Paint Line Projects
Graco

Brian Joe
MnTAP Advisor: Mick Jost
Company Overview

• Graco is a fluid handling equipment and systems manufacturer

• “Move, measure, control, dispense and spray a wide range of fluids and viscous materials used in lubrication, commercial and industrial settings” (Graco)
Motivations for Change

• The two “greens”

• Cost savings and environmental awareness

• Energy efficiency around the facility
Approach

• Learn “ins and outs” of process

• Determine improvable areas

• Research and test solutions
Pre-Treatment Wash Line

- Natural gas use
- Water use
- Phosphorus discharge
Process Changes: Wash Line

- DI water reduction
- Stage one: more aggressive
- Stage four: nano-chemistry
# Process Changes: Pre-Treatment Wash Line

<table>
<thead>
<tr>
<th>DI Supply Reduction</th>
<th>Supply Savings</th>
<th>Sewer Savings</th>
<th>Annual Total Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>546,000 gallons/year</td>
<td>$8,000</td>
<td>$2,000</td>
<td>$10,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Chemical Savings</th>
<th>Phosphorus Discharge Savings</th>
<th>Natural Gas Savings</th>
<th>CO₂ Emission Savings</th>
<th>Annual Total Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switch pre-treatment chemicals</td>
<td>9,000 lbs.</td>
<td>200 lbs.</td>
<td>26,000 therms</td>
<td>300,000 lbs.</td>
<td>$25,000</td>
</tr>
</tbody>
</table>
Solvent Recycling

• Used for flushing lines between colors
• Recyclable and reusable
  – Reduce purchase and disposal costs
• Purchase solvent recycler
Process Changes: Paint Line

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Environmental Savings</th>
<th>Implementation Cost</th>
<th>Annual Total Savings</th>
<th>Payback</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchase Solvent Recycler</td>
<td>1500 gallons solvent purchases &amp; disposals</td>
<td>$11,500</td>
<td>$6,000</td>
<td>Two Years</td>
</tr>
</tbody>
</table>

- Large quantity waste generator to small quantity generator
  - Less regulatory burden
Other Projects

• Compressed air leak audits
  – 310,000 kWh
  – $23,000

• Xcel Energy Process Efficiency
Personal Benefits

- Daily responsibilities
- Diverse communication
- Manufacturing setting
- Environmental awakening

“OK, ‘Leo,’ break’s over.”
Questions?