

# Mike's Energy Efficiency Strategies

- Turn off equipment when not needed – energy conservation (ala Jimmy Carter)
- Use the most efficient equipment – energy efficiency (ala GHW Bush)
- Turn off or reschedule equipment when needed – demand control
- Look for oversizing & redundancy
- Consider part load efficiencies



# Mike's Energy Efficiency Strategies

- Be ready when maintenance opportunities strike!
- Consider new and emerging technologies
- Seek assistance from your energy professionals
  - In-house staff, utilities, consultants, vendors, gov't (DOE & OEMC), CSU
- Treat your workplace like your home



# Energy Efficiency/Conservation Opportunities

- Lighting
- Building Envelope
- Heating and Cooling
- Hot Water
- Equipment and Machines



# Energy Efficiency/Conservation Opportunities - Lighting

- High bay fluorescents replace metal halide lamps as appropriate
- New T-8/T-5 fluorescent lamps and ballasts
- LED exit signs
- Lower lighting levels as appropriate
- Lighting occupancy sensors
- Consider daylighting



# Energy Efficiency/Conservation Opportunities – Bldg Envelope

- **Build Energy Efficiency Into New Buildings**
  - Insulate as appropriate
  - Install efficient windows and doors as appropriate
  - Weatherstrip
  - Window treatments
  - Keep doors and windows closed



# Energy Efficiency/Conservation Opportunities – HVAC

- When replacing, get the most efficient equipment available
- Change heating and cooling setpoints during occupied hours
- Change heating and cooling setpoints during unoccupied hours
- Install and set proper controls
- Keep equipment maintained



# Energy Efficiency/Conservation Opportunities – HVAC

## Reducing Heating Temperature When Building is Occupied

| Heating Degree Days | Energy savings** if thermostat setting is reduced by: |     |     |
|---------------------|---|-----|-----|
|                     | 3°  | 5°  | 7°  |
| 1,000               | 15%   | 26% | 36% |
| 2,000               | 14  | 24  | 33  |
| 3,000               | 13  | 22  | 31  |
| 4,000               | 12  | 20  | 28  |
| 5,000               | 11  | 18  | 25  |
| 6,000               | 10  | 16  | 23  |
| 7,000               | 9   | 14  | 20  |
| 8,000               | 8   | 13  | 18  |
| 9,000               | 6   | 11  | 15  |
| 10,000              | 5   | 9   | 12  |

\*\* If temperature is reduced for entire time heating system is in operation.

Source: "Reducing Energy Costs Means a Better Bottom Line," National Frozen Food Assn./U.S. Dept. of Energy



# Energy Efficiency/Conservation Opportunities – HVAC

## Approximate Percent Savings from Heating Setback During Unoccupied Hours

| Degree Days | Setback Temperature |     |     |
|-------------|---------------------|-----|-----|
|             | 60°                 | 55° | 50° |
| 1,000       | 13%                 | 25% | 38% |
| 2,000       | 12                  | 24  | 36  |
| 3,000       | 11                  | 22  | 33  |
| 4,000       | 10                  | 20  | 30  |
| 5,000       | 9                   | 19  | 28  |
| 6,000       | 8                   | 16  | 24  |
| 7,000       | 7                   | 15  | 22  |
| 8,000       | 7                   | 13  | 19  |
| 9,000       | 6                   | 11  | 16  |
| 10,000      | 5                   | 9   | 14  |

NOTE: Based on 65°F temperature and 14 hour night setback. Assumes full weekend setback.

Source: "Reducing Energy Costs Means a Better Bottom Line," National Frozen Food Assn./U.S. Dept. of Energy



# Energy Efficiency/Conservation Opportunities – Hot Water

- Reduce use of hot water
- Replace electric with gas or solar units
- Lower hot water setting
- Use waste heat from other sources to help heat water
- Consider instantaneous hot water heaters



# Energy Efficiency/Conservation Opportunities – Equipment

- Develop demand control strategy
- Replace with more efficient equipment
- Turn off equipment when not in use
- More specific suggestions depend on equipment

