total Trim: 113 5/8 Current Reel: None Reel Width: Yards Left on Reel:

Shaft 1 Yards: 3000 Diam: Sets To Produce: 6 Sets Completed: 0 Core: 3 Trim: 113 5/8

	A	B	C	D	E	F	G	H	J	X
9 7/8	9 7/8	9 7/8	9 7/8	9 7/8	9 7/8	9 7/8	9 7/8	9 7/8	9 7/8	16
BW	0.64	0.61	0.45	0.75	0.32	0.29	0.37	0.45	0.86	0.95
MST	0.12	0.17	0.22	0.67	0.72	0.42	0.35	0.28	0.19	0.88
CAL	0.05	0.02	0.04	0.07	0.02	0.09	0.03	0.03	0.08	0.04

Save

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Benefits

- The system now takes the guess work out of culling at risk product from good production allowing new operators to quickly do this task as well as experienced operators
- Initial episodes have shown potential to cut scrap significantly – representative case resulted in 1 ton lost instead of 8
- Roll 2 sigma values are archived for future comparison to complaint results

Other Significant Tools – Process Book



95 COATER's PROCESS BOOK - MAIN MENU

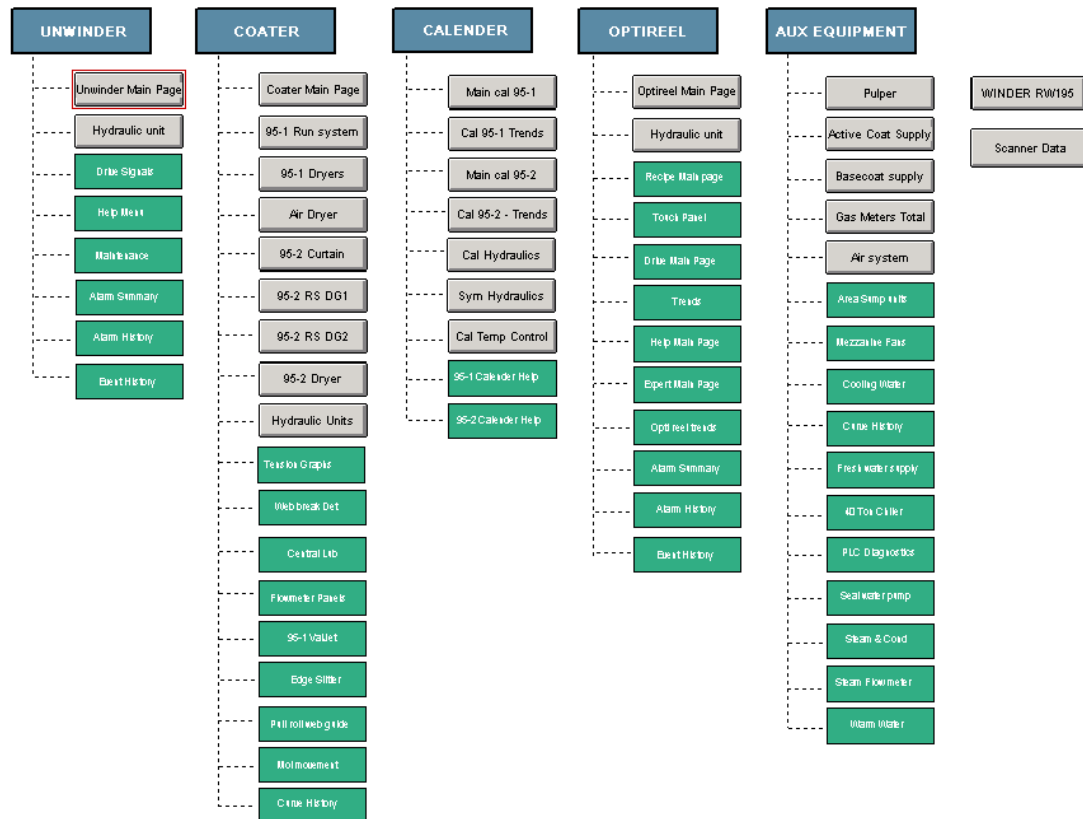
TIME TO SPLICE 8 : 20 : 0
MACHINE STATUS

COATER SPEED 233 fpm
Reel Width 0 Inch
Making Master N/A

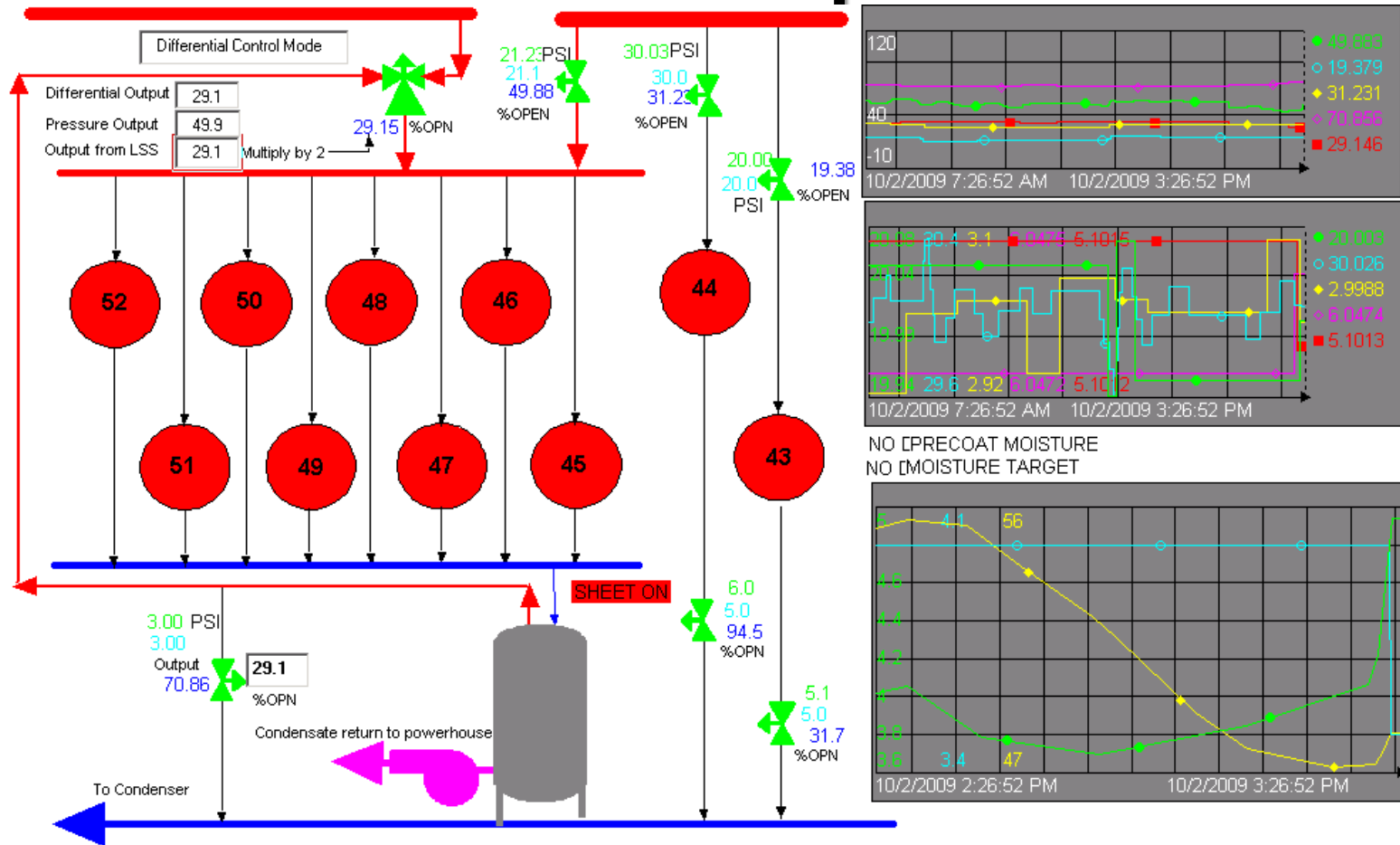
Reel Weight 0 lbs
Reel Length 0 yard

Previous reel length 558 yard
Previous reel weight 214 lbs

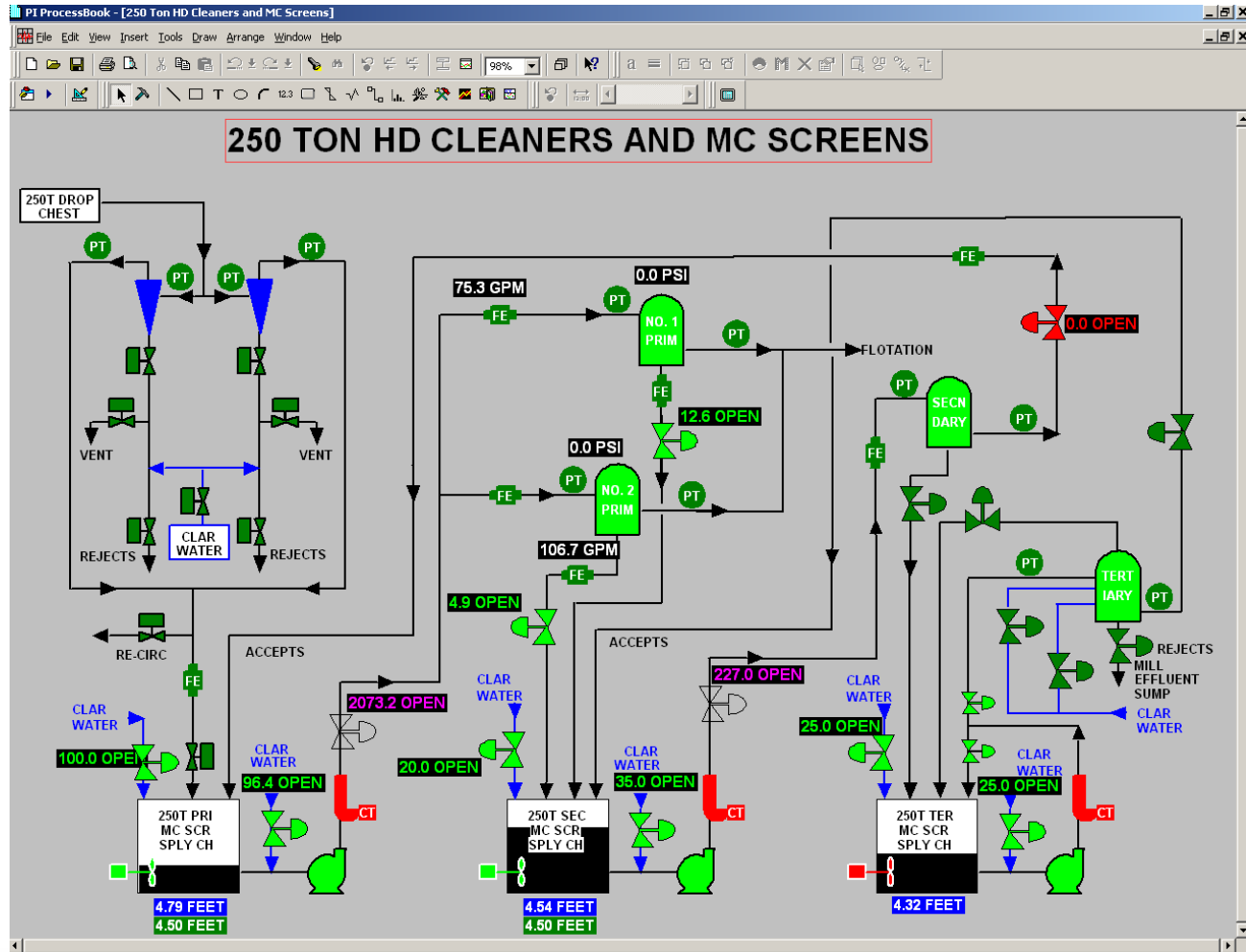
Natural Gas Flows
Under Range 
204.816 



DCS Emulation Puts Window on Every Desktop



Process Books in Use in All Areas





Thank you

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