



OSIsoft®
**REGIONAL
SEMINARS** 2012
The **Power** of **Data**



At Kellogg, Savings are in the Air!

Presented by **Michael Thomas**
Controls Engineer - Lancaster Plant



Kellogg Company



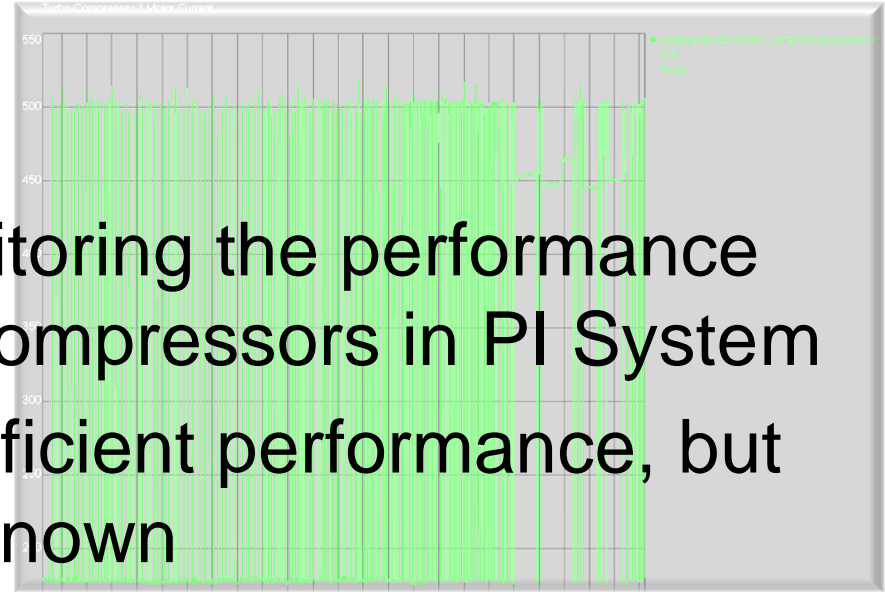
- Kellogg's history
 - Kellogg Company started in 1906 as the “Battle Creek Toasted Corn Flake Company”
 - Production facilities in 18 countries with product distributed in more that 180 countries
 - Lancaster, PA plant dates back just over 35 years
 - Products include:



- Control Engineer at the site for 15 years
- Working with OSIsoft and PI System for 13 years

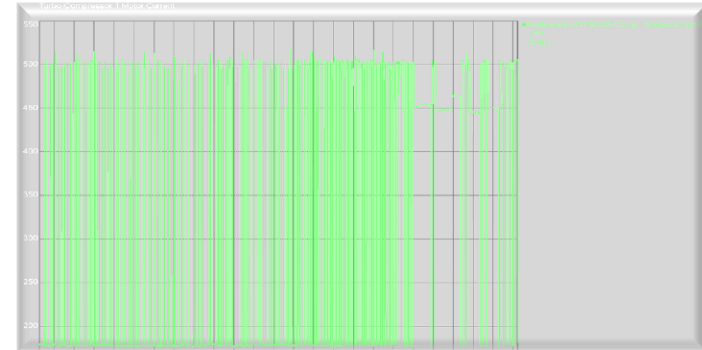
Project History

- In 2005, we began monitoring the performance of our 4 centrifugal air compressors in PI System
- We knew there was inefficient performance, but to what degree was unknown
- After reviewing historical data and performing some crude calculations, it appeared to be well over 1MM kWh of waste

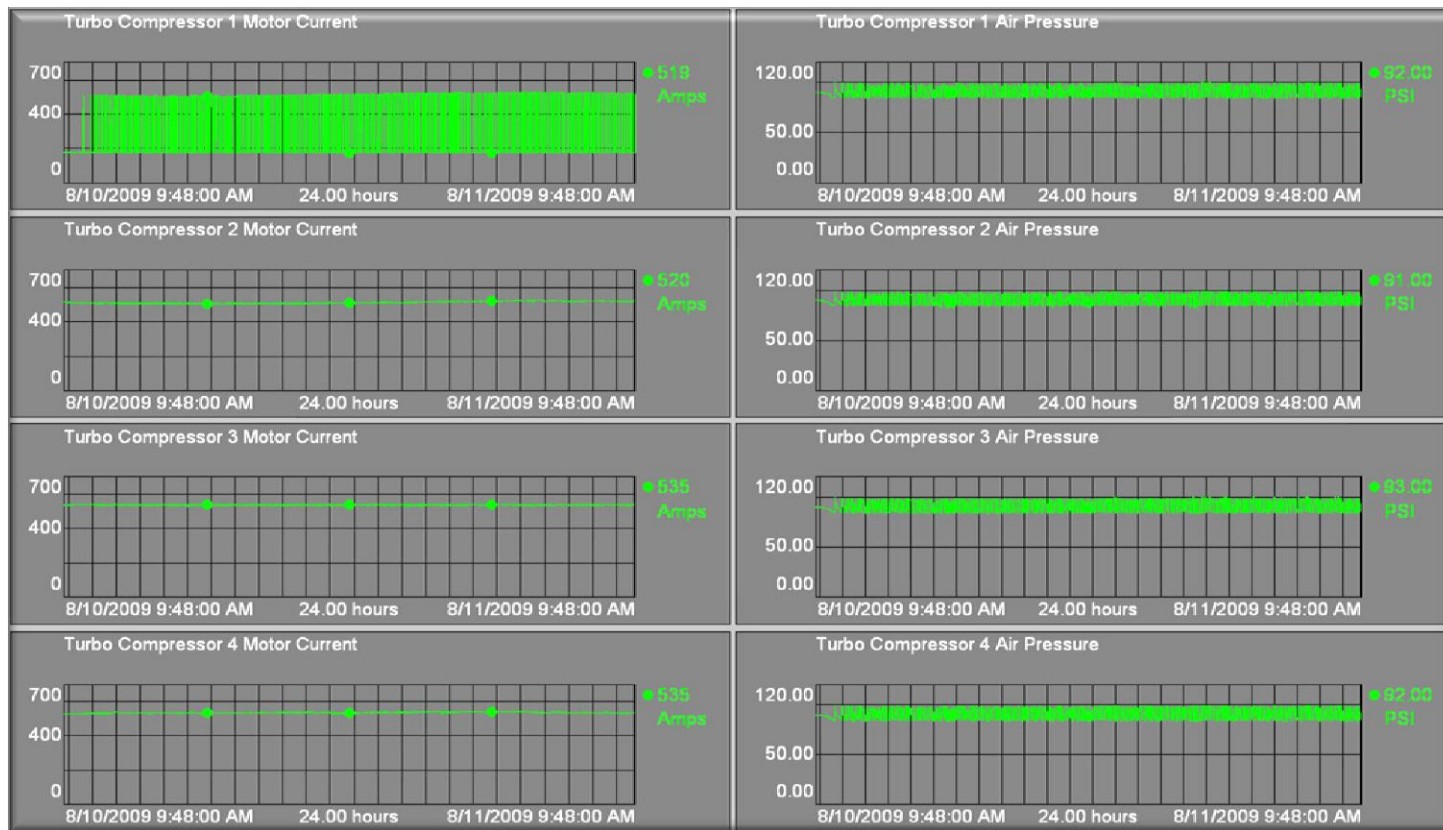


Project History

- We began implementing internal strategies to minimize wasteful compressed air consumption
- Although our conservation efforts proved valuable, it did not return the results that we knew were available



Compressor Performance Pre-Upgrade...

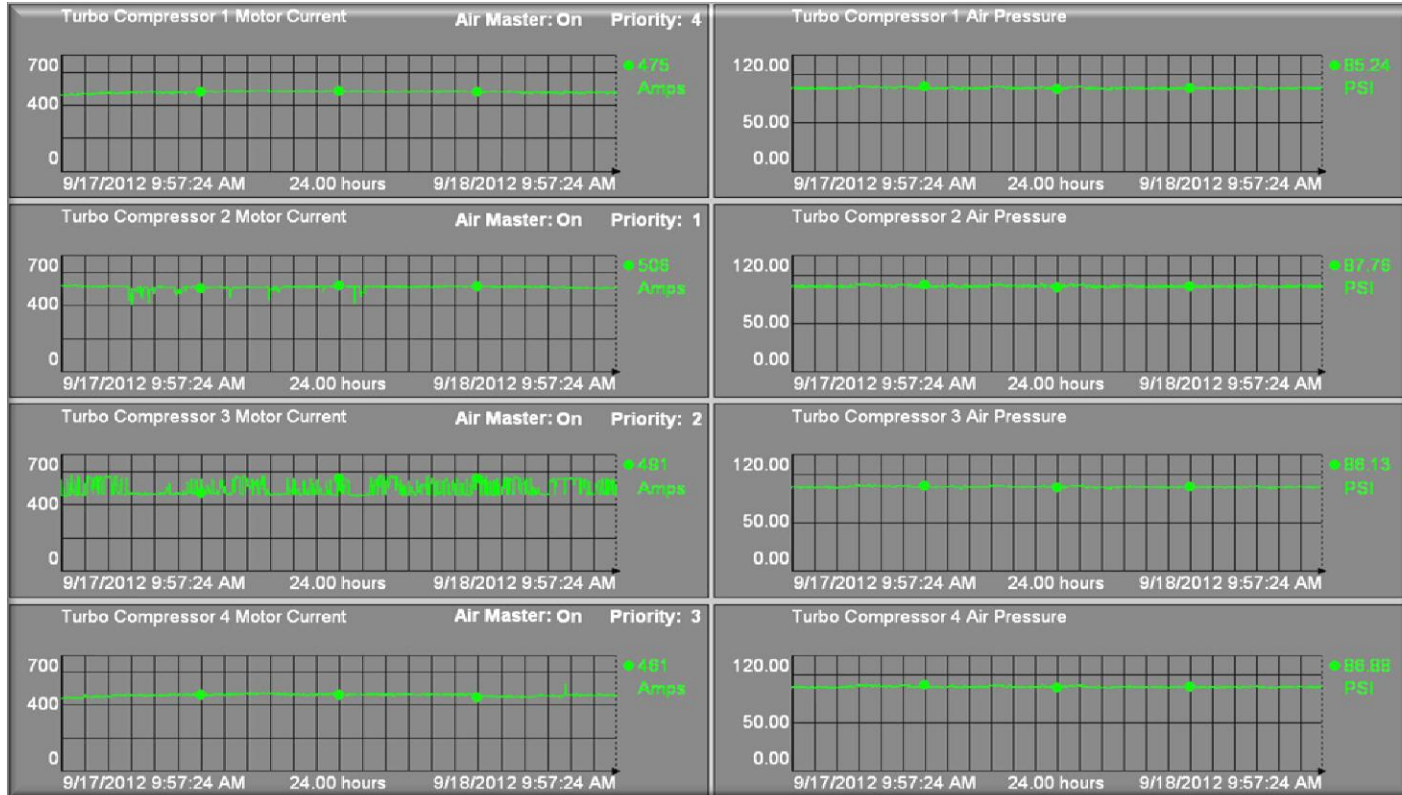


Project History



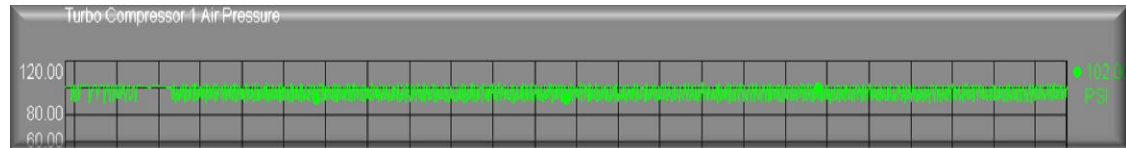
- The data drove us to start looking for better compressor control technologies
- In 2009 we were introduced to “Case Engineering” through our local service company, Cummins-Wagner, specializing in air compressor controls
- A new control system was implemented in early 2010 and the savings was immediate

Following the control upgrade...

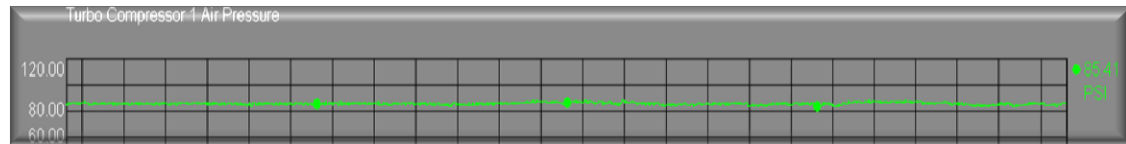


But Wait...
**THERE'S
MORE!**

BEFORE



AFTER



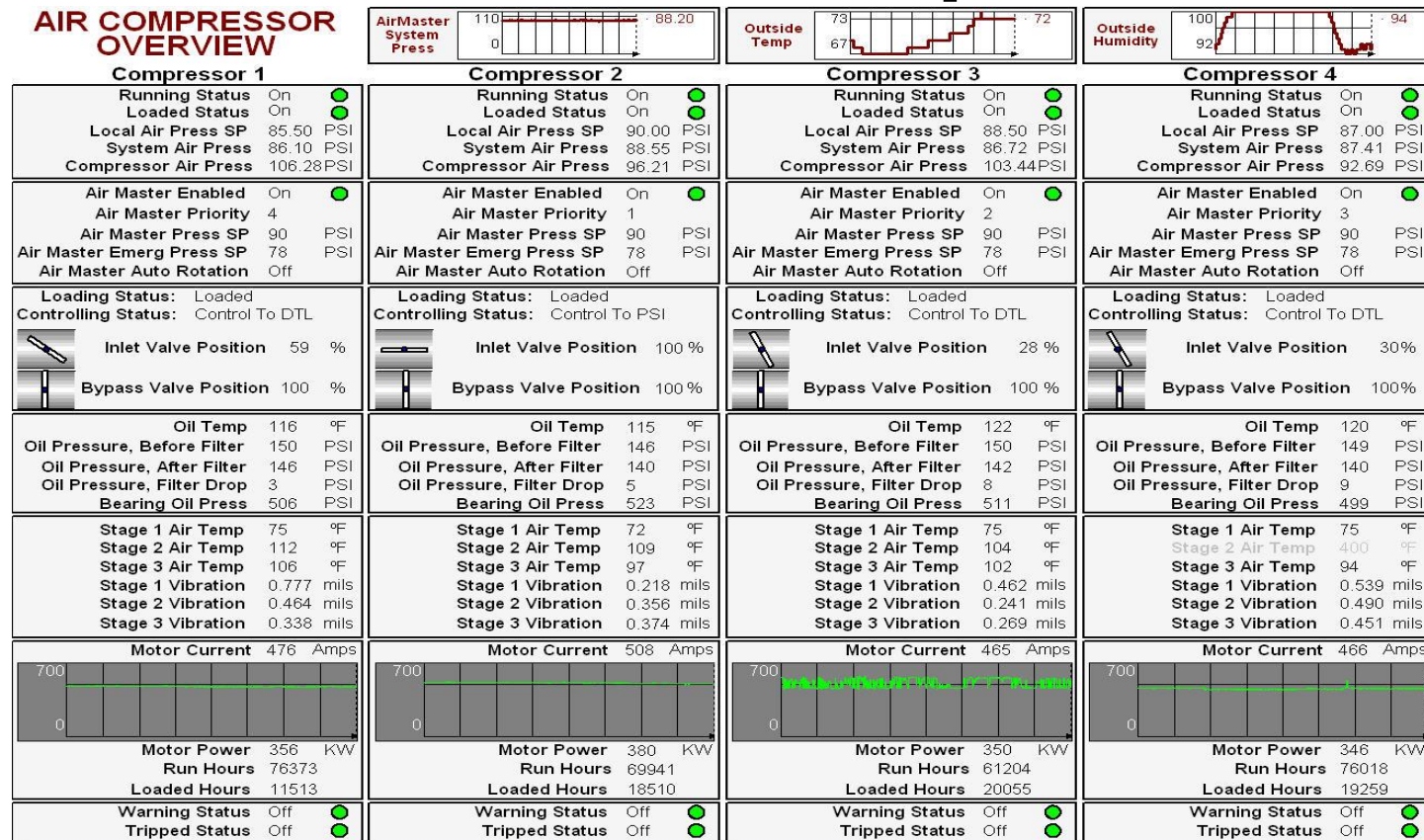
“...the story gets even better”

Additional room for improvement...

- The project success to this point was great but a closer look at the data showed there was room for improvement
- Compressor performance efficiency increased significantly on cold days but flow was restricted due to lack of output from our 500 HP motors

Additional room for improvement...

AIR COMPRESSOR OVERVIEW



More room for improvement....

- In conjunction with Cummins-Wagner, performance benefits of implementing 600 HP premium efficiency motors was evaluated, the potential was solid and the project moved forward
- This phase of the project was completed in early 2011



PPL Customer incentive program..

- During the motor upgrade design, we were made aware of customer incentives being provided through our local electric provider.
- We met with representatives of PPL and a third party company hired to analyze the system.



PPL Customer incentive program..

- They were shocked to say the least, they have never visited a company that had so much retrievable data.
- Due to the amount of data collected over the life of this project, PPL agreed to take into account all of the data since the Control System upgrade back in 2010. This decision resulted in a larger Incentive Program payout.

PPL Customer incentive program..

Left to Right:

Michael Thomas
Kellogg Company
Controls Engineer

Scott Reilly
PPL Electric Utility
Key Accounts Manager

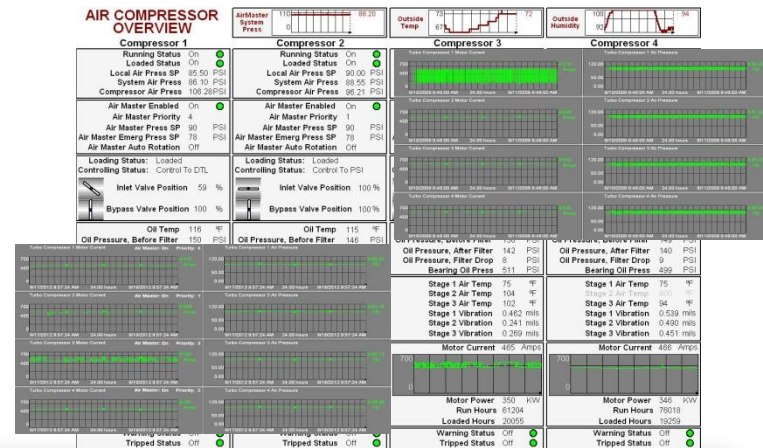
Timothy Fritz
Kellogg Company
Senior Manager, Engineering



At Kellogg, Savings are in the Air!

“It was a great day to have the PI System”

Michael Thomas - Controls Engineer - Lancaster, PA



Customer Business Challenge

- Corporate initiative to decrease carbon foot print.
- Site Goal: Conservation, optimization of resources, and cost control.

Solution

- Implemented Air Conservation program.
- Implemented Air compressor control technology upgrade.
- Leveraged the PPL customer incentive program.

Customer Results / Benefits

- **Final result was an energy reduction of over 2.5MM kWh/year and a customer incentive payback of over \$265k.**



THANK YOU

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