2015 Kansas Environmental Conference

Proactive Approach to Sustainability Issues
Ron Sturgeon

Quality System Manager
Environmental Coordinator

- Been with Osborne for 20 years
  - Quality Department - 13
  - RIM Production Manager - 7
  - Environmental Coordinator – 8

- Responsibilities include
  - Manage and maintain Osborne's ISO 9001:2000 Quality Management System
  - Hazardous Waste management and disposal
  - State and Federal Reporting
Our Company
Located in Osborne, Kansas
Employee between 90 – 100 people
Our headquarters includes 242,000 sq. feet of manufacturing, warehouse and office space sitting on 10.5 acres in the Osborne Industrial park.
We are 100% Employee-Owned.
Livestock Management Equipment

The Osborne-branded line of livestock equipment is marketed and distributed all over the world. Equipment includes:

- Big Wheel® Feeders
- Stanfield® Heat Pads
- ACCU-ARM® Scales

Osborne is a leader in radio frequency identification (RFID) of individual animals with products such as:

- FIRE®
- TEAM®
- Weight Watcher™
Custom Molded Thermoset Plastics

Osborne molds a wide array of custom molded thermoset plastics for more than 30 leading OEMs (original equipment manufacturers) in the U.S.A.

Processes include:

- Engineered RTM FRP composites
- RIM Elastomers
- Structural Foams
Resin Transfer Molding (RTM)

- Styrene based resins
- Resins kept in closed environment as much as possible
- Low emissions spray equipment
- Closed mold system
- On-site bulk storage tanks
Reaction Injection Molding (RIM)

- Urethane & pDCPD materials
- Material arrives in 55 gallon drums
- Closed mold system
- Limited liquid exposure
- Air sensitive materials
- Drum drainage volume
Rules affecting Osborne Industries

- MACT WWWW
- KDHE Class 1 Emissions
- EPA TRI
- TIER II
- Right-to-Know
- DOT
- Hazardous Waste

Training
- RCRA Hazardous Waste
- DOT
- Employee
- Webinars as available
- Kansas State PPI (Pollution Prevention Institute)
- Self
Items affecting Osborne

- Styrene emission from Gel Coating operations
- Drum drainage from RIM operations
- Material usage
- Solvent contaminated wipes
- Data acquisition, reporting and records
- Resources needed to meet requirements
Key items

1. Styrene Emissions (MACT)
2. Material recovery
3. Data acquisition and monitoring
### 1. Styrene Emissions (RTM)

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![Graph](chart.png)

- **Pounds emitted**
- **Methods**: Method 1, Method 2
What we changed

Spray Equipment

Atomized Spray vs Non-Atomized Spray

Since implementation Osborne has:
- Not been out of compliance.
- Significantly increased production output of aerial platforms to meet customer needs.
  - 2010 – Received Outstanding Supplier Award
  - 2015 – Received Consistency Award
- Installed new spray equipment in other application areas.
- Implemented the use of low hap Gel Coats when possible.
- Implemented several process improvements to increase efficiency.
2. Material recovery (RIM)

- Material arrives in 55 gallon drums.
- Pumped into process supply tanks.
- Exposure to oxygen renders material unusable.
- Excess pumping can create small bubbles.
- 2-3 inches of material remains in bottom of drum.
- Must be disposed of as Hazardous Waste.
The numbers

Previous drainage practices:
Material waste: 5%
- Total waste material: 14,455 lbs.
- Waste material costs: $28,187.74
- Waste disposal costs: $4,625.68
- Total Waste Costs: $32,813.42
- Cost of lost production: $27,290.31

$60,103.72

Current drainage practices:
Material waste: 0.5%
- Total waste material: 1,446 lbs
- Waste material cost: $2,818.77
- Waste disposal cost: $462.57
- Total Waste Cost: $3,281.34
- Cost of lost production: $2,729.03

$6,010.37
How we did it

Osborne designed and built two pumping units that allow leftover material to quickly be removed from drums and remain protected from exposure to oxygen. Material is then transferred directly into process supply tanks.
3. Data acquisition and monitoring

- In the beginning
  - Data printed and manually gathered numbers for all materials.
- Developed report to pull data from our Central Business Program
  - Monthly material use
  - Right-to-Know
- Developed various Excel® spreadsheets to process data
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## Monthly Emissions

<table>
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<tr>
<th>Month</th>
<th>RRP-2100 Usage lbs</th>
<th>RRP-2100 Usage tons</th>
<th>RRP-2100 Emissions lbs</th>
<th>RRP-2105 Usage lbs</th>
<th>RRP-2105 Usage tons</th>
<th>RRP-2105 Emissions lbs</th>
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<tr>
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</tbody>
</table>

### Total Emissions:
- **Jan-15**: 4649 lbs, 498 lbs
- **Feb-15**: 5060 lbs, 542 lbs
- **Mar-15**: 6373 lbs, 683 lbs
- **Apr-15**: 6420 lbs, 688 lbs
- **May-15**: 5649 lbs, 606 lbs
- **Jun-15**: 6846 lbs, 734 lbs
- **Jul-15**: 7154 lbs, 767 lbs
## Final Report

### INPUT DATA

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<tr>
<th>Facility Name: Osborne Industries, Inc.</th>
<th>Facility ID: 141023</th>
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<tr>
<td>Subpart WWWW Reinforced Plastics Composites Production</td>
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<table>
<thead>
<tr>
<th>Quantity Operation Material Used During Month</th>
<th>Operation Emissions During Month</th>
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<tr>
<td>(lbs)</td>
<td>(lbs)</td>
</tr>
<tr>
<td>White Gel Coat</td>
<td>Colored Gel Coat</td>
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<td>----------------</td>
<td>------------------</td>
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<tr>
<td>Jan-15</td>
<td>4649</td>
</tr>
<tr>
<td>Feb-15</td>
<td>5060</td>
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<tr>
<td>Mar-15</td>
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<td>Jun-15</td>
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<tr>
<td>Jul-15</td>
<td>7154</td>
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2015 ENVIRONMENTAL CONFERENCE
CHEMICAL PROCESSING, NON-DESTRUCTIVE TESTING, SHOT PEEN, MASK AND PAINTING OF AIRCRAFT PARTS AND COMPONENTS
APPLICABLE RULES AND GUIDELINES

Air Emissions Source Class I Operating Permit
- Subpart GG - Aerospace manufacturing and rework NESHAP
- Subpart N - Chromium electroplating and Chromium Anodize NESHAP
- Subpart T - Halogenated Solvent Cleaning NESHAP
- Subpart DDDDD - Major Source Boiler and Process Heater NESHAP

State Operating Permit Programs
- Air Emission Inventory

Hazardous Chemical Reporting: Community Right-to-Know
- Tier II Report

Toxic Release Reporting: Community Right-to-Know
- Toxic Release Inventory

National Pollutants Discharge Elimination System
- Effluent Guidelines and Standards, Electroplating Point Source Category,
  Anodizing Subcategory (Wastewater Discharge to POTW Permit)
- Storm Water Pollution Prevention Plan

Resource Conservation and Recovery Act
- Large Quantity Generator
APPLICABLE RULES AND GUIDELINES

Various Military and OEM Specifications
National Aerospace and Defense Contractors Accreditation Program

Occupational Safety and Health Administration
- Hazard Communication
- Chromium VI
- Dipping and Coating Operations
- Respiratory Protection
- Spray Finishing using Flammable and Combustible Materials
- Powered Vehicles, Vehicle Mounted Work Platforms
- Hearing Conservation
CHALLENGES

How to stay up to date on applicable rules:
- peers
- regulators
- conferences/seminars
- K-State PPI (Pollution Prevention Institute)
- consultants
ENVIRONMENTAL POLICY

3P is committed to preserve and promote a clean, safe and healthy environment where we do business. Employees who work with environmentally sensitive materials must comply with all environmental regulations and laws with respect to handling of those materials. Any employee who believes that there is or has been a violation must report it immediately to a member of management.
MANAGEMENT SUPPORT

Safety Committee

- members represent all departments in plant
- management attends all meetings, including the president of the company
- environmental issues are addressed by the safety committee
GOING BEYOND COMPLIANCE

Recycle solvents from paint operation.
   recycled 1600 gallons in 2014
   savings in new material and disposal costs - $5k

Reuse of chemical bath solutions in the treatment of process rinse water.

Inventory management of paints
   Reduced scrap paint by 5%

Painter training
   trained painters equal greater transfer efficiency – more paint on the parts and less overspray
LONG-TERM SUSTAINABILITY PROJECT

Problem/Opportunity

3P Processing needs to increase pure water capacity by 50% to comply with new customer specifications and to increase production.

Currently use 3.5 million gallons of water per month at a cost of $20k/month.

Option 1:
- buy new equipment to produce 1.75 million gallons more water per month
- cost $300k

Option 2:
- purchase equipment to recycle 50% of current water usage
- cost $450k
- save $10k per month on water purchase
CNHi Wichita Plant Overview

Troy Williams
Wichita EHSE Manager
Wichita, KS
KDHE Environmental Conference August 20, 2015

Contains confidential proprietary and trade secrets information of CNH Industrial. Any use of this work without express written consent is strictly prohibited.
Wichita Plant/Product Overview

Plant Facts

Labor Hours per Unit

<table>
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<tr>
<th>Dep't</th>
<th>Hours/Unit</th>
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<tr>
<td>Weld</td>
<td>12.7</td>
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<tr>
<td>Paint</td>
<td>4.4</td>
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<tr>
<td>Assembly</td>
<td>19.1</td>
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<tr>
<td><strong>TOTAL</strong></td>
<td><strong>36.2</strong></td>
</tr>
</tbody>
</table>

Products:
- 32 Models
- 54 Tech Types
- 99 Options
- 5346 Possible Configurations

Employees:
- 513 Site Employee
- 374 Mfg. Blue Color
- 55 Mfg. Salary
- 84 Other Salary

Credentials:
- ISO 9001: 2008 Registered
- ISO 14001: 2008 Registered
- OHSAS 18001: 2007 Registered
- Certified C-TPAT
- Certified to EC 2001/14/EC
- Certified to Brazil Sound Regulation
- ISO 50001: 2013 Registered
Wichita Plant Overview – Site Facts
Skid Steer and Compact Track Loaders

Weld
- 2 Shifts
- 36 Robots
- 4 Major Weldments
- 45 MIG Welders
- Automated M/H
- 2-4 Hour Buffer
- 30 Units/Shift

Paint
- 2 Shifts
- Blast
- 4 Stage Wash
- Thermal Set Acryl
- Three Colors
- <2 Hour Buffer

Assembly
- 2 Shifts
- 1 Line
- In ground tow
- Supermarkets
- Takt = 14.50 Min

Testing
- Manual EFT
- Water Test
- Sound Test
- 30 Units/Shift
# CNH Industrial Local Historical Events

## Skid Steer and Compact Track Loaders

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1959</td>
<td>Davis Mfg. Established in Wichita</td>
</tr>
<tr>
<td>1968</td>
<td>J.I. Case buys Local Davis Mfg. Business – Operates as Davis</td>
</tr>
<tr>
<td>1974</td>
<td>Davis Business moves to new building on S. Hoover Road</td>
</tr>
<tr>
<td>1980</td>
<td>J.I. Case Brand Wichita production begins – trenchers/bores</td>
</tr>
<tr>
<td>1988</td>
<td><strong>Case Skid Steer Loader Production Begins (from Iowa)</strong></td>
</tr>
<tr>
<td>1995</td>
<td>ISO 9001 Quality System Certification</td>
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<tr>
<td>1999</td>
<td>CNH formed with consolidation of Case and New Holland</td>
</tr>
<tr>
<td>2001-02</td>
<td><strong>New Holland Skid Steer Loader production begins (from Penn)</strong></td>
</tr>
<tr>
<td>2002</td>
<td>Wichita Plant becomes sole source for SSL for CNH</td>
</tr>
<tr>
<td>2005-06</td>
<td>New Holland &amp; Case Compact Track Loaders (CTL) introduced</td>
</tr>
<tr>
<td>2009</td>
<td>Case Construction Equipment celebrates 40 years of manufacturing SSL</td>
</tr>
<tr>
<td>2011</td>
<td>ISO 14001 Environmental Certification</td>
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<tr>
<td>2011</td>
<td>OHSAS 18001 Safety Certification</td>
</tr>
<tr>
<td>2011</td>
<td>New Skid Steer Loader Model (SL-57) launches; New automated weld</td>
</tr>
<tr>
<td>2012</td>
<td><strong>Industry Week – Best Plant of the Year award (Awarded April 2013)</strong></td>
</tr>
<tr>
<td>2013</td>
<td>ISO 50001 Energy Management Certification</td>
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<tr>
<td>2013</td>
<td><strong>First U.S. CNH Industrial Plant to be Awarded WCM Bronze</strong></td>
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<tr>
<td>2014</td>
<td>FIAT Industrial Merges CNH, FPT and IVECO to Establish CNH Industrial</td>
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<tr>
<td>2015</td>
<td>Wichita Campus 100% ODS free</td>
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<tr>
<td>2015</td>
<td>Tier 4B Emissions System launched SSL/CTL (SL-49)</td>
</tr>
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</table>
2015 Inputs & Outputs

- **Electricity** – 2,883,800 kWh
- **Natural Gas** – 733,527 Sm3
- **Total Energy** – 39,750 GJ
- **Non-Hazardous Waste** – 46.7 tons
- **Hazardous Waste** – 1.8 tons
- **Air Emissions VOC’s** – 19,725 kg
- **CO2** – 3,522 tons
- **Wastewater** – 7.15 1000m³
- **Steel Recycling** – 27.63 tons
- **Packaging Waste** – 330.1 Tons
- **Noise** – 65 dBA
- **Water Input** – 7.15 1000m³
Wichita’s EHSE Policy  
(combined Safety, Environment and Energy)

As a leader in the agriculture and construction equipment businesses, CNH is committed to the following:

- Collaborate to **Prevent** illnesses, injuries, and pollution, reduce energy use, and improve efficiency;

- **Comply** with legal requirements and other requirements;

- Create objectives and targets and achieve improved health and safety performance, prevent pollution/waste and reduce energy use; and

Continue to **Improve** in Environmental, Health, Safety and Energy Management.
Environmental and Energy Team
2015 Environmental Objectives and Targets

Recycling
- Increase overall facility recycling to more than 91%

Green House Gases
- Reduce overall facility energy consumption by 5%
2015 Energy Objectives and Targets

**Electricity**
- Reduce baseline Electricity consumption by 1%

**Natural Gas**
- Reduce baseline facility Natural Gas consumption by 1%

**Significant Energy User**
- Reduce electricity consumption on Weld Fume Extractor #2 by 2%
Wood Refuse

PROBLEM DEFINITION
What: Wire harness shipped in on wood pallets.
When: Parts receiving.
Where: Material Logistics.
Who: 3PL
Which: Pallets from the vendor.
How: Non returnable packaging was used.

ROOT CAUSE
Vendor did not have returnable packaging in place.

HORIZONTAL EXPANSION
Working with Logistics to identified other returnable packaging opportunities.

SOLUTION
Logistics pillar worked with vendor to develop returnable packaging to reduce 179 pallets (6265 lbs) year.

VERIFICATION
The wire harnesses are no longer coming in on the wood pallets.
Energy conservation

PROBLEM DEFINITION
What: Thermostat set points
When: On all shifts
Where: All conditioned areas
Who: All employees
Which: Energy waste due to over heating or cooling
How: Thermostat was set out of needed range in the area

ROOT CAUSE
Manual set thermostats allowed for miss adjustment

HORIZONTAL EXPANSION
Applied a plant wide standard for temperature control for both Heat and AC.

SOLUTION
The area was reviewed and worked with operators to find appropriate temperature setting for area.

VERIFICATION
Thermostat verified to hold setting and area temperature verified to remain appropriate.

HVAC Thermostat Set Points
EHS&E-S-2
The thermostats are to be set at 70°F for heating and 73°F for cooling, +/- 3°F. As the facilities are upgraded more automated controls will be added.
Air Quality

**No Engine Idle Policy**

**Applicability:** This policy applies to the operation of vehicles with internal combustion engines on the Wichita CNH Ind. Property.

**Rationale:**
- Engine Idling consumes up to one gallon of fuel per hour and wastes more fuel than turning off and on a vehicle engine. Unnecessary idling for just 5 minutes at day can waste 1-2 tanks of gas per year.
- Mechanics and car companies agree that excessive idling is hard on a vehicle’s engine because it is not working at peak operating temperatures.
- Unnecessary idling adds pollution such as Carbon Dioxide to the atmosphere.

**Purpose:** Eliminate all unnecessary vehicle idling on CNH Ind property such that idling time is minimized in all aspects of operations.

**Actions:**
- Step 1: Turn off the engine if the vehicle is going to be parked for more than 60 seconds (except in traffic.)
- Step 2: Drive the vehicle to warm it up, rather than idling the engine (usually no more than one minute of idling is needed.)
- Step 3: Spread the word to your family and friends. Telling your family and friends about the benefits of reduced idling will help them save money and help protect the environment too.

---

WICHITA ENVIRONMENTAL, HEALTH, SAFETY AND ENERGY STANDARD

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<th>Title:</th>
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</tbody>
</table>

Number: EHS&E-S-4

Issuing Dept.: Wichita Plant EHS&E

Title: No Engine Idle Policy

Page: 1/1
New Chemical/Compound Request

Form is reviewed by Chemical Review Committee

Chemical is checked to ensure it is not on the CNHi Banned Chemical List. Once approved SDS is submitted to 3E Online. If not approved the request goes back to the requisitioner and a new chemical must be found

Notify requestor that it is OK to Purchase Chemical

Train employees on chemical hazards or other requirements

EHS&E Review Requirements:
- Legal requirements
- Permit limits
  - Wastewater
  - Air
- CNH Banned chemicals
- Ozone depleting substances
- Carcinogenic chemicals
- PPE
Identify Significant Energy Users

SEU
Weld Fume Extractors

- Inventoried all energy consuming components of Weld Fume Extractor
- Understand usage of those components

Standard Operation
- Dirty air enters chambers.
- Air is pulled through filter media.
- Clean air exits.

Pulse Cleaning
- Pulsed air shoots directly into filter media.
- Dust particles are shot directly into the hopper.

- Energy Sources 480 Volts
- Motor 350hp
- Energy Components (electric):
  - Fan (hp)

Three other smaller 200hp units
Measurement of Significant Energy User

Expanded to all four units

Power usage

Meter on Fume Extractors
**Weld Fume Extractor Automation**

**PROBLEM DEFINITION**
Type 1 Loss on Weld Smoke Fume Extractor System currently runs all the time.

**ROOT CAUSE**
Type 1 loss from lack of controls in place.

**HORIZONTAL EXPANSION**
This been expanded to all four fume extraction systems.

**SOLUTION**
Automate startup and shutdown of Weld Fume Extractors in conjunction with an arc being struck in the zone of the fume extractor system.

**VERIFICATION**
Type 1 loss was reduced 90%.

**Motive Loss by Equipment**
- Type 1
- Type 2
- Type 3
- Type 4
- Type 5
- Type 6
- Type 7

**PLC Software**
This been expanded to all four fume extraction systems.
PROBLEM DEFINITION
Shot blast operates for more time than needed to clean parts. Increased energy, material and degradation

ROOT CAUSE
Type 1 loss for Mechanical controls

HORIZONTAL EXPANSION
Work with PM to evaluate decreased PM activity.

SOLUTION
Retrofit Shot Blaster with a light curtain (LC) to determine necessary shot drop time for parts.

VERIFICATION
Monitoring shows reductions of 39% in material and 15% in power.
PROBLEM DEFINITION

Metal halide light system used an excess of electricity and created heat.

ROOT CAUSE

Type 3 loss from lack of controls in place due to old technology.

HORIZONTAL EXPANSION

Accepted as corporate Best Practice and shared with all NAFTA CNH Env Pillar Leaders.

SOLUTION

Remove 400W metal halide lights and replace with Digital Lumens 120W LED lights with motion detection and light harvesting. Saving 1,360 BTU residual heat per fixture in an already warm plant.

VERIFICATION

Electricity usage is monitored to track and validate savings.
Future Expansion

**Useless Consumption**
- Type 1
  - Machine shutdown procedures
    - Applied 4 times
  - Lighting Controls
    - Applied 419 times
- Type 2
  - Set point Management For building HVAC
    - Applied 11 times
  - VFD Controls
    - Applied 35 times
- Type 3
  - Optimization/ Burner Efficiency
    - Applied 15 times
  - HVLS Fans
    - Applied 29 times

**Over Consumption**
- Type 4
  - Recover Paint heat for building heat
    - Applied 0 times
- Type 5
  - Compressed air delivery
    - Applied 1 time
  - VFD (4) and Set point Controls (27)
    - Applied 66 times
  - Efficient Lighting LED (105)
    - Applied 211 times
- Type 6
  - Skylights Solar Power (3)
    - Applied 75 times
- Type 7
  - Sky Light Vents
    - Applied 72 times

**Non Optimisation**
- Type 8
  - Lighting Controls
    - Applied 13 Additional times
  - Over Consumption & VFD Controls
    - Applied 6 additional times
  - HVLS Fans
    - Applied 6 Additional Times

**Recoverable Energy**
- Type 9
  - Machine shutdown procedures
    - Applied 4 times
  - Lighting Controls
    - Applied 419 times

**Transmission**
- Type 10
  - Set point Management For building HVAC
    - Applied 11 times
  - VFD Controls
    - Applied 35 times

**Transformation**
- Type 11
  - Optimization/ Burner Efficiency
    - Applied 15 times
  - HVLS Fans
    - Applied 29 times

**Energy Source**
- Type 12
  - Recover Paint heat for building heat
    - Applied 0 times
  - Compressed air delivery
    - Applied 1 time
  - VFD (4) and Set point Controls (27)
    - Applied 66 times
  - Efficient Lighting LED (105)
    - Applied 211 times
  - Skylights Solar Power (3)
    - Applied 75 times

**General**
- Lighting & Machine Controls
  - Applied 537 times
- Over Consumption & VFD Controls
  - Applied 6 additional times

**Additional**
- Machine shutdown procedures
  - Applied 4 times
- Lighting Controls
  - Applied 419 times
- Set point Management For building HVAC
  - Applied 11 times
- Optimization/ Burner Efficiency
  - Applied 15 times
- Recover Paint heat for building heat
  - Applied 0 times
- Compressed air delivery
  - Applied 1 time
- VFD (4) and Set point Controls (27)
  - Applied 66 times
- Efficient Lighting LED (105)
  - Applied 211 times
- Skylights Solar Power (3)
  - Applied 75 times
Green Logistics

- Area of concern identified with inefficient packaging
- Track frames coming from Mexico

- New returnable racks developed for product coming from Mexico
  - Reduce both inbound and return shipments

- Currently 10 projects active or scheduled to optimize transportation with suppliers to include in:
  - Milkruns
  - More efficient packaging

- Reduction of truckloads for Mexico product
  - 22 inbound
  - 57 return

Reduction of 1,071,778 lbs. CO₂
Green Logistics

- Project worked with vendor, purchasing, corporate logistics and plant logistics.
- Lap bars coming from Taiwan

- Lap bars from Taiwan were shipped 2 to a box, reconfigured the layout of the lap bars in the box and increased to 4 pieces per box.

- Reviewing current packaging with all international suppliers to identify additional savings opportunities.

- Reduction of 18 ocean containers on average per year for lap bars.

- Reduction of 43,128 lbs. CO₂

5R’S

Refuse
Reduce
Reuse
Recycle
Recover
Green Logistics

Full container engine deliveries from overseas. Container is live unloaded and the empty container returns to Kansas City, round trip is a cost of $900

Previously 8 containers a month were filled with returnable racks and returned to engine supplier with an additional $900 round trip charge, working with corporate logistics and steamship lines racks are returned on containers that delivered engines.

Project will eliminate 96 container charges per year based on current volumes

Projected Savings: Transportation $7200 per month

CO2 Reduction: 349,000 lbs. CO2
Green Logistics

- New radiators sourced from existing supplier
- All current items from supplier have returnable packaging
- Began working on this before final approval of parts

Returnable packaging developed for new radiators. Decommissioned racks from military product were retrofitted to handle the new parts.

Current Projects
- Tier 4B DPFs coming out of Mexico – prototypes validated and returnables in place
- Tier 4 Coolers coming from Adams Thermal. Completed in Q1 2015

Cost of New Rack: $650
# of Racks: 50
Potential Total Spend: $32,500

Cost of Reworked Rack: $125
# of Racks: 50
Total Actual Spend: $6,250

Total Savings: $26,250

Packaging Charge per part from Supplier: $53.65
Annual # of parts: 2,586

Total Cost Avoidance: $138,739
Green Suppliers

OUR PARTNERS ARE ISO 14001 CERTIFIED

Chemistry

Waste

Contractor

Suppliers

ISO 50001 Certified
CO$_2$ Emission Offset

- Wichita purchased 442,473 kwh of Renewable Energy Credits.
-Offsetting 2,475.33 tons of facility CO$_2$ emissions
### EEM Checklist

<table>
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<tr>
<th>Item No.</th>
<th>Checklist Criteria</th>
<th>EEM Standard Section</th>
<th>EEM Responsibility</th>
<th>Section</th>
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<th>Phase 2</th>
<th>Phase 3</th>
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<td>2</td>
<td>Is it clear the objective of the new equipments introduction?</td>
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<td>3</td>
<td>Is the investment plan in line with the actual production schedule (AOP, SBP, etc.)?</td>
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<td>4</td>
<td>Have market needs, demand trends and technical trends been identified?</td>
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<td>5</td>
<td>Have production methods of competitors been studied?</td>
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<td>6</td>
<td>Are the major technical issues been clarified?</td>
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<td>7</td>
<td>Are there any R &amp; D issues not resolved yet?</td>
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<td>8</td>
<td>Are there any legal or regulatory issues?</td>
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<td>9</td>
<td>Has a patent search been performed? Are there any infringements?</td>
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<td>10</td>
<td>Did you collect/organize product design information?</td>
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<td>11</td>
<td>Are conditions clear to choose between continuous production or production in batches?</td>
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<td>12</td>
<td>Are the cycle life of the product and volumes well defined?</td>
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<td>13</td>
<td>Are the costs in line with target costs?</td>
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<td>14</td>
<td>If volume are not clearly defined, have you analyzed the risks?</td>
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68.5% of Vendors have verified environmental load reduction systems. Up 2.2% since October 2014.

Purchase electricity from Westar Energy which has contracts for about 301 megawatts of electricity from wind farms. Westar also purchases 6 MW’s of landfill gas electric generation.

Working with vendors to reduce waste by using returnable racking.
Green Vision

**Completed**
- Environmental /Energy Costs Deployment
- 7 Steps of Energy
- ISO 14001
- Reduction in Energy Use
- ISO 50001
- Zero ODS

**2015**
- Expand Energy Controls
- Continued Reductions in Energy
- 5R Waste Reduction
- Increase Recycling
- Expand Green Procurement

**2016-2021**
- Chemical Use Reduction
- Zero Packaging Waste
- Increase Green Procurement
- Zero Waste to landfill (2020)
- Reduced VOC’s

**Completed**

**2015**

**2016-2021**
Thank you!