

Energy Management plus Superior Energy Performance

Cook Composites and Polymers Return on Experience

15th Texas Industrial Energy Management Forum
Achieving *Superior Energy Performance*
Thursday, April 7, 2011

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CCP at a Glance

- ▶ Celebrated 20 Years on February 9, 2010
- ▶ Operates in the Resins Division of the Chemical Branch of TOTAL, with its sister company Cray Valley
- ▶ CCP & Cray Valley are #2 producers of resin for coatings and composites applications in the world
- ▶ CCP is the world leader in the development and production of Gel Coat

CCP: Plants are considered Small to Medium Enterprise (SME)



CCP Houston Plant

- ▶ Relatively small size 36 Employees
- ▶ Manufactures and distributes coatings resins, structural resins, and gel coats



Return of Experience: Why Energy Management?

- ▶ Sustainability shifts our Vision to the pursuit of a *Triple Bottom Line*:
 - ENVIRONMENT
 - ECONOMIC
 - COMMUNITY / SOCIETAL
- ▶ Company wide Energy Efficiency Goal to reduce energy consumption 31% by 2019

Return of Experience: The Key Tools

▶ The Energy Management Standard (MSE2000:2008)

- Provided CCP with a reasonable and realistic approach to help identify existing opportunities in energy efficiency and improvement in energy intensity.

▶ Superior Energy Performance (SEP) introduced during Pilot

- Provided CCP the additional measurement tool so we could verify the specific energy intensity results.

Return of Experience: Initial Implementation

- ▶ Included a cross functional energy management team with a top down approach:

May 2008:

- VP Engineering & Loss Control
- CCP Houston Plant Engineer
- CCP NKC Plant Engineer
- CCP Chatham Plant Engineer
- 3rd Party Consultant
- Director Integrated Management Systems
 - Sept 2008



Return of Experience.- Alignment with Current Management Systems

► AIMS .- Advanced Integrated Management System

- This management system model integrates:
 - ISO 9001
 - ISO 14001
 - PSM (Process Safety Management)
 - Responsible Care
 - MSM (Modern Safety Management)
 - More...

► Current Management Systems Included:

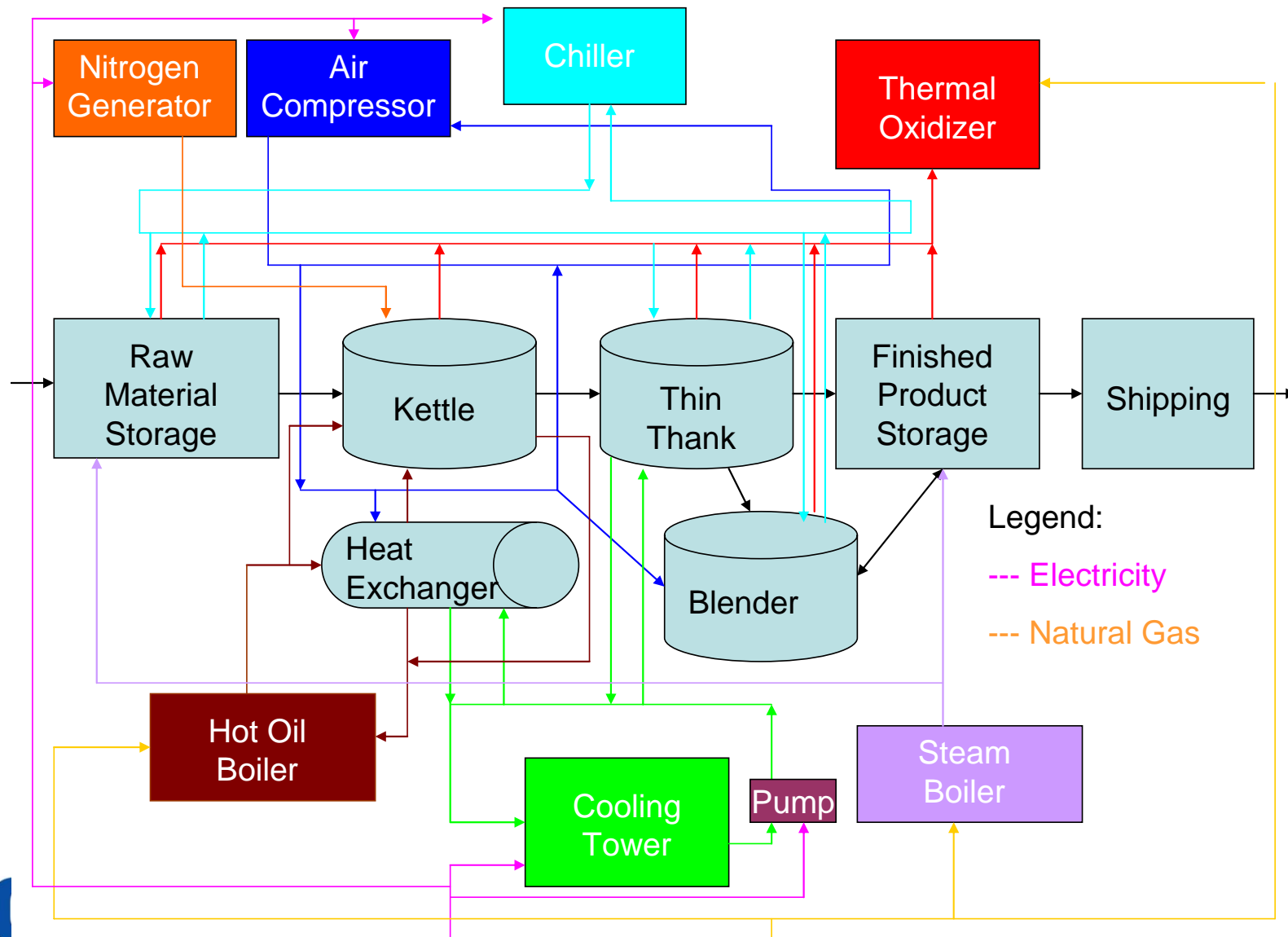
- Quality
- Safety
- Environment

Return of Experience.- Alignment with Current Management Systems

► Added Energy Management as a fourth element of the Management System

- Developed Manual
 - Energy and Environmental Manual
- Updated controlled documents
 - Policy, SP, PWI, references, etc
- Updated meeting content
 - Energy Management as a topic
- Trained employees
 - Energy Management System
- Appointed Energy Management Representative

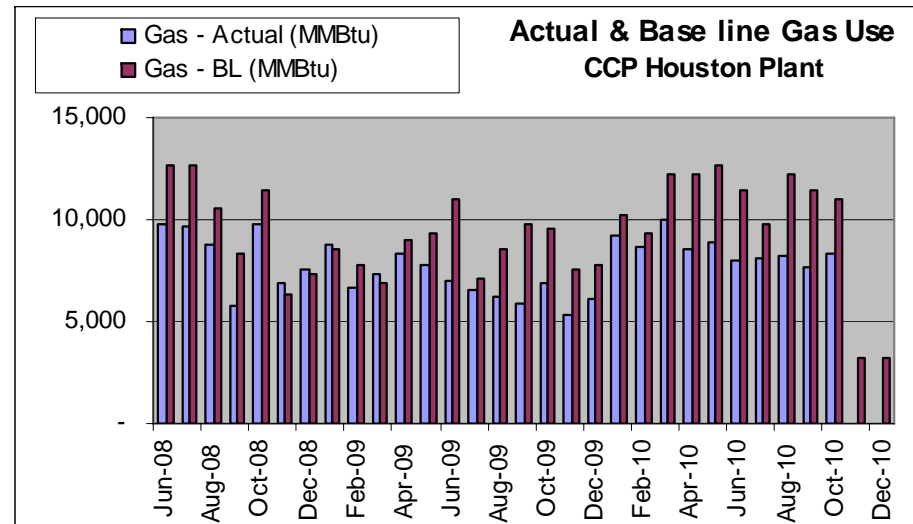
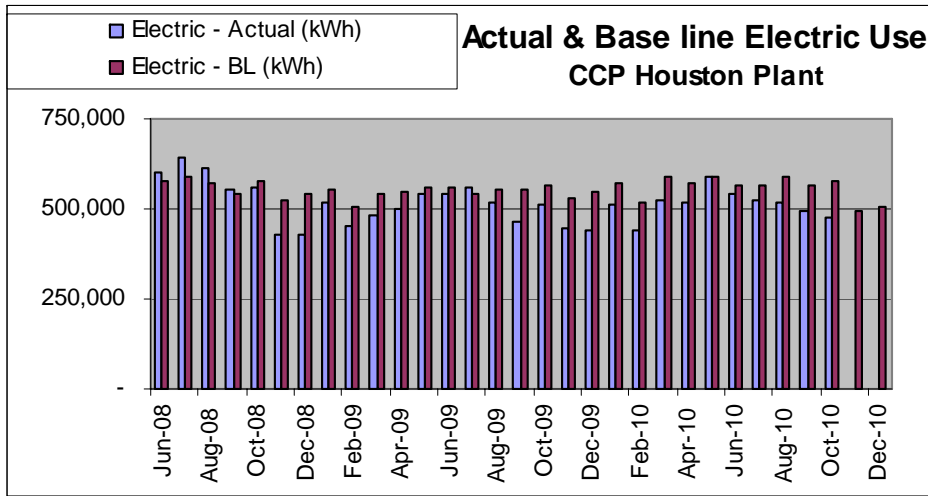
Return of Experience: Identification of Significant Energy Users



Return of Experience.- Development of KPI

- ▶ **Development of a baseline in conjunction with Georgia Tech University during the Texas Pilot Program**
 - Gas.- based on number of batches produced per month
 - Electricity.- based on number of batches and number of days in a month
- ▶ **Monthly evaluation of natural gas and electricity consumption vs. baseline calculation**
 - Goal: operate at or below **5%** of the baseline.
- ▶ **System assessments as part of the Texas Pilot Program**
 - Steam
 - Hot Oil Units
 - Electricity

Return of Experience.- KPI Tracking (BL vs. actual)



Return of Experience.- KPI Tracking

MONTH	ELECTRICITY USE (kWh)	ELECTRICITY	Elec KPI (%)	GAS USE (MMBTU)	GAS	GAS KPI (%)
Jan-10	510,377	\$ 35,363	-10%	9,187	\$60,556	-11%
Feb-10	439,273	\$ 29,501	-15%	8,718	\$54,398	-6%
Mar-10	522,110	\$ 30,117	-11%	10,005	\$55,288	-18%
Apr-10	517,927	\$ 26,759	-10%	8,508	\$39,729	-30%
May-10	589,623	\$ 29,898	0%	8,904	\$43,657	-30%
Jun-10	540,760	\$ 32,488	-4%	8,032	\$38,557	-30%
Jul-10	526,653	\$ 30,408	-7%	8,122	\$44,213	-17%
Aug-10	515,667	\$ 30,427	-12%	8,240	\$44,027	-33%
Sep-10	494,519	\$ 26,758	-13%	7,616	\$33,746	-34%
Oct-10	475,108	\$ 23,849	-18%	8,336	\$38,257	-24%

Return of Experience: CCP Houston meets criteria for **GOLD** Certified Partner with verified savings of **14.9%!**



Performance Characteristics		Silver	Gold	Platinum
El Pathway	Energy Intensity Improvement	Meets 5% energy intensity improvement threshold over the last 3 years.	Meets 10% energy intensity improvement threshold over the last 3 years.	Meets 15% energy intensity improvement threshold over the last 3 years.
Mature Energy Pathway	Energy Intensity Improvement*	Demonstrates an energy intensity improvement of 15% or more over the last 10 years.	Demonstrates an energy intensity improvement of 15% or more over the last 10 years.	Demonstrates an energy intensity improvement of 15% or more over the last 10 years.
	Score on Best Practices Scorecard <i>Includes credits for energy management best practices and energy performance beyond the 15% EI improvement over the last 10 years.</i>	<ul style="list-style-type: none"> Meets a score of at least 35 and up to 60 out of 100 total points for Best Practices Scorecard Minimum of 25 points required for the energy management best practices. 	<ul style="list-style-type: none"> Meets a score of at least 61 and up to 80 out of 100 total points for Best Practices Scorecard Minimum of 25 points required for the energy management best practices and 10 for energy performance. 	<ul style="list-style-type: none"> Meets a score of at least 81 out of 100 total points for Best Practices Scorecard Minimum of 25 points required for the energy management best practices and 10 for energy performance.

Return of Experience: Success for CCP Houston!

CERTIFICATE

Certificate Number: **EnMS 001**

The Energy Management System of:

Cook Composites and Polymers Co

2434 Holmes Road

Houston, TX 88051

Including its implementation, meets the requirements of the standard:

ANSI MSE 2000:2008

Superior Energy Performance

Gold Certified Partner

Scope:

The manufacture and distribution of coatings resins, structural resins, gel coats and putties.

This Certificate is valid until: September 20, 2013

This Certificate is valid as of: September 20, 2010

Certified for the first time: September 20, 2010

H. Pierre Sallé

President

KEMA-Registered Quality



Return of Experience: External challenges

During and after implementation:

- Hurricane Ike September 2008
- Economic downturn later 2008
- Reorganization spring 2009
- Continued economic challenges through the March 2010 audit

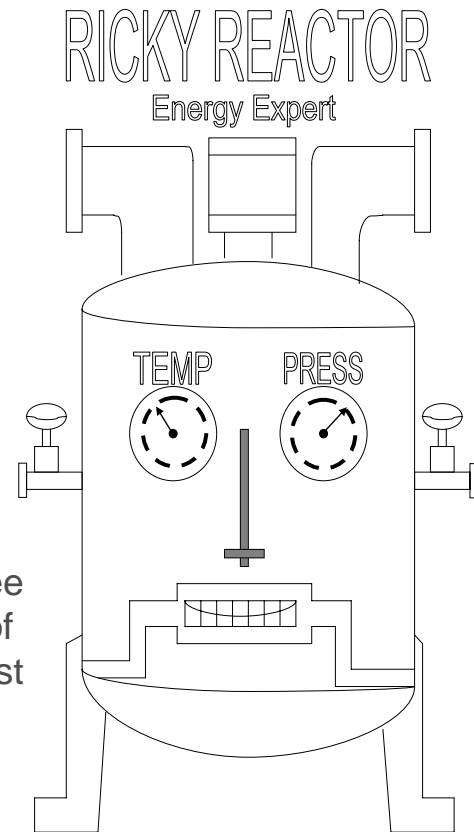
Return of Experience: Initial Challenges during implementation

- Initial start up without management system team involvement.
- No specific energy key performance indicators or foundation of energy management systems to benchmark against.
- Existing responsibilities and roles to maintain in addition to the Texas Pilot Project.
- Distance between energy team members
- Resistance by management representatives from other disciplines, i.e., ISO9001

Return of Experience: Advantages for a SME and energy management

- Lots of opportunities to find cost savings without huge investments
- All employees can be included in the process of energy management and energy efficiency

CCP Houston production employee created Ricky Reactor as part of an internal energy contest



Uses Electricity, Gas, Water and Steam Efficiently

Return of Experience: Energy Management is not just for Engineers

- All employees have resources and talents to improve energy efficiency.
- Line or Production workers have the knowledge and ideas to use less energy as they produce. Ask them.
- The structure of managing energy is similar to the structure to manage safety, health, environment and quality. Therefore, other non-engineer personnel can be involved and can provide valuable input and resources such as time, utility invoice review, data collection, document creation and more.

Return of Experience: Next steps for CCP

