Date
Initials

Fences

Fences surrounding the facility's grounds are usually made of aluminum, steel, concrete block, brick, wood, or durable plastic. Metal fences, such as chain link, require regular inspection of paint condition, rust and other corrosion, and vegetation and trash buildup. Wood fences are additionally susceptible to rot and loose components, such as pickets, planks, and braces. Perimeter and boundary fences should be checked semi-annually.

Use this checklist as a guide for auditing building elements and performing appropriate PM procedures. Note deficiencies and required maintenance and repair at the end of this checklist. Check each box when the item has been inspected and any necessary PM tasks have been performed.

SEMI-ANNUAL

- ☐ **Alignment**
- ☐ **Structural stability**
  - ☐ Post integrity and alignment
  - ☐ Foundation integrity
  - ☐ Overall condition
- ☐ **Paint condition**
- ☐ **Hardware condition and lubrication**
- ☐ **Gate and latch/lock function and condition**
- ☐ **Safety** for deficiencies such as sharp edges, large gaps, and splintering
- ☐ **Overall condition** for deficiencies such as vegetation encroachment, debris buildup, holes, sagging areas, missing segments, rot, fungus, termites, rust, splintering, or vandalism
- ☐ **Other**

Date

Initials

Fences

Deficiency Report

Check any categories that have deficiencies. Note specific issues and planned maintenance or repair tasks to address them.

- ☐ **Alignment**
- ☐ **Structure**
- ☐ **Paint**
- ☐ **Hardware**
- ☐ **Gates and latches/locks**
- ☐ **Safety**
- ☐ **Overall condition**
- ☐ **Other**

SEMI-ANNUAL

Preventive Maintenance for Multi-Family Housing, J. C. Maciha © 2005 Reed Construction Data, Inc.

Date
Initials

HVAC Systems

Regular preventive maintenance of HVAC (heating, ventilation, and air-conditioning) systems is crucial to the quality of air and comfort level within the apartment community. PM is also key for energy efficiency and maximizing equipment life. HVAC systems should always sufficiently control temperature and humidity, distribute outside air uniformly, and isolate and remove odors and pollutants. Improper function and maintenance can cause indoor air pollution by allowing stale or contaminated air to remain in the building. It is essential that both the building's common HVAC system and those for individual units have fully functional and regularly inspected pressure control, filtration, and exhaust equipment. HVAC systems must also be properly sized in proportion to the area and number of occupants.

The following checklist should be used for semi-annual inspections of the HVAC system. Management may opt to contract outside professionals to handle this task, although the following preventive maintenance procedures can be conducted by in-house maintenance personnel. If an outside service contractor is used, be sure to validate their performance by an audit of service performed.

When performing any maintenance procedures, always refer to manufacturers' recommendations. Diagnostic tools such as a digital HVAC analyzer can also be of help. *(See the **Appendix** for more information.)* The following checklist can be applied to all areas that are affected by the HVAC system, including business offices, lobbies, common kitchens, indoor fitness / recreational centers, locker rooms, public restrooms, indoor swimming pool areas, and other common areas.

For all types of HVAC systems, change filters twice a year and post a sticker on the HVAC unit with the date of change and initials of the mechanic. If an outside service is used, plot the date of service on the wall chart and verify that performance is as per contract. *(See the **Appendix** for HVAC system technical information. See the Maintenance Cost Data in the **Appendix** for cooling tower and boiler cost estimates.)*

Use this checklist as a guide for auditing building elements and performing appropriate PM procedures. Note deficiencies and required maintenance and repair at the end of this checklist. Check each box when the item has been inspected and any necessary PM tasks have been performed.

Date

Initials

HVAC Systems

SEMI-ANNUAL

General condition

- ☐ Overall cleanliness of area for deficiencies such as moisture, leaking equipment, evidence of rodents or insects, and dirt/dust
- ☐ Wall mount stability
- ☐ System calibration
- ☐ Electrical connection condition
- ☐ Filter condition
- ☐ Motor
  - ☐ Lubrication
  - ☐ Housing stability
  - ☐ Connection condition
- ☐ Oil cup condition
- ☐ Unit operation and noise level
- ☐ Coil condition
- ☐ Window seal and gasket condition

Central/ground mounted

- ☐ Air filter condition
  (Note: change at least every six months)
- ☐ Burner assembly condition
- ☐ Circulation
- ☐ Combustion chamber/smoke pipe condition
- ☐ Condensate drain condition (A/C only)
- ☐ Condenser/compressor function
- ☐ Cooling coil condition
- ☐ Electrical disconnect function
- ☐ Electrical heating unit function
- ☐ General wiring and electrical control condition
- ☐ Guard, casing, hanger, support, platform, and mounting bolt condition
- ☐ Piping condition
- ☐ Liquid receiver condition
- ☐ Lubrication
- ☐ Motor, driver, and assembly condition
- ☐ Platform stability
- ☐ Pump unit function
- ☐ Refrigerant dryer, strainer, valve, oil trap, and accessories condition
- ☐ Refrigeration lines/coil condition for deficiencies such as frosting or icing
- ☐ Registers and ducts for proper air distribution
- ☐ Temperature and humidity control function
- ☐ Thermal insulation and vapor barrier condition
- ☐ Water spray, weir, and similar device condition
- ☐ Overall cleanliness
- ☐ Overall condition for deficiencies such as rust, corrosion, and mineral deposits

Preventive Maintenance for Multi-Family Housing, J. C. Maciha © 2005 Reed Construction Data, Inc.

HVAC Systems

Date

Initials

Heat pumps
Check all items listed above under "central/ground-mounted," plus:

- ☐ Temperature setting
- ☐ Noise and vibration levels

Chillers

- ☐ Overall operation for noise and vibration
- ☐ Hose, gauge, manifold, bucket, and valve condition
- ☐ Oil level and filter condition
- ☐ Contact and sensor condition
- ☐ Evaporator condition and function
- ☐ Condenser condition and function
- Refrigeration unit operation
  - ☐ Leakage potential
  - ☐ Condensation drainer operation
  - ☐ Pressure
  - ☐ Filter cartridge condition
  - ☐ Cleanliness (check for excess oil and dirt in chambers and tubes)
  - ☐ Lubrication
- ☐ Service tool condition
- ☐ Solution tank condition
- Unit
  - ☐ Airflow – airhandler on surface
  - ☐ Airflow through condenser
- ☐ Overall appearance
- ☐ Water level and flow rate

Cooling towers
(Note: Cooling Towers should be inspected every month in-season.)

- ☐ Unit operation for leaks, noise, or vibration
- Fan
  - ☐ Motor lubrication
  - ☐ Blade condition
  - ☐ Blower condition
  - ☐ Bearing lubrication and condition
  - ☐ Housing condition
  - ☐ Fan shroud alignment
  - ☐ Fan condition for deficiencies such as chips, cracks, and excessive contaminant buildup on blades
  - ☐ Overall operation
- Gearbox
  - ☐ Oil level
  - ☐ Oil quality
  - ☐ Connection condition and alignment
  - ☐ Pulley and belt condition (if applicable)
  - ☐ Overall condition for deficiencies such as corrosion and hose cracks
- ☐ Hot water basin cleanliness
- ☐ Water tower cleanliness
- ☐ Strainer cleanliness

SEMI-ANNUAL

Date

Initials

HVAC Systems

SEMI-ANNUAL

Cooling towers *cont.*

- ☐ Belt condition for deficiencies such as wear, tension, and misalignment
- ☐ Electrical wiring connection condition
- ☐ Overall cleanliness
- ☐ Overall condition

Heating systems *(See also annual checklist for **Hot Water Heaters**)*

- ☐ Amp draw per manufacturer's specs
- ☐ Equipment cleanliness
- ☐ Flow switch operation
- ☐ Mechanical equipment function
- ☐ Pull header condition (on units more than five years in age)
- ■ Pumps
  - ☐ Function
  - ☐ Oil condition
  - ☐ Overall condition
- ☐ Safety limit switch operation
- ☐ Water temperature (in and out)
- ☐ Overall condition for deficiencies such as corrosion, scale, and entrapped air

Boilers

(Note: The use of a licensed professional inspector/maintenance contractor is recommended to ensure compliance with state and federal regulations. Follow up of contractor work by maintenance supervisor is recommended.)

- ☐ Air heater function
- ☐ Auxiliary equipment function
- ☐ Back feed pumps function
- ☐ Blowoff and blowdown lines function
- ☐ Boiler room log condition
- ☐ Burner and control condition
- ☐ De-aerator function
- ☐ Energy efficiency
- ☐ Electric power function
- ☐ Feedwater supply condition
- ☐ Feedwater treatment/control
- ☐ Firing rate control condition
- ☐ Fuel supply line condition
- ☐ Fuel system/control condition
- ☐ Heat recovery equipment condition
- ☐ Limit device condition
- ☐ Pressure gauge and relief valve function
- ☐ Overall cleanliness
- ☐ Overall condition

Preventive Maintenance for Multi-Family Housing, J. C. Maciha © 2005 Reed Construction Data, Inc.

HVAC Systems

Date
Initials

Overall safety

- ☐ Anchor stability
- ☐ Deck areas for deficiencies such as moisture, grease, mold, and tripping hazards
- Doors
  - ☐ Hinge condition
  - ☐ Lock and knob function
  - ☐ Guard stability per code
  - ☐ Overall condition
- ☐ Handrail stability
- Harness
  - ☐ Fastener condition
  - ☐ Strap condition
  - ☐ Tie condition
  - ☐ Overall condition
- Ladders
  - ☐ Step condition
  - ☐ Rail stability
  - ☐ Overall condition
- ☐ Vibration limit switch function
- ☐ Work area condition
- ☐ Top surface/fan deck condition
- Water distribution system
  - ☐ Distribution pipe condition
  - ☐ Eliminator condition
  - ☐ Hot water distribution basin support member condition
  - ☐ Internal strainer condition (if applicable)
  - ☐ Louver condition
  - ☐ Lubrication of flow control valves
  - ☐ Spill flash bar condition
  - ☐ Structural integrity
  - ☐ Bolted joint condition
  - ☐ Nozzle condition
  - ☐ Overall condition for deficiencies such as leads between joints, leaks, corrosion, buildup, breaks, and obstructions
- ☐ Overall condition for deficiencies such as leaks, cracks, deterioration, end panel separation, corrosion, pitting, wood casing for signs of rot, and brittleness or cracking of fiberglass
- ☐ Safety limit and interlock function
- ☐ Shutdown operation
- ☐ Walkway/platform stability and condition

☐ Residual noise

☐ Overall condition

☐ Other

SEMI-ANNUAL

Date

Initials

HVAC Systems

Deficiency Report

Check any categories that have deficiencies. Note specific issues and planned maintenance or repair tasks to address them.

- ☐ **General condition**
- ☐ **Central/ground mounted**
- ☐ **Heat pumps**
- ☐ **Chillers**
- ☐ **Cooling towers**
- ☐ **Heating systems**
- ☐ **Boilers**
- ☐ **Overall safety**
- ☐ **Residual noise**
- ☐ **Overall condition**
- ☐ **Other**

SEMI-ANNUAL

Preventive Maintenance for Multi-Family Housing, J. C. Maciha © 2005 Reed Construction Data, Inc.

Date
Initials

Fire Alarm Water Flow Testing

The fire alarm water system should comply with the tenets of the most current National Fire Protection Association (NFPA) *Fire Protection Handbook* (NFPA 72, *National Fire Alarm Code*®), which, as of this printing, suggests that the system be maintained with semi-annual inspections of the flow process. Comply with local regulatory agencies if more frequent testing is recommended.

PM in this area consists of validating that all equipment is present and functional on a monthly basis. Only certified professionals should effect repairs or routine maintenance procedures to alarm systems. The maintenance supervisor should work with the fire department to ensure compliance with NFPA Standards 13 (Fire Sprinkler Systems), 72 (Alarms), and any other relevant requirements. Additional requirements may go into effect due to changes in federal, state, and municipal laws. Maintenance personnel must be familiar with current statutes that apply to their specific geographic location.

The National Fire Protection Association can be contacted at:

National Fire Protection Association
One Batterymarch Park
Quincy, MA 02269-9109
Phone: 1-800-344-3555
Internet Web site: http://www.nfpa.org

*Use this checklist as a guide for auditing building elements and performing appropriate PM procedures. Note deficiencies and required maintenance and repair at the end of this checklist. Check each box when the item has been inspected and any necessary PM tasks have been performed. (See also annual **Fire Extinguishers** checklist.)*

- ☐ **Fire department connection**
  - ☐ Inlet cap condition
  - ☐ Couplet condition
  - ☐ Gasket condition
  - ☐ Clipper valve condition
- ☐ **Control valve condition**
- ☐ **Riser condition**
- ☐ **Gauge condition**
  - ☐ System pressure
  - ☐ Supply pressure
- ☐ **Sprinkler condition and performance**

SEMI-ANNUAL

Date
Initials

Fire Alarm Water Flow Testing

- ☐ **Gravity condition and function**
- ☐ **Suction tank condition and function**
- ☐ **Reservoir supply**
- ☐ **Pressure tank supply**
- ☐ **Overall condition** for signs of obstructions
- ☐ **Other**

SEMI-ANNUAL

Preventive Maintenance for Multi-Family Housing, J. C. Maciha © 2005 Reed Construction Data, Inc.

Fire Alarm Water Flow Testing

Date
Initials

Deficiency Report

Check any categories that have deficiencies. Note specific issues and planned maintenance or repair tasks to address them.

- ☐ **Fire department connection**
- ☐ **Control valves**
- ☐ **Risers**
- ☐ **Gauges**
- ☐ **Sprinklers**
- ☐ **Gravity**
- ☐ **Suction tank**
- ☐ **Reservoir**
- ☐ **Pressure tank**
- ☐ **Overall condition**
- ☐ **Other**

Date
Initials

Smoke & Carbon Monoxide Detectors / Alarms

The following is a preventive maintenance checklist for individually installed smoke and carbon monoxide detectors / alarms that are not part of the larger automated alarm system. These may be found within occupied or privately owned units, as well as throughout the facility. This check should be performed semi-annually. These alarms may be battery-operated, hard-wired, or plugged into electrical outlets and may be found in various areas of the home, including common areas and mechanical rooms. *(See **Alarm Systems** checklist for automated smoke alarms.)*

Use this checklist as a guide for auditing building elements and performing appropriate PM procedures. Note deficiencies and required maintenance and repair at the end of this checklist. Check each box when the item has been inspected and any necessary PM tasks have been performed.

- ☐ **Replace battery** (if not hard-wired)
- ☐ **Connection condition** for proper wiring and deficiencies such as arcing or exposed wires
- ☐ **Housing condition**
- ☐ **Mounting security**
- ☐ **Overall operation**
- ☐ **Overall condition**
- ☐ **Other**

SEMI-ANNUAL

Date

Initials

Smoke & Carbon Monoxide Detectors / Alarms

Deficiency Report

Check any categories that have deficiencies. Note specific issues and planned maintenance or repair tasks to address them.

- ☐ **Battery replacement**
- ☐ **Connections**
- ☐ **Housing**
- ☐ **Mounting**
- ☐ **Overall operation**
- ☐ **Overall condition**
- ☐ **Other**

SEMI-ANNUAL

Preventive Maintenance for Multi-Family Housing, J. C. Maciha © 2005 Reed Construction Data, Inc.

Date
Initials

Structural Members

Preventive maintenance entails a comprehensive visual inspection of each building material twice a year. Particular emphasis should be on load-bearing support areas that can be observed both externally and internally. Special attention should be given to potential water intrusion into the building. Note that in the event of potential structural damage from earthquakes, vehicles, or other sources, a professional engineer should be called in immediately to determine the structural implications.

Use this checklist as a guide for auditing building elements and performing appropriate PM procedures. Note deficiencies and required maintenance and repair at the end of this checklist. Check each box when the item has been inspected and any necessary PM tasks have been performed.

SEMI-ANNUAL

- ☐ **Foundation condition** for deficiencies such as cracking, slippage, or water encroachment
- ☐ **Sill conditions** for deficiencies such as rot, termites, or fungus
- ☐ **Joist condition** for deficiencies such as rot, termites, bowing, splitting, or fungus
- ☐ **Stud condition** for deficiencies such as rot, termites, bowing, splitting, or fungus
- ☐ **Beam integrity** for deficiencies such as rot, termites, bowing, splitting, slippage, or fungus, or, in the case of steel beams, rust
- ■ **Wall condition**
  - ☐ Masonry for deficiencies such as cracks, scaling, mortar, crumbling, or efflorescence
  - ☐ Wood for deficiencies such as termites, peeling paint, dry rot, nail popping, or fungus
- ☐ **Overall building integrity** for signs of structural failure
- ☐ **Overall condition**
- ☐ **Other**

Date

Initials

Structural Members

Deficiency Report

Check any categories that have deficiencies. Note specific issues and planned maintenance or repair tasks to address them.

- ☐ **Foundation**
- ☐ **Sills**
- ☐ **Joists**
- ☐ **Studs**
- ☐ **Beams**
- ☐ **Walls**
- ☐ **Overall building integrity**
- ☐ **Overall condition**
- ☐ **Other**

SEMI-ANNUAL

Preventive Maintenance for Multi-Family Housing, J. C. Maciha © 2005 Reed Construction Data, Inc.

Special Requirements

Date
Initials

This space is provided to list additional equipment, systems, and materials that are not covered in the "Semi-Annual" category of checklists, but fall into this interval of inspection frequency. Fill in the information about the equipment, components to be inspected, and any necessary PM tasks. Check each box when the item has been completed.

☐ _____

☐ _____

☐ _____

☐ _____

☐ _____

☐ _____

SEMI-ANNUAL