An Energy Efficiency Workshop & Exposition

Palm Springs, California

Please be courteous to our speakers

Turn off all cell phones

and

Set pagers to vibrate

An Energy Efficiency Workshop & Exposition

Palm Springs, California

Managing Energy with MSE2000 at the US Postal Service; Atlanta P&DC

Joshua Long
Georgia Institute of Technology
Energy & Environmental Mgt. Center (EEMC)
Josh.long@edi.gatech.edu
Phone: (404) 894-3588

Georgia Tech Economic Development Institute

UNITED STATES POSTAL SERVICE

Motivation for Energy Management at the US Postal Service

- 640 million pieces of mail each day
- 38,000 local post offices and P&DC's
- $422 million in energy annually
- EPACT Status: 20.5% energy reduction from 1985 baseline as of 2000
- Goal: 35% by 2010… Can they do it?

Planning for 2010

- Southeast Area turns to MSE 2000
  - A management system for energy
- Georgia Tech formulated MSE 2000
  - Echo's accepted systems like ISO 9000 and ISO 14000
  - Adopted by ANSI in April of 2000 as a national standard for energy

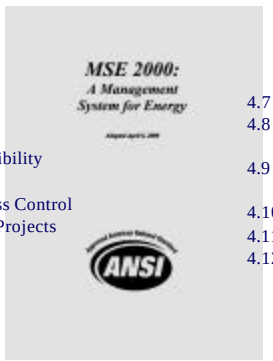
What is ANSI/MSE 2000?

- Structured *management system*
- Defined by a documented standard
- Rigid enough to provide control
- Flexible enough to adapt

Obtain Standard at:
webstore.ansi.org/ansidocstore/default.asp

Obtain MSE 2000 information at:
www.industry.gatech.edu/energy

Elements of the Standard



4.0 Requirements
4.1 Management System
4.2 Management Responsibility
4.3 Energy Planning
4.4 Equipment and Process Control
4.5 Energy Management Projects
4.6 Document Control
4.7 Energy Purchasing
4.8 Energy Monitoring and Measuring
4.9 Corrective and Preventive Actions
4.10 Record Keeping
4.11 Internal MSE Audits
4.12 Training

Implementing Energy Management

- Step One – Executive Commitment
  - Southeast Area and the Atlanta District commit
- Step Two – Pilot Implementation
  - Atlanta's P&DC is chosen
  - Georgia Tech's EEMC begins a 9 month implementation program to certify the site
- Step Three – Define the Energy Team and get them trained

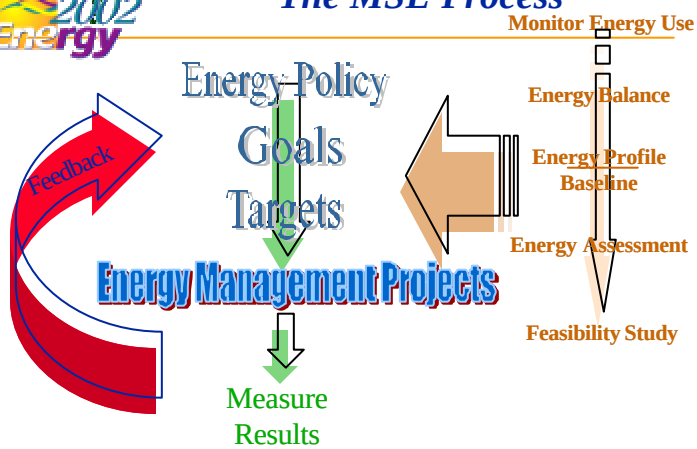
Atlanta's P&DC

- 457,000 square feet of conditioned space
- Over $1 million in annual utilities
- 500+ employees
- 950 million pieces processed annually
- 24 / 7 operation

Writing an Energy Manual

- The manual is the plan of attack…
  - How to meet the requirements of MSE 2000
- Begins with an Energy Policy Statement
- Goals are formulated
- Projects are reviewed against the goals and the policy annually
- Operating Procedures added for largest uses of energy

The MSE Process

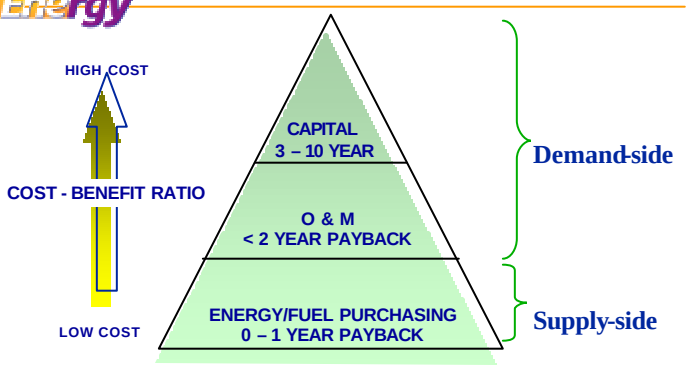


Gauging the State of Energy Use

- FEMP sponsors EEMC to complete a comprehensive Energy Assessment
  - Energy Engineers from GT's Industrial Assessment Center (IAC) conduct an assessment in March 2001
  - DOE has 26 IACs in the US that provide no cost comprehensive energy assessments to small and mid-sized manufacturers

Find Info on the IAC Program at: www.oit.doe.gov/iac

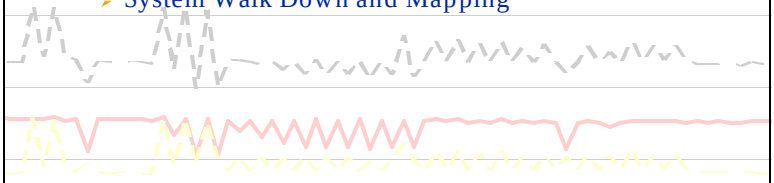
The Opportunity Hierarchy



Move up the opportunity hierarchy

Air Compressor Assessment

- 1-200hp and 2-100hp screw compressors operating between 135-145 psig
- The Assessment Included:
  - Electronically Logging Operation
  - System Walk Down and Mapping



Air Compressor Opportunities

- Largest pressure requirement for an end-use device is 80 psig
  - Reducing set points to 90-100 psig saved over 200,000 kWh / yr and $8,000
- 20 leaks were detected during walk down
  - Fixing leaks saved $5,025 per 100 cfm of air
    - Average leak size was 7 cfm, found using ultrasonic equipment
- Turning off an unnecessary compressor saved 300,000 kWh / yr and $12,000

HVAC Assessment

- 1-1000 ton chiller supplying 19 AHUs
- The Assessment Included:
  - Electronically Logging Space Conditions
  - System Walk Down and Mapping
  - Equipment and Controls Inventory

HVAC Opportunities

- Repair duct leaks ~$2,630 / yr savings
- Re-commission BAS controls and utilize disconnected economizers ~$2,530 / yr savings
- Repair System Leaks
  - ~$2,890 / yr saved

Sustaining the Savings

- Maintenance work order procedures and processes were modified to address costly O&M measures found in the assessment
- The MSE Team documented the new process, and initiated awareness training

Next Step – Capital Investments

- Efficient Lighting Systems
- New HVAC Equipment
  - VFD's for fans and pumps
  - DDC Control upgrades on EMS
  - New Coils
- Building Envelop Improvements

Funding acquired through ESCO

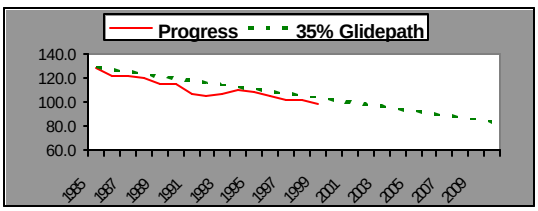
- ESCO provided up front investment for projects through a shared savings contract over 10 years
- MSE Team has the organization, ability, and resources to evaluate the performance of the projects and the ESCO implementation of them

The MSE Team Successes…

- The Lights Out on Environmental Compliance…
- Combining *facility* knowledge (the team) with *technical* capability (the ESCO) to achieve the best building envelope…

Future Steps

- Develop Energy Index to Track Program



- Promote Program Success and Aid the rest of region in the implementation of MSE 2000