Effective Energy Management

Integration of engineering principles with business management skills
“managing energy is not a technical problem, but one of how to best implement those technical changes within economic limits, and with a minimum of disruption.”
W.H. Mashburn P.E., CEM
Energy Management Institute
Virginia Polytechnic Institute & State University

Effective Energy Management

Permanent need for Energy Management:
- direct economic return can be proven
- “California’s Energy Crisis” now in the forefront of everyday life
- energy efficiency improves competitive edge for equipment manufacturers (3rd world markets)
- rapid changes in technology; need for upgrades
- national economy will benefit from move towards energy independence

Effective Energy Management

EMT Program: Key Components
“... good programs have been instigated by one individual who has recognized the potential, is willing to put forth the effort in addition to regular duties; will take the risk of pushing new concepts, and is motivated by a seemingly higher calling to implement an energy management program.”
EMT Program: Key Components

- Development of Organizational Structure:
  - Establish “Energy Committee”
    - Energy Manager
    - Management/Administration
    - Energy Coordinators
    - Employees/Customers

- Development of Energy Policy
  - keep policy statement “SHORT” (1-2 pages) and easy to read
    - EXECUTIVE SUMMARY FORMAT
  - define OBJECTIVES
  - outline ACCOUNTABILITY
  - establish REPORTING standards
  - define required TRAINING

  (reference Appendix “A” and “B” in Ch. 2)

- Planning
  - “secret to workable plan is to have people who are required to implement the plan involved in the planning process.”
  - audit planning (BENCHMARKING)
  - educational planning (TRAINING)
  - strategic planning
    (reference “Nominal Group Technique” in Ch. 2)
EMT Program: Key Components

- **Reporting**
  - Establish "energy index" for measuring and comparison purposes
    - Examples: btu/sq. ft.; kwh per building; $$$ per month or year
  - Customize reporting to individual circumstances
- **EXECUTIVE SUMMARY APPROACH**
  - (K.I.S.S. principle)
    - Computer spreadsheets

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EMT Program: Key Components

- **Scheduling/Implementation**
  - Must be sensitive to users
  - Be mindful of "rebate" inspections required
- **Feedback**
  - Customer satisfaction
  - Reporting
- **Evaluation/Analysis**
  - "Energy Committee" +/- analysis

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Energy Manager: Functions

- **"Technical"**
  - Conduct audits/identify ECO’s
  - Establish BENCHMARKS
  - Setting performance standards
  - Implement ECO’s
  - Measure actual energy use
- **"Policy-Related"**
  - Monitor federal/state legislation
  - Monitor utility rebate programs available
  - Participate in organizations like ASHRAE/AEE
**Energy Manager: Job Functions**

- **“Public Relations”**
  - educate other employees/customers on value of EMT
  - setup system for soliciting ideas from others
  - award recognition
  - setup formal reporting system
  - establish network of communication

- **“Planning/Purchasing”**
  - monitor energy costs and demand charges
  - employ “life-cycle” cost analysis for selecting system and equipment types
  - develop contingency plans for possible outages
  - report to upper management

**Energy Manager: Skills Needed**

- Technical background w/ experience in energy-efficient design of buildings and equipment
- Practical, hands-on experience with systems and equipment
- “Goal-oriented” management style
- Ability to work with people at all levels
- Technical report writing
- Verbal communication skills