

Energy Management at ASHTA Chemicals in NE Ohio

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Energy Management at ASHTA

- Company Background:
 - ASHTA Chemicals Operates a electrochemical Chlor-alkali plant in Ashtabula, County Ohio.
 - The plant was initially constructed in 1964 and has operated continually since then.
 - Primary products are Chlorine, Potassium Hydroxide and Hydrochloric Acid.
 - Primary Raw materials are: Salt (KCl), Power and Water
 - ASHTA is an RCMS certified member of ACC, and is a member of multiple other trade associations, including OCTC, Chlorine Institute, NACD, and Industrial Energy Users of Ohio.

Energy Management at ASHTA

- Energy Supply
 - ASHTA's power is fed through 138 KV, transmission level service, in First Energy's CEI Territory.
 - ASHTA owns and operates its own 138KV:13.8 KV transformer. The process voltage is further converted to 120V DC through three rectifying transformers.
 - Greater than 90% of ASHTA's power consumption is consumed in a 120V DC electrical circuit.
 - ASHTA's continuous load is greater than >20 MW, with only short outages during the year.
 - Due to the continuous large load and flexibility to get off-line, ASHTA has some significant advantages over many industrial power users
 - Through 2009, ASHTA had a long history of participating under an "Interruptible Power Supply" with a "Special Contract", wherein ASHTA committed to reduce power consumption during high demand periods.
 - PUCO cancelled all Special Contracts in 2009, and ASHTA opted to continue under an interruptible rider offered by the utility.
 - In 2012, ASHTA moved to a generation supply contract, and began to participate directly in PJM's Demand Response (DR) program through a Curtailment Service Provider (CSP).

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 - In 2013, ASHTA applied for and received approval for a Reasonable Arrangement (RA) through the PUCO, in exchange for making a significant energy efficiency investment.
 - Unlike previous RA’s by the PUCO, ASHTA was allowed to shop for generation and continue to participate in DR

Energy Management at ASHTA

- The Future of Energy at ASHTA:
 - Energy Savings Project – a complete change in electrochemical process from current mercury-cell technology to “zero-gap” membrane cell technology will provide between 25% and 30% reduction in electrical power consumption.
 - Offset of some power savings will be more thermal input, but the net energy savings are close to 20%.
 - A more balanced load between electrical energy consumption and thermal energy consumption, will provide future opportunity for Combined Heat and Power (CHP) on site.
 - Additional production capacity from expansion will also allow ASHTA to aggressively participate in the capacity market, demand response, or even economic load response going forward.

Tips and Advice

- Know Your Bill: There can be a lot embedded in a power bill that may provide opportunities for better energy management and savings
 - Know your level of Service
 - Know your provider(s) – Generation, Transmission, and Distribution
 - Know what is bundled and what is not
- Know Your Load: Pay particular attention to electrical load throughout the day and seasonally and instantaneous current draws from large equipment.
 - Know your data - Request power data from your utility representative in electronic format. Plot it by hour by day and try to map and reconcile your usage.
 - Know your profile - Look for peaks and troughs on usage and determine what causes them.
 - Know your Power Factor – Continuous demand versus reactive demand.
- Know Your Opportunities:
 - Know the jargon - Understand what may apply to you (e.g. Demand Response (DR), Capacity Charges (5CP), Peak Load Contribution (PLC), Combined Heat and Power)
 - Know the people and the hot topics - Consider attending one of the MEC Energy Conferences
- **Take Action – Set forth an Energy Plan and review and revise it annually!**