

MAINTENANCE GUIDEBOOK I - MAINTENANCE PROGRAM

CHAPTER NINE - ENERGY AND MAINTENANCE

SECTION A RELATIONSHIP BETWEEN MAINTENANCE AND ENERGY USE

Maintenance and energy consumption are interrelated. Systems that consume energy should be included in an HA's comprehensive maintenance program. Well-maintained equipment operates at or near original operating specifications for its entire life cycle, resulting in the optimum use of energy. Poorly maintained equipment will become less and less efficient and require more and more energy.

The major energy consumers in HAs are water heaters, appliances, and water, lighting, and heating, ventilating, and air-conditioning (HVAC) systems. Proper installation, care, and maintenance of these systems, in addition to consumer habits, are vital to minimizing the energy-consumption levels of HAs.

The HA's performance in energy conservation is evaluated by PHMAP indicator #4. To receive an "A" rating for this indicator, the annual energy consumption compared to the average of the three-year rolling base, must not increase.

SECTION B OPERATING AND MAINTENANCE MEASURES

There are several HA- and resident-related operating and maintenance measures that can be implemented to control or reduce energy consumption. The HA measures include procedures controlled by the HA, while the resident-controlled measures are dependent on the residents' understanding of and concern for energy conservation, and their cooperation.

1. HA-CONTROLLED PROCEDURES

HA management should monitor the utility bills, checking for any spikes in energy usage, and determining why they have occurred. In addition, the HA's maintenance program should provide for the inspection, adjustment, and replacement of items such as:

- Extinguishing pilots in furnaces at the end of each heating season;
- Cleaning refrigerator cooling coils annually;
- Fixing dripping faucets or leaking hot-water pipes;
- Caulking around windows and entrance doors and replacing as needed;
- Performing efficiency tests on boilers and furnaces;
- Setting controls on furnaces and water-heaters annually for proper and economical operation;
- Weatherstripping doors and replacing as needed;

- Installing locks on the doors of water heaters to prevent tampering with the temperature control after it has been set not to exceed the 120 degrees F required by HUD.
- "Shutting down" vacant units by closing windows, turning off lights, appliances, and domestic hot-water heater, and setting the space-heating thermostat at 60 degrees F.

Implementation of these measures should result in energy conservation.

2. RESIDENT-CONTROLLED PROCEDURES

The resident-controlled energy conservation measures depend on the daily activities in the dwelling unit that only the resident can control. Residents should be taught the principles and practices of energy conservation. If they understand the potential for wasting energy and the financial implications associated with it, they will be more likely to turn off unnecessary lights and TV, and report improperly functioning appliances and leaking faucets to the HA immediately. For example, residents could be instructed in the proper use and cleaning of appliances, how to conserve water, to turn off unnecessary lights, efficient use of washers and dryers (use only with full loads), proper use and care of storm windows and doors, and efficient thermostat settings. An on-going educational program, including orientation for new residents, can increase the operating efficiency of the dwelling units considerably.

SECTION C UPGRADING ENERGY CONSERVATION

Energy-conservation measures can be upgraded by modification or replacement of systems to improve operating efficiencies and reduce energy consumption. Examples of energy conservation measures may include:

- Installing check or retail utility meters;
- Installing or adding to ceiling insulation;
- Installing or adding to wall insulation;
- Insulating bare hot-water and steam pipes;
- Caulking and sealing building joints;
- Adding or replacing weatherstripping for windows and doors;
- Installing clock thermostats for units with individual heating controls;
- Insulating water heaters located in unheated spaces;
- Adding insulation to air ducts in unheated spaces;
- Adding storm windows and storm doors;
- Replacing old windows and doors with energy-efficient ones (units with insulated glass);
- Replacing incandescent lighting fixtures with fluorescent units in spaces where lights are continuously needed (for example, corridors);
- Adding flow restrictors to shower heads and kitchen faucets;
- Insulating floors over unheated crawl spaces;

- Upgrading burners for oil-fired heating equipment;
- Upgrading boiler controls for central, group, or building heating systems;
- Installing electronic ignition on gas-operated domestic water heaters;
- Replacing electric-resistance heating units with heat pumps;
- Installing capacitors, peak-load controllers, and time-clock controls to monitor and control electrical usage.

Additional information is available at 24 CFR 965.305, 308, and 309, and 24 CFR 968.115.

Most, if not all, of these measures will require capital expenditures. Before any measures are implemented, however, a cost-benefit analysis should be prepared for comparing the total cost of installation and the associated total savings. If the analysis shows a payback period of 15 years or less, the energy-conservation measure should be implemented.

END OF CHAPTER NINE