Operation and Maintenance of Real Property

Operation and Maintenance Handbook
MS-1

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SECTION 1

INTRODUCTION

1-1 RESPONSIBILITY

1-101 The Postmaster at each location is responsible for operation and maintenance of the facility in accordance with this handbook. The Postmaster may act as the building manager or may designate another individual to perform those duties. The director of Plant Equipment Engineering (or equivalent title) would normally be this designee except in smaller offices where the officer in charge or Postmaster would be personally responsible.

1-102 Inherent in the above responsibility are certain decisions based on cost effectiveness for personnel authorizations, training requests, repair and improvement requests, maintenance equipment purchases, and security provisions. Effective maintenance management requires the proper tools, adequate supervision, timely inspection, meaningful information, and technical competence. It requires administering with open lines of communications at all levels. This responsibility requires the use of good judgment and common sense at all times.

1-2 APPLICATION

This handbook applies to USPS personnel engaged in the operation and maintenance of real property. It prescribes the policies, procedures, and practices governing the operation and maintenance of USPS buildings and leased space including but not limited to the following:

a. Operation, maintenance, protection, repair, alteration, improvements, and management.

b. Official relations with other USPS offices, other Federal agencies, State and local governmental agencies, private organizations, and the general public.

1-3 SAFETY

The procedures prescribed in this handbook place special emphasis on safe work practice and maintaining a safe environment for building occupants and the public. The provision of Supervisor's Safety Handbook, HBK EL-801, shall apply and all employees shall be instructed to report unsafe practices or conditions to their supervisors.

1-4 DIVISIONAL SUPPLEMENTS

1-401 The Field Division General Manager/Postmaster, to meet local conditions, may issue additional instructions to implement the procedures and practices prescribed in this handbook.

1-402 The use of procedures and practices in conflict with those contained in this handbook must be specifically authorized by the Field Division General Manager/Postmaster.

1-403 Two copies of all divisional supplements to this handbook shall be forwarded to the Field Director, Maintenance Technical Support Center, P.O. Box 1600, Norman, OK 73070-6708. These supplements will be reviewed for possible adoption on a nationwide basis.

SECTION 2

BUILDINGS MANAGEMENT FIELD OPERATIONS

2-1 ADMINISTRATIVE SUPPORT MANUAL

The Administrative Support Manual (ASM) describes in detail many of the policies which are implemented in this chapter.

2-2 GLOSSARY

For the purpose of this handbook, the following interpretations shall apply:

a. Assigned space - Leased space occupied by USPS.

b. Building Manager - The person designated as responsible for the operation and function of the building and building systems to meet the needs of the occupants.

c. Conversion - Includes redesign, remodeling, and conversion of a building from one use to another, i.e., workroom or warehouse to office space.

d. Extension - An addition, enlargment, or expansion of an existing building which results in an increase in usable floor area.

e. General purpose space - Space in buildings suitable for assignment for general office functions.

f. GSA-controlled buildings - Buildings owned or leased by GSA where the assignment and reassignment of space and the operation of the building is under the control of GSA.

g. Leased space - Building or part of building leased by USPS from private source.

h. Maintenance - To preserve or keep in an existing state or condition; to prevent a decline from that state or condition by periodic or occasional examination, adjustment, lubrication, cleaning, and making minor repairs. Preventive maintenance is work which is programmed at scheduled periodic intervals.

i. Tenant - Any nonpostal agency or party occupying spaces in a building which is under the control of USPS.

j. Reimbursable services - Services rendered to a tenant which are financed by the tenant. This could be either for operation and maintenance or for special work.

k. Repair - A repair is the restoration of a facility to a condition substantially equivalent to its original state and efficiency. The distinction is made that whereas maintenance is preventive, repairs are curative. Repairs may involve replacement of component units in whole or in part when the new unit substituted is not better than the old one was when it was acquired. Routine and incidental replacement of parts constitutes ordinary repairs; extensive replacement of parts constitutes extraordinary repairs.

l. Special purpose space - Space in buildings, including land incidental to the use thereof, which is wholly or predominantly utilized for the special purposes of a tenant and not generally suitable for the use of other tenants.

those locations designated by the Field Division General Manager/ Postmaster.

2-502 LOCAL AIR POLLUTION, WATER POLLUTION, OR OTHER REGULATIONS

Local regulations known to impact maintenance shall be listed. For example: city regulations on use of polyurethane, solvents, open burning, etc. shall be listed.

2-503 REPORTS REQUIRED

A listing of reports required or made by the building manager showing where they go and when they must be made with a brief description (title) of the report form. The building manager must maintain a chronological listing showing actual date of submission. If an exemption to making a certain report has been granted by the supervisor, that exemption must be documented in this section.

2-504 RESERVED

2-505 DEVIATIONS AUTHORITY

A chronological listing by chapter and section of written, signed, dated authority for deviations from this handbook with a copy of the complete deviation filed in the appropriate section of the handbook.

2-506 ORGANIZATION CHARTS

A set of current year organization charts showing local, MSC and/or divisional relationships to the building manager including detailed staff information. This should be reviewed annually and updated when changes occur.

2-507 EMERGENCY DATA

2-507.1 A copy of current local fire, self-protection organization, contingency plans, and other emergency procedures, complete with names and phone numbers and emergency duty stations. Emergency action plans must include the most current Environmental Protection Agency requirements for controlling emergencies involving PCBs. Local maintenance procedures shall recognize the need to prevent friable asbestos building materials from being disturbed.

2-507.2 A record of each unannounced fire drill or other emergency drill and real emergency in chronological order.

2-508 MAINTENANCE DOCUMENTS AND LIBRARY

A listing of maintenance library handbooks should be maintained showing name and telephone number of person responsible to maintain the library and receive and distribute bulletins and change orders to the maintenance section.

2-509 MAINTENANCE TRAINING RECORDS

A listing of supervisory and nonsupervisory personnel showing: Total training required for each position, training completed, training planned, and estimated date of that training.

2-510 VACATION AND TRAINING SCHEDULE

A new calendar year schedule by three tours showing: Names, job titles, and scheduled and/or projected vacations and training periods. Schedules must be approved and signed by the building manager. Major changes impacting the schedule should be added as need dictates.

2-10 MANAGEMENT OF LEASED SPACE

2-1001 DEFINITIONS

The following definitions distinguish between management of leased space and lease administration:

a. Management of leased space includes day-by-day actions permissible under the terms of leases, or arrangements and requests therefor, the responsibilities for which are delegated to field officers.

b. Lease administration includes negotiations with prospective lessors and other actions leading to the preparation of formal lease documents; subsequent actions, usually of a formal nature, designed to enforce lease compliance by the lessor; and actions incident to lease modifications and terminations.

2-1002 GENERAL

2-1002.1 When a lease provides for the operation and maintenance of leased space by the USPS, it is the responsibility of the USPS building manager to furnish the service. The same level and frequency of service shall be furnished in the leased space that is furnished in the same type of space in other USPS buildings. In addition, the lessor will be required to meet any of the conditions of the lease for which it is responsible. See Management Instruction AS-510-83-1.

2-1002.2 The building manager responsible for management of leased space must be provided with a copy of the lease and be familiar with the terms of the lease. See Management Instruction AS-510-83-1.

2-1003 DUTIES OF POSTMASTER OR DESIGNATED OFFICIAL

Occasionally, it may be necessary for the real estate organization to request local assistance in various aspects of lease administration to carry out their responsibility. Such assistance may include the following:

a. Prepare requirements concerning maintenance and operations, for inclusion in bidding and lease documents.

b. Inspect and make recommendations concerning suitability for space offered for lease.

c. Collaborate with the divisional office in making condition surveys at the commencement, prior to occupancy, the renewal, or the expansion of a lease, to ensure that alterations have been performed in accordance with specifications and to establish and record original condition at the inception of the lease term. Assist in surveying the condition of the property at the termination or expiration of the lease; in evaluating and recording the finding; and in making recommendations concerning the Postal Service liability for restoration.

d. Take necessary action to provide normal services which are not the responsibility of the lessor under the lease provisions.

e. Continuously review and evaluate the performance of lessor under the terms of each lease; arrange for thorough inspection of the property as required by ASM 510 necessary to ensure satisfactory compliance with the lease requirements by the lessors. Make all necessary day-by-day

modular basis. The partitioning is usually of the movable type, generally ceiling height, and laid out on the modular lines provided in the basic design.

2-1103.3 Storage Type

Space suitable for storage of supplies, equipment, records, or material, which does not provide an environment suitable for an office operation. This type includes but is not limited to closets and unfinished attic and basement areas, as well as space built for warehousing and record storage.

2-1103.4 Special Type

Space which by reason of installed, fixed facilities or utilities is adapted for special use. Included are laboratories, vaults, unsuspended lookout area, darkrooms, electronic data processing rooms with special air-conditioning, and industrial-type operations with installed equipment. Post office special type space includes workrooms, lunchrooms, lockbox and service line lobbies, mailing vestibules, and platforms.

2-1103.5 Computing Net Assignable Areas

Measurements from the normal interior face of exterior walls to the centerline of interior partitions, or to the centerlines of intermediate partitions which separate assignable spaces. No adjustment is made for columns, projections, and alcoves when computing the net assignable area of a given space. In space where a fully enclosed convector resting on the floor extends from column to column or wall to wall, the net assignable area may be computed by measuring from the face of the convector enclosure to the inside face of the corridor wall.

2-1104 CIRCULATION AREA

2-1104.1 General

Circulation area is that portion of the gross area which is required for physical access to every reasonable subdivision of space, whether or not such areas are enclosed by partitions. These are areas to which the public has generally unrestricted access and which, if enclosed by walls or partitions, would be controlled by USPS, rather than by a particular occupant.

2-1104.2 Horizontal Circulation Areas

Generally include areas which are defined by walls or partitions for the purpose of physical access to various parts of the building. Horizontal circulation is divided into the following three types:

a. Core Circulation Areas - Include, but are not necessarily limited to:

   (1) Lobbies
      (a) Elevator
      (b) Entrance
      (c) Public
      (d) Public vestibules
   (2) Public pedestrian tunnels and bridges

b. Main Corridor Areas - Those needed to connect the means of exit from each floor, encircling or connecting core areas.

c. Secondary Corridor Areas - Those required to provide access to those subdivisions of space not accessible by main corridors. Partitions to form secondary corridors may be installed if required for functional purposes. If partitions are omitted, the installation lines are indicated on assignment or floor plans by dashes. (Secondary

2-1109.1.2 Storage type, which may be used for:

a. Storage
b. Vending stands
c. Laboratories (nonfixed equipment)
d. File rooms
e. Reserve

2-1109.1.3 Special Types:

a. PO box and mailing lobbies
b. PO workrooms
c. PO lunchrooms
d. PO mailing platforms
e. Vaults
f. Laboratories (fixed equipment)
g. Courtrooms
h. Libraries (with fixed stacks)
i. Auditoriums
j. Private toilets
k. Reserve

2-1109.2 Service Area

2-1109.2.1 Office type, which may be used for:

a. Health units
b. Joint-use conference rooms
c. Concessions

2-1109.2.2 Storage type, which may be used for:

a. Garages, including inside ramps and driveway
b. Van locks, etc.
c. Vending stands

2-1109.2.3 Special type, which may be used for:

a. Cafeterias, kitchens, and snack bars
b. Concessions
c. Vending stands
d. Health units
e. Telephone suite:

   (1) Frame room
   (2) Toilet room
   (3) Switchboard room

f. Loading platforms

2-1109.3 Operation Areas

2-1109.3.1 Office type, which may be used for:

a. Offices, building operations personnel
b. Supply rooms, custodial
c. Gear rooms
d. Security rooms (building protection)
e. Locker rooms (custodial employees)

2-1109.3.2 Storage type, which may be used for:

a. Storage
b. Building materials
c. Custodial materials and equipment
d. Supply rooms and closets, custodial
e. Service closets
f. Gear rooms (custodial or other)

2-1109.3.3 Special type, which may be used for:

a. Custodial shops (carpenter, machine, electrical, plumbing, paint)
b. Elevator penthouse
c. Lunchroom, custodial
d. Trash - wastepaper and incinerator rooms
e. Gear rooms

b. Represents the USPS - Represents the USPS as specifically authorized by the divisional office with State, county, and local civil authorities on matters related to enforcement of laws, ordinances, and regulations pertaining to building construction or operation.

c. Professional and Trade Association Contacts - Maintains contact with local building owners and managers, trade associations, contractors, and technical societies as may be required in order to keep abreast of the latest developments related to building construction, maintenance, and operation.

3-2 SERVICES

3-201 STANDARD LEVEL SERVICES

The services established below are provided by the USPS (or the lessor) to tenants on a scale sufficient to support one normal 8-hour shift per day, 5 days per week. A normal shift is considered to include startup and shutdown time of equipment which results in reimbursement being computed for time in excess of 10 hours. Time in excess of this will require reimbursement to the Postal Service.

a. Cleaning - Normal cleaning, including window washing, floor maintenance, and trash removal. When possible, cleaning will be accomplished during normal business hours.

b. Utilities - Electricity (for normal office equipment), water, and heat.

c. Physical Protection - Normal protection or security consistent with USPS activities.

d. Operation and Maintenance of Building Equipment - Operation, maintenance, and repair of elevators, air-conditioning, heating, electrical, ventilation, refrigeration, plumbing, and sewerage systems, including restroom supplies.

e. Maintenance of Grounds - Maintenance of grounds, including approaches, sidewalks, parking areas, and roads.

f. Other Building Equipment - The furnishing and maintenance of building equipment such as public directories and bulletin boards at the main entrance, door closers, water coolers, electric outlets for normal office use, door keys, changing locks (except for special security), room and occupant identification, and window shades or venetian blinds.

3-202 REIMBURSABLE SERVICES

The following are not considered normal building services; therefore, they are not included in the normal rental rate. Requests for these services from Federal tenants must be referred to GSA; such requests from other tenants are the responsibility of the particular tenant. See ASM 516 for further instructions.

a. Physical Protection - Security personnel and protection of classified records and property, beyond normal building security.

b. Space Adjustments - Services which are performed for the convenience of and at the request of occupant agencies, such as the installation, removal, and relocation of partitions, electric outlets, annunciator and buzzer systems; and the moving of furniture and office equipment.

equipment, tenant must reimburse the USPS for installation, maintenance, repair, and additional utility costs.

3-204 SPECIAL SERVICES

3-204.1 Auditoriums, Conference Rooms and Other Meeting Places

With respect to auditoriums, conference rooms, and other meeting places (including cafeteria areas when used for a meeting place), the following apply:

a. Guidelines - The guidelines and rules to be followed by tenants in permitting the authorized use of meeting places are prescribed in Figure 3-1. These guidelines are applicable to space used for conducting meetings within postal-operated buildings.

b. Postal Space - Meeting places reserved by the USPS and not assigned to GSA may occasionally be used by tenants as a courtesy of the USPS. Permission for such use may be granted at the local level on a case-by-case basis if such use will not interfere with postal activities.

c. Nonpostal Space - Meeting places in nonpostal space which is assigned by GSA are controlled by GSA or the using agencies. In large multi-tenant buildings, GSA should establish enough joint-use conference rooms in nonpostal space to meet the needs of the tenant agencies. The authorized use of such space must be controlled in accordance with Figure 3-1.

d. Special Buildings Services - The use of meeting places such as conference rooms, auditoriums, and cafeterias by other agencies often requires building services beyond those furnished by the USPS under the rental rate agreement with GSA. These extra services may be provided on a reimbursable basis when the USPS resources are available and the services can be provided without adversely affecting postal activities.

3-408 REMOVAL OF IMPROPERLY PARKED VEHICLES

The towing of improperly parked vehicles from parking facilities in and around existing USPS-controlled properties may be authorized by the USPS building manager provided the following criteria are met:

a. Statutory sanction must exist; that is, the removal of improperly parked vehicles from private property is not prohibited by local statutes. This can usually be determined by contacting the local police. In some instances a decision from the USPS legal counsel may be required.

b. One of the following adverse situations must exist. A vehicle is improperly parked so that:

   (1) A fire lane is blocked or any other safety hazard is created.

   (2) Entrance or exit from a garage or parking lot is blocked.

   (3) Entrance or exit from an authorized parking space is blocked.

   (4) Maneuvering area for postal vehicles is blocked.

   (5) A parking space is occupied which is authorized for postal and criminal law enforcement vehicles, or private vehicles of Federal judges, Members of Congress, or heads of tenant agencies.

   (6) A parking space authorized for official customers, visitors, and employees' vehicles is occupied and other parking spaces are not available for authorized vehicles.

c. The building manager should attempt to contact the operator of the improperly parked vehicle to voluntarily remove the vehicle before it is towed away. If this is not possible, the procedures for towing require that the applicable local statute or ordinance be followed meticulously. If towing is performed by licensed private operators called by the building manager instead of by the police, the building manager should develop a list of those operators within a reasonable distance of the facility involved and rotate towing jobs among the operators to ensure equal business opportunity. It is to be understood by the operators that all costs of towing are to be borne by the owner of the vehicle.

3-5 FURNISHINGS AND EQUIPMENT

3-501 DIRECTORY BOARDS

3-501.1 Location

Directory boards: (a) should be installed in all buildings on each floor adjacent to the elevator, or to the stairway if there are no elevators; (b) may be installed at loading docks; (c) should be provided to the extent necessary in each particular case; (d) should list the tenants which have quarters on that particular floor; (e) at the loading dock, should list receiving agents for tenants; and (f) at the street floor, should be a combined listing showing all of the tenants which have space in the building.

3-501.2 Design

Directory boards should be wall-mounted, enclosed with glass doors, and provided with locks. In new buildings constructed by the USPS, directory boards of standard design will be

3-503.3 Outrigger Signs

Outrigger signs of any size protruding into the corridors must not be used under any circumstances.

3-504 ELECTRICAL EQUIPMENT - EMPLOYEE OWNED

3-504.1 General

In the interest of utility conservation, individual appliances (e.g., coffee makers, electric can openers, refrigerators) are not allowed to be used by employees in postal installations where commercial food and beverage sources, such as vending machines, cafeterias and snack bars are available. At the minimum, necessary efforts should be made to install at least soft drink, coffee and snack vending machines when the number of employees in the installation justify this. When vending machines are not justified, and individual appliances are necessary, ensure that only minimum numbers are used by establishing coffee pool, etc. When feasible, all appliances should be shut off when they are not required during peak load periods.

3-504.2 Agency Request

A tenant desiring to have an employee appliance installed in a building under the jurisdiction of the USPS is required to submit a request in writing to the building manager of the building in which the installation is to be made. The request describes the appliance and its intended use, and must be approved by the building manager. The building manager will then inform the requesting tenant of its approval or disapproval in writing.

3-504.3 Building Manager Inspection

a. General - The building manager must provide for the periodic inspection of all installations of electrical appliances to guard against a possible fire hazard, and to ensure the observance of good housekeeping and energy-conservation practices. When the use or installation does not conform to the safety, installation, sanitary, or energy-conservation requirements, the tenant must be requested to order its removal.

b. Safety Requirements - The electrical circuit must have sufficient capacity to handle the additional load requirements. The appliance must bear the label of Underwriters' Laboratories or another approved testing laboratory and be free of any defect at the time of installation. All electrical appliances must be turned off when not needed.

c. Installation Requirements

(1) Hot plates and similar appliances may be installed only at the locations approved by the building manager, and must be permanently wired through a combination switch and pilot light.

(2) No obstruction may be within 48 inches of the front of the appliance. The clearance between the appliance and unprotected combustibles must be at least 6 inches on all sides facing the combustible material, and 36 inches overhead. If exposed to combustible material where these clearances are not possible, the combustible material must be protected by sheet metal not less than 24 U.S. gauge.

3-602 FACILITIES FOR THE HANDICAPPED

Within funds available, facilities for the handicapped are provided in the following order of preference: (See HBK RE-4, Standards for Facility Accessibility by the Physically Handicapped.)

a. Ramps - At all buildings without a street level entrance, provide at least one ramp. The ramp shall preferably have a slope of 5%, but if this is not feasible, the slope shall not exceed 1 foot in 12 feet, and be in accordance with the minimum standards contained in ANSI A117.1.

b. Toilets - One men's and one women's toilet, preferably on the first floor, and, if feasible, on each floor, are provided, with a water closet 39 inches wide, with assist bars, and with a door 30 inches wide which swings out. If feasible, the water closet is mounted 20 inches above the floor. Entrance to toilet rooms must be a minimum of 3-feet wide.

c. Drinking Fountains - One drinking fountain per floor, mounted with the top of the bubbler not over 38 inches above the floor.

d. Telephones - At least one public telephone, mounted 32 inches above the floor near the entrance for the handicapped. If a recess is provided for this shelf, it may not be less than 30 inches wide. Also see Section 15-5.

e. Elevators - Elevators for passengers or passengers and freight, installed in multistory buildings accessible to and usable by physically handicapped persons, must conform to the Suggested Minimum Passenger Elevator Requirements for the Handicapped, developed by the National Elevator Industry, Inc., in compliance with ANSI A17.1 Safety Code for Elevators.

3-603 INSTALLATION OF SPECIAL EQUIPMENT

3-603.1 Special Purpose Space

Space occupied by special equipment such as electronic data processing, laboratory, etc. sometimes requires special environmental consideration and is subject to continuous operation. It is, therefore, considered to be special purpose space. When needed, this space is provided with special air-conditioning units to prevent the inefficient operation of the large central chiller to serve only this small area.

3-603.2 USPS Electronic Equipment Space

All construction and installation costs incident to providing this special purpose space are charged to the account supporting the installation rather than to the maintenance of the building.

3-603.3 Tenants' Electronic Equipment

All construction and installation are the funding responsibility of the benefiting tenant and are arranged for in accordance with Section 3-2. Where special purpose air-conditioning or emergency generators are required, their funding is also the responsibility of the benefiting tenant.

3-603.4 Submeters

When tenants install equipment which increases utility consumption beyond normal office usage, submeters should be installed (kWh, steam, etc.), and monthly recordings of submeter readings

b. A standard Armed Forces recruiting sign has been adopted by the Department of Defense to be used where two or more recruiting offices are staffed by full-time recruiters. Install this sign on the exterior grounds near the main entrance so as to be clearly visible to pedestrians. This standard recruiting sign may be obtained from local sources upon request of the Corps of Engineers Division or District Office, provided that the proposed sign location is concurred in by the USPS building manager and the cost of the sign and its installation are reimbursable. Plans and specifications for this sign are shown by Figure 3-3. A Department of Defense directive prescribes the order of precedence of the services shown in the illustration, and must be honored.

c. An alternative to the standard sign is shown by Figure 3-4. It may be placed where it is not practical to install the standard sign, such as where two or more services are quartered in a store fronting on a sidewalk, and where there is no grassed or other available area. The remaining provisions contained in the preceding paragraphs apply.

d. An "A" frame may continue to be used by single service recruiters which normally have offices within the building. However, these signs must be securely fastened so that they cannot be turned over by the wind. Recruiting signs or banners are not to be displayed from the windows of USPS buildings.

e. Where recruiting offices are established, their location or room numbers should be indicated in the lobby. Directory boards are the preferred interior method for identifying location of the recruiting offices.

3-609 PRIVATE TOILETS AND SHOWER FACILITIES

3-609.1 Provision of Private Facilities

It is USPS policy to make no provision for private toilet and shower facilities in general purpose office space. Possible exceptions to this are:

a. Private toilet facilities may be provided for judges, court and Justice Department officials as provided in the GSA Handbook, United States Courts. The USPS does not fund installation of these facilities.

b. Private toilet facilities may be provided for postmasters where authorized as in HBK AS-504, Space Requirements.

c. Special toilet facilities may be provided for certain types of installations where the nature of the operation precludes the use of the general toilet facilities. In this category are toilet facilities attached to medical units, health units, detention cells, postal inspection installations which adjoin entrances to lookouts, continuous duty posts such as FBI duty rooms, and similar installations. These toilets must be located advantageously to serve the greatest number of employees. The possibility of reassignment of the space to other agencies must be considered in locating these facilities and the location must be selected on the basis of minimum obstruction to future agency layouts. The benefiting agency funds installation of those facilities.

e. Voter entrances and exits must be arranged to ensure the security of the mails.

f. Workroom space, where mail is not totally isolated to preclude access by unauthorized individuals, must not be used for voting.

g. Local law enforcement officials must agree in advance to enforce both Postal Service Regulations governing conduct on postal premises and applicable state and local laws during the voting.

h. The State or local government must agree in advance to reimburse any costs incurred by the Postal Service for additional security, utilities, or building operation necessary for the use of the facility for voting.

i. The display or distribution of any political literature, badges, insignia, or posters on Postal Service property, including parking areas, is prohibited.

3-613.2 A request to use a USPS facility for voting must be received by the Headquarters Operating Policies Office, Operations Support Group, through the Field Division General Manager/Postmaster, not less than 60 days before the scheduled election, for approval by the Postmaster General or designee. The request must include complete details addressing each of the conditions listed in 3-613.1. Requests must be made and approvals must be obtained for each election use of a USPS facility for voting.

3-613.3 Requests to use the grounds of USPS facilities for political meetings or rallies must be denied. This longstanding practice was established because such use:

a. Tends to encourage partisan political activities in Federal space, which is prohibited by law.

b. May require that the building remain open beyond normal operating hours.

c. Greatly increases traffic in the building, creates cleaning and other maintenance problems, increases costs, and may create liability problems.

d. Interferes with the conduct of USPS business.

e. May be viewed as evidence of Federal participation in the local election process.

3-614 SOLICITING, ELECTIONEERING, COLLECTING DEBTS, VENDING, AND ADVERTISING

With certain specific exceptions, soliciting alms and contributions, campaigning for election to any public office, collecting private debts, commercial soliciting and vending, and the display or distribution of commercial advertising on postal premises are prohibited. These and related specific rules and regulations governing conduct on postal property are found in POM 221.6 and are reprinted as Poster No. 7.

contract, are contained in Short Form Specifications, HBK RE-10. This specification may also be used as a guide for planting, replanting, and maintaining trees, shrubs, etc. To enhance the appearance of the grounds and buildings, landscaping should be arranged to conform to that of adjacent premises.

5-201.3 The divisional office shall review any proposed landscaping which may aesthetically affect the architectural appearance of large or monumental type buildings.

5-202 ISOLATED LOCATIONS

In situations where there are wide expanses of isolated grounds not in the public view, maintenance shall be limited to the elimination of fire, safety, and health hazards (as required by local ordinances), and the prevention of soil erosion and depreciation of land values.

5-203 TECHNICAL ASSISTANCE

Due to the varying climatic and soil conditions throughout the country, the recommendations and services of the local agricultural agent or State university should be solicited regarding grass seed mixtures, fertilizing, liming needs, filling, sodding, care of trees and shrubs, frequency for mowing and watering grass, and other grounds maintenance problems. This service should be free. Local garden clubs are also a good source of advice.

5-204 EQUIPMENT

The equipment purchased should be of a make and size most effective for the work to be accomplished after considering the cost of equipment versus workhour savings. All mowers, cutting tools, and related equipment shall be maintained in good working order. Gasoline and other fuels shall be properly stored throughout the year. During out-of-season months, any necessary equipment overhauls shall be accomplished, and the equipment shall be properly protected and stored.

5-3 APPROACHES

5-301 GENERAL

The maintenance and repair of driveways, maneuvering areas, sidewalks, and curbs on USPS property is essential. The quality and composition of repair and replacement materials, as well as applications methods, should conform closely to those found most effective for local areas by the highway or street department. Timely preventive maintenance such as application of a seal coat to asphalt paving will prevent deterioration and eventual major repairs. Where cracks, spalled areas, potholes and ruts have already occurred, immediate repairs must be made to prevent further damage to the paving but also to eliminate a safety hazard and a source of damage to vehicles. Applicable Short Form Specifications, HBK RE-10 and Maintenance Bulletin MMO-2-77 should be used for maintenance repair projects.

5-302 SIDEWALKS

Particular attention should be given to sidewalk areas adjacent to USPS buildings. Cracked, raised, or sunken sidewalks should be repaired or replaced promptly. If the sidewalks adjacent to USPS property need repair or replacement and are the responsibility of the State or local government, every effort shall be made to obtain repair or replacement at the expense of the State or local government. If the State or

SECTION 6

STRUCTURES

6-1 RESPONSIBILITIES

6-101 GENERAL

This section deals with topics that are typical of those encountered by personnel concerned with the structural features of USPS buildings. Building managers must be informed of the condition of the structural elements of all buildings for which they are responsible.

6-102 ADHERENCE TO CODES

Compliance with local codes and ordinances or model building code is required as a minimum standard. Where USPS handbooks, guidelines, or other directives are more stringent as related to structural requirements, these shall be followed.

6-2 STRUCTURAL MAINTENANCE AND REPAIR

The building structure requires routine maintenance. The work required to maintain and preserve a building, such as painting, pointing, roofing, and weatherproofing is developed by engineering inspections defined in HBK MS-7, Repair and Alteration of Real Property, and HBK MS-6, Repair and Alteration Surveys, and is usually accomplished by contract. The building managers are responsible for having a building inspection conducted at least once a year in all buildings for which they are responsible. The purpose of this local inspection is to identify developing problems in their earliest stages so that they can be corrected at a minimal cost to the USPS. This inspection shall include the roof and should ideally be conducted in either the spring or the fall of the year. Also included in the local inspection should be interior features such as floors, blinds, door locks, and partitions. The need to service these items shall be noted by all USPS personnel in the facility during their normal job performance and reported to the building manager. Preventive maintenance guides for entrance doors, power-operated doors, and other structural items that require preventive maintenance are in Section 13. Short Form Specifications, HBK RE-10, are used for local contracts and as a guide for work performed by USPS maintenance employees.

6-3 FACILITY REQUIREMENTS AND RESPONSIBILITIES

6-301 PLACING OF SEALS, PLAQUES, AND MEMORIALS IN USPS BUILDINGS

The policy on dedicatory plaques and memorials is in ASM 518.14.

6-302 FLOOR LOADS

Building managers are responsible for preventing unsafe floor loading in any space that they manage. In fulfilling this responsibility they shall keep readily available information showing the maximum loading that may be permitted on any floor in the building. A convenient and appropriate place for this information is on the assignment plan for each building. OSHA requires that the building manager place plates, on which the approved floor load has been marked, in a conspicuous place in each area to which they relate (OSHA 1910.22(d)(1)). If the safe loading figure is not known or not available, it should be obtained with the assistance of the divisional office. In some

Any succeeding lines required to identify the major organizational element occupying the room or suite of rooms must be mounted and abutting the top holder. Organizational information on these signs should be the same as the titles displayed on main lobby or floor directory boards.

6-304.4 Room Number and Use Identification

Room number and use identification signs are used to identify public and building service spaces. Symbol-signs to be used for this purpose are specified in HBK MS-54A.

6-305 CORRIDOR IDENTIFICATION

Corridors are identified on assignment plans and labeled by postal personnel. The size and type of lettering to be used depends on the size of the building, length and width of the corridors and other features of the building. It may be desirable to provide directional information in some parts of the building; for example, near elevator banks to show the location of commonly visited space such as first aid room, library, auditorium, etc. Signs of this type should be applied to the corridor walls using lettering specified in HBK MS-54A. Outrigger or ceiling-hung signs, other than those provided in the construction project, are prohibited. Occasionally a sign visible from a distance is needed. A neat sign on a movable stand may serve if the need for it is temporary. To meet the needs of long duration, appropriate signs on corridor walls are preferred.

6-306 HISTORIC PRESERVATION

It is USPS policy to comply with the National Historic Preservation Act and all regulations issued pursuant to it. Procedures for handling historic properties are covered in ASM 515, 518; HBK RE-1, Realty Acquisition and Management, Section 4-303; and MI AS-510-84-2.

6-307 ARTWORK

Proper care and maintenance of artwork in postal-owned buildings is covered in ASM 515; HBK RE-1, Section 4-303; and MMO-72-85.

6-4 IDENTIFICATION OF USPS BUILDINGS

6-401 GENERAL

All postal installations must be clearly identified to ensure customer recognition of the facility. Refer to ASM 518.1 for policy and guidance on building identification.

6-402 REMOVAL OF BUILDING DESIGNATION

Prior to the disposal of USPS-owned property, all signs, including "U.S. Property -- No Trespassing" signs, which designate the building name or Federal ownership, must be removed. This is done just prior to transfer of title.

used only when one or both of the following conditions exist:

a. Destruction of classified, pathological waste, or other material involving a security or safety hazard is required;

b. Municipal or private disposal facilities are not available or are inadequate for the quantities of material involved.

7-302 BIRD CONTROL

7-302.1 General

The methods of bird control fall into four general groups. All of these are harmless to the birds themselves, and may be expected to drive them to other unprotected locations. The results obtained with the various methods show that definite improvements in the bird problem are possible. Most of the methods have limitations, and careful consideration is necessary to assure that the method selected is suitable for the location. Listed below are brief descriptions of various methods.

7-302.2 High Voltage Method

This method consists of installing pairs of wires mounted on insulators, attached to the area to be protected. When the birds short the two wires with their feet, they receive a high-voltage, low-current shock which is repeated at intervals until the short is removed when the birds leave. Installation of this method requires a contractor who is familiar with this specialty. The results with this system are excellent. Initial cost of this installation is high, but it is a permanent solution to the problem.

7-302.3 Chemical Method

This method uses a viscous, slow-drying material applied to the roosting surfaces with a paint brush or caulking gun. The chemical-control method is very successful for a short time. Application must be repeated three or more times per year. Cost of application is low where extensive scaffolding is not required.

7-302.4 High Frequency and Audible Sound

Ultrahigh frequency sound usually does not produce satisfactory results. The use of audible sound (such as distress cries of a starling) and the sonic method have had only limited success.

7-302.5 Secret Proprietary Methods

Of the methods tested thus far, the most successful was effective for approximately 10 months, and repeated treatments were much less effective. If there is not a logical explanation of how a proprietary method works, its effectiveness should be evaluated before commitments are made. Consultation with divisional or MTSC personnel is advisable.

7-303 CLEANING IN CONCESSION SPACE

The special cleaning requirements of concession space and responsibility are detailed in HBK EL-602, Food Service Operation.

7-304 USE OF WALK-OFF MATS

Walk-off floormats are used at major public entrances to trap dirt carried in from the street and prevent its distribution throughout the building. Two sets of mats normally should be provided to permit removal and proper cleaning. The mats will be cleaned daily as a part of the lobby and entrance cleaning assignment. Light soil may be removed by vacuuming. During inclement weather, when the mats are badly soiled, they should be removed and

lists is required for support of the equipment. When maintenance is difficult, the contract officer who arranged the procurement may be of help in determining warranty applicability and communicating with the supplier. If local resources are exhausted, the problem should be transmitted to the divisional office and to MTSC using Form 4568, Maintenance Problem Feedback Report. Instructions for use are printed on the form.

American Standard Safety Code for Elevators, Dumbwaiters, and Escalators, ASME/ANSI A17.1. State and local regulations or codes should be applied in harmony with this code. The building manager is responsible for obtaining the latest copies of the referenced publications and making them available to the personnel who are assigned to the maintenance, upkeep, and repair of vertical transportation equipment. The code is continually being revised and improved. Some of its newer rules apply principally to new installations and it is not financially practical to apply them to existing installations unless an extensive modernization is undertaken. If the cost of changing an existing installation to meet a code requirement is out of proportion to the benefits to be derived, the division may use administrative discretion about the requirement, provided legal conformity and reasonable safety are assured, and provided instructions to the contrary have not been issued.

8-106 SIGNS

All signs used to designate service, to identify cars and landings, and to instruct the public or building occupants regarding operation of elevators and escalators are to be furnished by the building manager and are described below:

a. Posting Hours of Service - The hours of operation of each manually operated elevator must be posted at each main-floor landing.

b. Identification of Escalators and Dumbwaiters - Each escalator and dumbwaiter is identified by letter or number at each floor with a posted sign similar to that used to identify elevators.

c. Identification of Elevators - An identification sign must be installed on the wall at each bank of elevators near the elevator entrance at each landing. This sign shows the number of the car as designated on the construction drawings and also the elevator function, i.e., passenger only, freight only, or passenger and freight.

d. Out-of-Service Notice - This sign is used to identify elevators which are not operating. The signs must be neatly made and bear the words "This Elevator is Being Serviced. Please Use Elevator No."

e. Identification of Floor Landings - The floor number of each elevator and escalator landing must be identified, either by placing the floor designation of each hoistway door edge so that it is visible as the door opens, or by posting the floor number in a door card or certificate holder placed on a wall in a location readily visible as the car door opens.

f. No Smoking - For fire and safety reasons or to comply with local regulations where required, smoking on elevators can be discouraged by installing "Please No Smoking" signs in plain view on the rear wall of the car, visible to persons entering. Lettering approximately one-inch high is suggested.

g. Emergency Instructions - Procedures to be followed in case of emergency must be conspicuously placed in each elevator car. An example of typical instructions is shown in Figure 8-1. The lettering should be phosphorescent in case of lighting failure.

h. Carrying Passengers on Freight Elevators - Each freight elevator which meets the conditions stated

in Paragraph 8-109 must have a sign indicating that only employee passengers are permitted to ride on it.

i. Using Elevators During Emergencies:

A sign must be conspicuously posted advising not to use elevators for evacuation during fire or other emergency.

j. In Addition to Capacity and Data Plates:

(1) In every freight elevator, a sign shall specify the type of loading for which the elevator is designed and installed. The wording of the sign must be as specified in ASME/ANSI A17.1.

(2) Classes of loading are:

(a) Class A: General Freight Loading. Where the load is distributed, the weight of any single piece of freight or of any single hand truck and its load is not more than 1/4 the rated load of the elevator, and the load is handled on and off the car platform manually or by means of hand trucks.

(b) Class B: Motor Vehicle Loading. Where the elevator is used solely to carry trucks or passenger automobiles up to the rated capacity of the elevator.

(c) Class C1: Industrial Truck Loading. Where truck is carried by the elevator.

(d) Class C2: Industrial Truck Loading. Where truck is not usually carried by the elevator but used only for loading and unloading.

(e) Class C3: Other Loading with Heavy Concentrations. Where truck is not usually used.

These loadings apply where the weight of the concentrated load including a powered industrial or hand truck, if used, is more than 1/4 the rated load and where the load to be carried does not exceed the rated load.

8-107 LOCKING OF ELEVATOR SPACES

Elevator machine rooms and pit entrances must be kept locked at all times. Only qualified mechanics, inspectors, or persons in their company are permitted in these spaces. Doors to these spaces must be self-closing and self-locking.

8-108 ELEVATOR DATA CARD

Form 4813, Elevator Data Card, Figure 8-2, must be completed and maintained in the maintenance office for each elevator.

8-109 CARRYING PASSENGERS ON FREIGHT ELEVATORS

a. Freight elevators, not accessible to the general public, may carry employees subject to the following conditions:

(1) The rated load of the elevator is not less than that required for a passenger elevator of equivalent inside net platform area as required by Rule 207.1 of ANSI A17.1.

understand the parts applicable to elevators, and understand their responsibility for their own personal safety, the safety of fellow employees, and the safety of the public using elevators they service.

b. When an elevator operates improperly or in a manner that causes doubt about its safety or reliability, it must be immediately removed from service. The cause of the improper operation must be determined and corrected, and the elevator tested prior to returning it to service.

c. In no instance may elevator mechanisms or controls be manipulated or temporarily altered to expedite repairs. All alterations, both mechanical and electrical, must be approved by a professional engineer and certified for compliance with ASME/ANSI A17.1. Any alteration to the controller should be approved by the controller's manufacturer.

d. When an elevator malfunction is reported, the elevator MUST BE TAKEN OUT OF SERVICE IMMEDIATELY. The person responding to the call performs the following before troubleshooting the malfunction:

(1) Determine that no one is on the elevator, and shut it down.

(2) Post "OUT OF SERVICE" signs in front of hoistway door at each level.

e. The source of the malfunction must be determined, proper repairs and corrections made, and the elevator thoroughly tested prior to returning it to service.

f. Prior to performing any work, however minor, on an elevator, signs must be placed in front of the hoistway door at each level, advising that the elevator is out of service. (See Para. 8-106d). Signs supported by a chain suspended from each side of the hoistway door, attached to the door facing with magnets, are recommended. Magnetic signs attached directly to the hoistway door must not be used since they would not be visible when the door is open. Other types of barricades may be used; however, they should be constructed to allow passengers to leave an elevator without excessive effort.

g. If persons are trapped in a stalled elevator, follow the procedures in Appendix 8A.

h. Elevator mechanics must be provided with the proper tools and equipment for servicing elevators. Only high-quality meters may be used to test elevator circuits. Test lamps must never be used since the lamps will often draw sufficient current to operate relays.

i. Only qualified elevator mechanics, inspectors, or persons in their company are allowed to enter elevator machine rooms or pits. In no instance should anyone other than a qualified elevator mechanic who is familiar with the equipment enter a machine room to try to get a stalled elevator started.

8-202 REPAIRS

Major repairs or replacements are included in the repair program. Repairs not of an emergency nature should be scheduled for a time which will not affect building service.

signed when inspections are made, and the elevator, dumbwaiter, or escalator MUST NOT BE OPERATED WITHOUT A CERTIFICATE. Specific inspection requirements are contained in Management Instructions AS-620-82-12 and AS 620-84-14.

8-302 SCHEDULING INSPECTIONS AND TESTS

The program schedule of regular inspections is prepared a year in advance with a plan for performance of the inspection by a qualified inspector. Building managers are primarily responsible for assuring that all elevators under their control are scheduled for inspection before current certificates expire.

8-303 INSPECTOR QUALIFICATIONS

Inspections are made by elevator inspectors, elevator engineers, or by mechanical, electrical, or safety engineers who meet the standard set in ANSI/ASME QE1-1-1984 Standard for Qualification of Elevator Inspectors.

The suggested sources of elevator inspectors are listed below:

a. USPS personnel, GSA, or other Federal agency which has qualified elevator inspectors who regularly perform inspections of their own elevators. Names and locations of USPS elevator inspectors are identified in maintenance bulletins which are updated when necessary.

b. Municipal or State code enforcing authority which performs elevator inspections in privately owned facilities. When arranging for these inspections, it must be clearly understood by the municipal and/or state representative that the Postal Service as an independent establishment of the U.S. government is not subject to State or local regulation or licensing of its elevators. The inspection is to be performed as a service and will not obligate the Postal Service to comply with local licenses or code requirements beyond the national standard.

c. Qualified elevator service companies. The term "Inspector" as used here refers to any one of these qualified persons. The mechanic in charge of maintaining the equipment or some other responsible representative of the USPS should accompany the inspector. Where elevators are maintained by contract, the maintenance contractor is not eligible to perform inspection. However, the maintenance contractor must perform the required tests in the presence of the inspector. The Field Division General Manager/Postmaster may make exception to this rule at small remote locations where excessive expense would otherwise be incurred. Such instances require specific approval on a case-by-case basis and a different person (other than the one assigned responsibility) in the employment of the contractor is allowed to perform the inspections and required to complete the appropriate USPS checklist. A copy of the completed checklist is furnished to the Field Division General Manager/ Postmaster. Also at least every third inspection must be made by a USPS-certified elevator inspector. These exceptions must be reported to the MTSC Field Director.

8-304 INSPECTION FREQUENCY

8-304.1 All passenger elevators, freight elevators, escalators, and moving walks must be inspected at least every 6 months.

d. Form 4089, Inspection Checklist - Direct Plunger Oil Hydraulic Elevator.

e. Escalator Inspection Checklist (issued by Maintenance Bulletin).

f. Power Dumbwaiter Inspection Checklist (issued by Maintenance Bulletin).

8-306.1 USPS-Certified Inspectors

USPS-Certified Elevator Inspectors must complete applicable checklists when performing inspections.

8-306.2 Contract Inspectors

When inspections are contracted with private firms, i.e., A/E, maintenance contractors, and insurance companies, completion of appropriate checklist(s) must be made a part of the contract.

8-306.3 Local, State Government or Other Federal Agencies' Inspections

When inspection is performed by local, state government, or other federal agencies' inspectors, they must be requested to complete the appropriate checklist. If they refuse, a copy of the checklist used must be compared to the appropriate USPS checklist to assure that the inspection meets National ASME/ANSI A17.1 and USPS standards.

8-306.4 Retention

For each inspection, the USPS inspector retains a copy of the complete checklist and furnishes one copy to the local office along with the certificate and inspection report. The local office retains the completed checklist for 10 years.

8-307 CERTIFICATE OF INSPECTION

If an elevator, escalator, or dumbwaiter meets the safety requirements and there are no serious maintenance deficiencies, the inspector shall promptly prepare Form 279, Certificate of Inspection, Figure 8-3. The person responsible for maintaining the equipment countersigns the certificate and displays it in the car, to show that the equipment has passed inspection. Certificates for escalators are posted on or near the machine. The certificate has additional spaces to be filled in when the equipment is reinspected. Whenever another inspection is made and the requirements are met, the inspector and the person responsible for the maintenance of the equipment sign the certificate and date it. When all the spaces are filled in, the inspector shall issue a new certificate. If the certificate becomes soiled or unsightly before all the spaces are used, it should be replaced.

8-308 UNSAFE EQUIPMENT

If the equipment fails to meet the requirements, the inspector shall withdraw the certificate. If the inspector finds a condition that might cause an accident or serious mechanical failure, he shall withdraw the certificate and notify the building manager, or other responsible official, that the equipment is unsafe and must not be used. Notify other parties specified in Paragraph V of AS-620-82-12 and paragraph IV of AS 620-84-14.

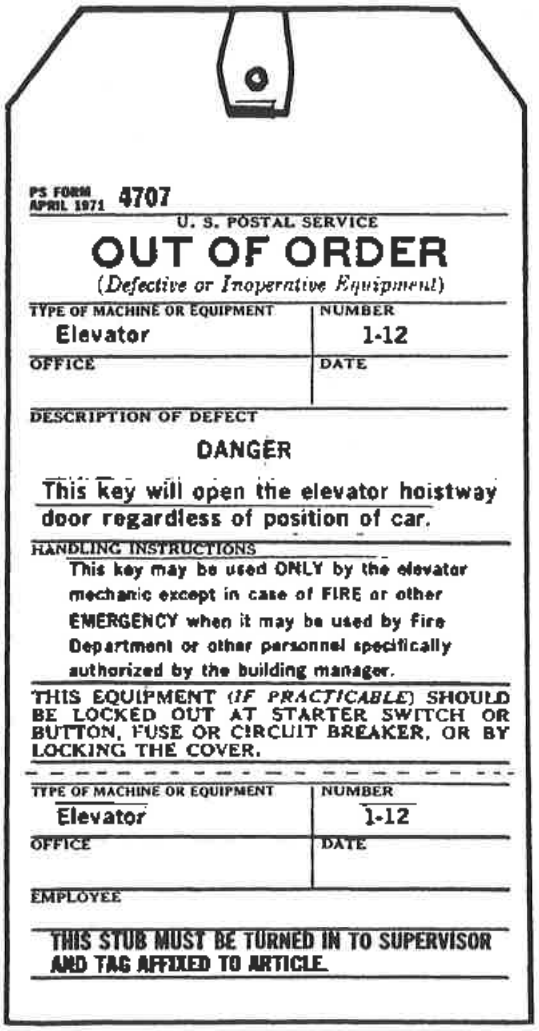
8-4 SPECIAL REQUIREMENTS AND PROCEDURES

8-401 RELEASING PASSENGERS FROM STALLED ELEVATORS

The release of passengers from a stalled elevator is very hazardous if

8-405 EMERGENCY LIGHTING UNITS FOR ELEVATOR CARS

An emergency lighting unit shall be installed in each car (including freight). It serves to allay fears in the event of a blown fuse or a more serious power failure, and it provides illumination for the control panel and the telephone.



PS FORM APRIL 1971 4707

U. S. POSTAL SERVICE

OUT OF ORDER

(Defective or Inoperative Equipment)

TYPE OF MACHINE OR EQUIPMENT	NUMBER
Elevator	1-12
OFFICE	DATE

DESCRIPTION OF DEFECT

DANGER

This key will open the elevator hoistway door regardless of position of car.

HANDLING INSTRUCTIONS

This key may be used ONLY by the elevator mechanic except in case of FIRE or other EMERGENCY when it may be used by Fire Department or other personnel specifically authorized by the building manager.

THIS EQUIPMENT *(IF PRACTICABLE)* SHOULD BE LOCKED OUT AT STARTER SWITCH OR BUTTON, FUSE OR CIRCUIT BREAKER, OR BY LOCKING THE COVER.

TYPE OF MACHINE OR EQUIPMENT	NUMBER
Elevator	1-12
OFFICE	DATE

EMPLOYEE

THIS STUB MUST BE TURNED IN TO SUPERVISOR AND TAG AFFIXED TO ARTICLE

Figure 8-4. OUT OF ORDER TAG

other than normal means. The procedures in Appendix 8-B do not require the movement of a car by other than normal or inspection means. It should be noted that under each and every procedure, the main electrical disconnect switch shall be opened and locked, and the emergency stop switch inside the car placed in the stop position before the trapped passengers are helped from the car.

6. After the passengers are released, the elevator shall be thoroughly and carefully inspected and the cause of the trouble corrected before the service is resumed.

7. The incident shall be documented with a complete report containing the following:

a. Before summary of the incident

b. Cause of the trouble

c. Action taken to correct problem

d. Action taken to prevent recurrence

e. Names of persons entrapped and any possible injury

5. EQUIPMENT REQUIRED AND STORAGE LOCATION

The following equipment is stored in _____ and marked to indicate for emergency use only.

a. Two 8-foot ladders
b. Hoistway door unlocking key
c. Elevator side emergency door key
d. Two safety belts
e. Sledge hammer and pry bar (forcible entry tool)
f. Two flashlights with fresh batteries
g. 20 feet of 1/2-inch nylon rope
h. Portable evacuation bridge
i. Two-way radio

(This is just a sample list. Any item that is needed for a particular plan must be included.)

6. PROCEDURES - The person receiving the call (usually in Maintenance Control) must:

a. Acknowledge the call and maintain communications.
b. Contact the rescue team leader and set procedure in motion.
c. Advise persons in the car:

(1) Steps are being taken to rescue them.
(2) They are safe.
(3) They must stand clear of the door when it opens.
(4) They must not smoke.
(5) They must not try to leave the car unaided.

d. Find out the following:

(1) Is the emergency stop switch in the run position?
(2) Number of persons in the car
(3) Is any person in the car ill, injured, or handicapped?
(4) Are the lights on in the car?
(5) The location of the car in the hoistway (if known)

7. BEFORE PROCEEDING - Do the following:

a. Determine that the mainline disconnect is in the closed position. (Someone may have mistakenly opened the switch stopping the elevator.)

b. If elevator is equipped with firefighter's service, activate the switch to recall the elevator to the designated level. If this does not work, proceed with the rescue.

8. Use the safety belt to move persons from the stalled elevator to the rescue elevator across the rescue bridge one at a time.

9. After all persons are removed from the stalled car, move them to the most convenient landing in the rescue elevator. If the stalled elevator is heavily loaded, it may be necessary to make two trips with the rescue elevator. Likewise, if there are persons severely distressed or in need of medical attention, move them promptly and come back for remaining passengers.

Procedure IV.

Top Emergency Exit (Three-person Rescue Team)

Application: Procedure I, II, or III cannot be used.

1. Locate the car.

2. Open and lock disconnect for stalled car and have someone in the stalled car place the stop switch in the stop position.

3. Advise persons in the car of the rescue procedure.

4. Open the hoistway door immediately above car (forcibly, if necessary).

5. If car top is three feet or more below the landing, place ladder (with nonskid feet) from landing to car top.

6. Remove car top emergency exit cover and place a second ladder (with nonskid feet) through exit into car.

7. Have member of rescue team enter the car.

8. With rescue team members stationed in the car, on top of car, and at the landing, use a safety belt to move the passengers from the car to the landing one at a time. Give priority to passengers that may need medical attention.

PROCEDURE FOR HYDRAULIC ELEVATOR

Procedure I.

Movement of Car by Normal Means.

If there is electric power to the elevator and an elevator mechanic is available, the source of the problem should be identified and the elevator moved to the nearest landing by the mechanic. If this cannot be accomplished in less than 30 minutes, proceed with Procedure II or III.

Procedure II.

Hoistway Door (Two-person Rescue Team)

Application: If elevator is within 3 feet of a landing and hoistway door can be opened.

1. Open and lock electric disconnect in machine room to remove power from drive machinery.

2. Instruct persons in car to put the stop switch in the stop position.

3. Locate car and open hoistway door with unlocking device. (Note: If hoistway door is not equipped with an unlocking device and car is above the landing, it may be possible for someone in the car to open the car door and unlock the hoistway door.)

SECTION 9

ELECTRICAL SYSTEMS

9-1 BUILDING SERVICE

9-101 UTILITY COMPANY CONTACTS

The building manager shall maintain liaison with the electric utility company. This liaison is essential to utility conservation and the management functions set forth in this handbook.

9-102 PROCEDURE FOR OBTAINING OR CHANGING UTILITY SERVICE

Procurement of utility services shall be made in accordance with the procedures prescribed in the Postal Contracting Manual, Publication 41, using GSA area-wide utilities contracts when available (see PCM 5-604).

9-103 UTILITY RATES AND BILLS

It is the responsibility of the postmaster or designated building manager to determine that all building electrical power is being purchased under the most favorable utility rate. A copy of each building's monthly electrical bill shall be routed through the building manager's office. This may be a copy of the bill rendered to the divisional finance office. When needed, the building manager shall request technical assistance from the divisional office.

9-104 ELECTRICAL ENERGY COSTS

Electrical energy costs for a specific building depend primarily on the level of lighting, the use of air-conditioning, the type of building occupancy, and the hours of use of the building. The procedures for evaluating electrical utility cost are in HBK MS-49.

9-2 MAINTENANCE AND REPAIR REQUIREMENTS

9-201 MAINTENANCE

Maintenance and servicing of electrical systems and equipment shall be in accordance with the preventive maintenance guides in Section 13 of this handbook and HBK MS-28, Maintenance of Electrical Switchgear. The "Standard Work Practices - Electrical Equipment" in Appendix 9-A of this section shall be carefully reviewed and understood by all personnel performing maintenance on electrical equipment. Also, the proper performance of this maintenance, while at relatively infrequent intervals, is essential to the safety of the building and its occupants. If performed by contract maintenance, incorporate these maintenance guides, instructions, and checkpoints in the contract specification. Work specified in Guide E-29 may be beyond local capability and should be contracted as necessary.

9-202 CODE REQUIREMENTS

The National Electrical Code shall be used as the minimum safety requirement for any electrical modifications performed by the USPS or contract personnel. It is the building manager's and each electrician's responsibility to see that existing violations of the code are corrected.

9-203 CONTRACT WORK

The building manager shall use Short Form Specifications, HBK RE-10, for electrical repair or improvement work contracts under $2,000 whenever the

with an orange strip applied to the floor surface and the words "Danger-High Voltage" shall be stenciled at 10-foot intervals. The lettering shall be black and at least 2 inches in height. High-voltage ducts encased in concrete and run in attics, basements, or vertical shafts must be painted orange, and marked with the words "Danger-High Voltage" applied as above.

9-210 PIPING IN ELECTRICAL ROOMS

No water, steam, vent, or drain pipes are permitted in any transformer vault, switchgear, switchboard, or computer room. Any such piping currently existing within these rooms which would be prohibitive in cost to remove, must be enclosed with a suitable watertight sheath to carry any liquid to the outside of the room or vault.

9-211 INSULATING MATS AND GLOVES

Rubber insulating gloves are not authorized except as specifically required by circumstances identified in Appendix 9-A. If insulated gloves are present in the facility, they shall be maintained in good condition and be carefully inspected before each use. The gloves shall be sent to a certified testing facility annually for testing and certification. At no time will gloves that have failed certification be allowed to remain in the facility for any purpose. Insulated mats shall not be permanently placed at any electrical panel or enclosure. If mats are maintained in any USPS facility, they shall be stored in a protective tube, inspected carefully before each use, and tested by a certified testing facility annually. All service contracts for high-voltage systems shall require the contractors to provide their own safety equipment.

9-212 PORTABLE METAL LADDERS

Portable metal ladders shall not be used where there is a possibility of the ladder becoming energized from electrical circuits, equipment, or apparatus, or where the metal ladder may become an accidental ground for the workman on the ladder.

9-213 WIRING DIAGRAMS AND SCHEMATICS

The building records should contain as-built diagrams and schematics. The accuracy of the drawings should be checked by personnel having knowledge of electrical equipment. If the drawings are not on file, and copies cannot be obtained, new drawings will have to be made. If an electrical equipment survey is to be made by service contract, provisions should be made in the contract for drafting new or revised drawings. The drawings will have sufficient identification of parts and control relationships to allow troubleshooting in case of breakdown as well as planning preventive maintenance procedures and sequences. Any subsequent electrical modification of the building or building equipment will be accompanied by suitable drawing revisions. The scope of a new electrical contract shall include update of electrical drawings and new calculations with the additional load included.

9-3 DISTRIBUTION SYSTEMS AND FACILITIES

9-301 KILOWATT-HOUR SUBMETERS

Kitchen and cafeteria power, refrigeration units of 200 tons or more, and electronic computer systems, including the computer ventilation and refrigeration, must be submetered. Whenever any change to this equipment is made, care shall be taken to include all

generally be designed for 1400W of connected load. Connected lighting load on 277V lighting circuits should not exceed 3200W. Generally, a maximum of eight duplex receptacles should be connected to one circuit. Home runs to panelboards should not be run through outlet boxes for switches.

9-308 CONVENIENCE OUTLETS

The USPS has the responsibility to furnish outlets needed for normal office activity in space it provides, and also when required because of moves ordered by the USPS. Normal requirement is interpreted to be one duplex outlet for 80 to 100 square feet of space since this is the usual amount of space allowed per occupant. Only grounding type duplex receptacles shall be installed for new convenience receptacles or when replacing existing receptacles. Receptacles shall be installed in accordance with all National Electrical Code requirements and shall be mounted approximately 12 inches above the floor when installed on walls and partitions.

9-309 POWER AND CONVENIENCE OUTLETS FOR MAINTENANCE USE

Wire closets, mechanical equipment rooms, electrical equipment rooms, transformer rooms, switchgear rooms, elevator hoistways and pits, conveyor and escalator landings, satellite shops, and outside custodial storage areas shall be provided with special power outlets.

9-310 POWER CABLE TESTING

Periodic high-voltage testing of power cables is not required. In the event of a switchboard or switchgear failure and subsequent testing and repair, testing of the power cables is recommended as part of the restoration. Cables should be maintained clean and dry, and be protected from mechanical damage.

9-310.1 One-time high-voltage testing may be performed if:

a. There is suspected fault or leakage.

b. There has been mechanical damage to the cable.

c. A cable is newly installed or is being returned to service after a long period of nonuse.

9-310.2 When it is determined that this is necessary, only the DC step-voltage insulation-testing method shall be used. This testing shall be contracted to nationally recognized testing companies with experience, equipment, and expertise to properly perform the test. Improper testing can result in damage to the cables.

9-311 EQUIPMENT GROUND

The electrical ground to which equipment is attached should be checked for low resistance with respect to the building ground system. Maximum resistance, as measured with a wheatstone bridge or other low-resistance measuring device should not exceed 5 ohms and preferably should be less than 2 ohms.

9-312 THERMOGRAPHIC SURVEY

Many electrical testing contractors offer special temperature surveying of electrical equipment. Infrared cameras are used to view the equipment and show hot spots. These hot spots identify poor connections and overloaded equipment. This is a reliable, quick method and should be utilized.

9-503 FLUORESCENT LAMPS

Fluorescent lamps are used for most indoor lighting systems. They contain mercury in the fluorescent powder. For this reason, as well as the hazard of broken glass, and the tendency of children to regard fluorescent lamps as desirable playthings, all fluorescent lamps must be disposed of either by placing them in the cartons from which the new lamps were taken and placing the cartons in the trash, or by using a tube crusher.

9-504 INCANDESCENT LAMPS

The incandescent lamp is the least efficient light source, and its use should be limited. All incandescent lamps used in a space where the seeing task is critical must be rated at the normal circuit voltage. Stairways, elevator hoistways, and lighting in these areas must be retrofitted to a more efficient system.

9-505 GROUP REPLACEMENT

Follow the group replacement and lighting maintenance procedures in HBK MS-39. The time allowance for washing and cleaning light fixtures is included in HBK MS-47.

9-506 STAIRWAY, CORRIDOR, NIGHT, AND EXIT LIGHTS

When lights are connected to emergency lighting panels, no other type of lighting and power loads may be connected to those circuits except receptacles plainly identified as being on emergency circuits, which may be installed for portable emergency lighting units as described in 9-507.

9-507 EMERGENCY LIGHTING UNITS

An emergency lighting unit, which will turn on automatically when normal building power fails, must be installed in each transformer room, switchgear room, control center, important machine room, stairwell, and other special areas designated by the building manager, provided that emergency panelboards are not supplied from separate emergency service feeders or from emergency power generators. This unit must conform to the current Federal specification and is on yearly Federal supply contracts.

9-508 BALLASTS FOR FLUORESCENT FIXTURES

All ballasts in new fluorescent fixtures, all ballasts installed as replacements, and all ballasts in existing flush-mounted fixtures in contact with fiberboard or other combustible materials must be thermally protected, automatic resetting. Where electronic or carrier frequency clock, program, or alarm systems are imposed on the lighting circuits, the ballasts must be of a type which will not adversely affect the operation of these systems.

9-6 ELECTRIC POWER REDUCTION PLAN

9-601 INTRODUCTION

Part 7 of HBK MS-49 requires that a plan of action be developed to deal with electrical power shortages, which usually occur during the summer months, in midafternoon, on very hot, humid days. Rather drastic measures may be required by all users to prevent blackouts.

9-602 RESPONSIBILITY

The USPS building manager is responsible for developing a plan for use in each building under USPS control where reducing the electrical load can contribute to alleviating the local power shortage.

however, be reduced unless so requested by an authorized representative of the local utility company.

9-608 CONTROL POINT

Each field office shall establish a control point for the purpose of coordinating any requests for reduction of electrical power. Generally this control point will be in the building manager's office. However, the divisional office may designate a central control point for metropolitan or other areas where there are several USPS facilities. The purpose of the control point is to ensure the orderly flow of requests for electrical power reduction and the efficient execution of the established plan for such reduction.

9-609 POWER REDUCTION

Upon receipt of request for electrical power reduction, the building manager, or other designated central control point, shall initiate the planned course of action and reduce electrical loads accordingly. The head of each tenant organization, or local agency contact person, shall be advised as to the time such reduction will be made, the expected duration, and the items of building or tenant equipment that will be shut down or whose usage will be materially reduced.

9-610 RESTORATION OF SERVICE

Upon receipt of information from the local electric company that normal power will be restored, a systematic restoration of power should be initiated. This will prevent sudden surges of power with possible tripping of circuit breakers. Therefore, each item of equipment which has been shut down, or whose load has been reduced, will be returned to normal service in a cyclic manner as determined by the building manager or the central control point.

(b) Each person working on the job has signed and personally locked the switch open and attached completed Form 4811, Low Voltage Equipment Lockout Tag, or Form 4812, High Voltage Equipment Lockout Tag. A locking device (NSN 5975-00-000-4495) is available from WASC. This device allows up to six padlocks to be used. The placing and removing of these tags cannot be delegated to any person.

(c) Each person has personally tested the circuit at the point of work to positively ascertain that the circuit is dead.

NOTE: Circuit breaker trip indicators are not assurance that a circuit is deenergized. A visible air gap such as an open disconnect switch must be present prior to working on any high-voltage circuit.

(d) All precautions are taken to prevent accidental or premature energizing of the circuit.

(2) The tags indicated above must remain in place until removed by the persons who attached them.

(3) No person may close a switch until all "Lockout" tags have been removed by the persons who attached them.

(4) The look may not be removed by anyone except the person who placed it there and not until all persons are clear of the circuit and all "Lockout" tags have been removed.

(5) In the event that the worker is unavailable or unable to remove the tag and lock, and emergency or extenuating circumstances require that the circuit be restored, the tags and locks may be removed only by that worker's next direct supervisor. The supervisor must make sure that all of the work-crew members are removed from the circuit and clear and that the circuit is clear. The supervisor must also confer with and obtain agreement from the USPS building manager or postmaster before removing these tags and locks.

c. Precautions Before Beginning Work

(1) Each employee must be familiar with the equipment to be worked on and must understand and follow the supervisor's instructions concerning the work to be done.

(2) A complete survey of existing hazards must be made and all necessary precautions and safeguards taken to provide for self-protection and the protection of other workers and equipment. Employees must consult with their supervisor when in doubt concerning proper safety measures.

(3) Safeguards such as danger signs, roped-off space, and barriers to protect others must be used where the nature of the work requires it.

SECTION 10

HEATING, VENTILATING, AND AIR-CONDITIONING SYSTEMS

10-1 OPERATION, MAINTENANCE, AND REPAIR

10-101 OPERATION

The operation of heating, ventilating, and air-conditioning equipment must comply with HBK MS-24, Heating, Cooling and Ventilating. The energy-conservation procedures specified in HBK MS-49 must also be followed.

10-102 MAINTENANCE

Preventive maintenance guides for heating, ventilating, and air-conditioning equipment are in Section 13 of this handbook. Sample checklists are also in Section 9 of HBK MS-24. Use these guides, checklists, and the manufacturer's instructions to develop a specific preventive maintenance checklist for each item of equipment.

10-103 HOURS OF OPERATION

Generally, the heating and air-conditioning equipment serving office areas is turned off when the occupants leave and turned on in time for the building to be comfortable when the occupants arrive. In postal workrooms or other areas that are occupied beyond normal hours, heating and air-conditioning are provided only for areas which are occupied. A written procedure must be prepared for each building specifying the hours of operation for the heating and air-conditioning equipment, depending on the outside temperature and the ability of the equipment to bring the building within the acceptable condition for occupancy.

10-104 ADHERENCE TO CODES

All maintenance, repair, testing, and inspection of boilers and pressure vessels must conform to the applicable sections of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code. Plumbing must conform to the provisions of the National Plumbing Code.

10-105 ROOM TEMPERATURES

While individual preferences vary, the best degree of comfort is realized with temperatures of 74° to 76°F and relative humidity of approximately 45%. However, a much greater range of temperature variation is possible without adverse physiological effect or unacceptable discomfort. Consequently, in order to aid in conserving our energy resources, deviation from the above ideal is necessary. Specific instructions on temperature settings are in ASM 541, HBK MS-49, various Maintenance Bulletins, and Postal Bulletin notices which are published from time to time to meet constraints on energy consumption.

10-106 ZONE AND ROOM CONTROLS

Thermostats are the final instruments in the control system and are often used for individual selection of room or zone temperatures. They should be adjusted or changed only after checking the operation of the air washer or handler. If the air-conditioning apparatus is not functioning properly, changes made to the zone or room controls will not be satisfactory. When a complaint is received from an occupant,

10-202 WHEN COOLING IS NEEDED

When considerable differences exist between the conditions of outside air and those required for comfort inside a building, the need to provide services is obvious and no special guidance is required. However, there are days when the sense of comfort offered by the outside air is deceiving and the following criteria shall be used: If a building is equipped to take in outside air, circulate it through the space and exhaust it. Refrigeration is not required when the wet-bulb temperature of the outside air is at or below design dew point temperature of the apparatus in the building. For example, if a building has air-conditioning equipment designed to operate at a dew point of 54°F, refrigeration is not required if the wet-bulb temperature of the outside air is below 54°F. When the wet-bulb temperature is above the designed dew point temperature, refrigeration may be required. Whenever practical, outside air shall be used for cooling. Not all buildings have facilities to thoroughly ventilate the space. Thus, a decision for or against the use of cooling must be made with judgment based on the conditions within the space, the time required for cooling to take effect, and the time of day.

10-3 HEATING

10-301 WHEN HEATING IS NEEDED

It will generally be necessary to supply heat to a building when the mean temperature for the day is expected to be below 65°F. For our purposes, the mean temperature is the average of the values recorded for the high and low temperature observed in a 24-hour period. For example, if the minimum was 40°F and the maximum was 50°F, the mean temperature is calculated to be 45°F.

10-302 DEGREE DAYS FOR HEATING

Degree day is a unit based upon temperature difference and time used in estimating fuel consumption and specifying nominal heating load of a building in winter. For any one day when the mean temperature is less than 65°F, there exist as many degree days as there are degrees Fahrenheit difference in temperature between the mean temperature for that day and 65°F. The number of annual degree days for the heating season will be the sum of the degree days for all days during the heating season. In the example above, the mean temperature is 20° less than 65°F; therefore, that day had 20 degree days. If the mean temperature is over 65°F, the heating degree days are zero.

10-303 STEAM AND CONDENSATE METERS

All buildings which have steam heating systems should be equipped with steam or condensate meters so that the actual steam used for space heating can be determined. All steam furnished to concessionaires must be metered.

10-304 BOILER FIRING INSTRUCTIONS

Boiler firing instructions, including operating sequence, shall be conspicuously posted in the boiler room. The name of persons qualified to troubleshoot boiler malfunctions must be listed with the firing instructions. Only qualified employees are authorized to correct malfunctions, and they must follow established troubleshooting routines. In no instance shall other employees attempt to manipulate the controls to fire the boiler. Boiler firing controls are designed to be fail safe, and manipulation of the controls circumventing the fail-safe feature has resulted in many boiler explosions.

must meet the requirements of local codes. Local situations and economics determine the method to be selected. All should be seriously considered before a final decision is made for the individual location. If Methods B and C are used, they should be monitored annually by an independent laboratory. Additional technical guidance on water treatment can be found in HBK MS-24.

a. Method A - Contract for the complete water-treatment service. Requests for such services shall be confined to water-treatment companies currently engaged in the water-treatment field and employing chemists or engineers of recognized competence.

b. Method B - Contract for testing services and supplies of treatment chemicals. This type of contract will usually include the initial testing and analysis of the water, establishing chemical limits to be maintained, and the type of basic chemicals to be employed. The contractor will supply the treatment; instruct the operators on testing, feeding, and limits; and make periodic checks to see that the system is being maintained properly.

c. Method C - Contract for testing and analysis only. In this contract an analysis of the water and certain types of tests are to be performed by USPS employees.

To request a water-treatment contract, a PS Form 7381, Requisition for Supplies, Services, or Equipment, must be submitted to the divisional office.

10-6 INSPECTION AND TEST OF BOILERS AND PRESSURE VESSELS

10-601 DEFINITION OF BOILERS AND PRESSURE VESSELS

10-601.1 Boiler

A closed vessel in which heat generated by either the use of electrical energy or the combustion of fuel is used to produce hot water or steam.

a. Power Boiler - A boiler in which steam or vapor is generated at pressures more than 15 psig.

b. High Pressure High Temperature Water Boiler - A water boiler operating at pressures exceeding 160 psig or temperatures exceeding 250°F.

c. Heating Boiler - A steam or vapor boiler operating at pressures not exceeding 15 psig, or a hot-water boiler operating at pressures not exceeding 160 psig or temperatures not exceeding 250°F.

10-601.2 Pressure Vessel

A vessel in which the pressure is applied by an external source such as an air compressor or by the application of heat from an indirect source.

10-601.3 Domestic Water Heater

A heater which provides hot water for use in restrooms, cafeterias, etc. These heaters are usually less than 120 gallons in capacity, operate at less than 160°F and the water pressure is equal to the domestic water supply pressure to the building.

10-602 INSPECTION AND TEST REQUIREMENTS

10-602.1 Construction Inspection

All boilers and pressure vessels in postal facilities must be constructed in accordance with the American Society of Mechanical Engineers Boiler and

may affect the strength of the unit, or when in the judgment of the inspector, because of defects noted, the test is necessary to assure continued safe operation.

(4) The appropriate USPS inspection checklist listed below must be completed by the inspector. The same inspection source and procedures specified for elevators in Section 8 apply.

Form 4081, Unfired Pressure Vessel Checklists
Form 4082, External Checklist Cast-Iron Boiler
Form 4083, Internal Checklist Cast-Iron Boiler
Form 4084, Internal Checklist Fire Tube Boiler
Form 4085, External Checklist Fire Tube Boiler

e. Code Requirements - Tests and inspections must be conducted in accordance with the National Board Inspection Code published by the National Board of Boiler and Pressure Vessel Inspectors, 1055 Crupper Ave., Columbus, OH 43229, Telephone (614) 888-8320.

f. Air and Water Pollution Abatement - Each boiler must be inspected and operated to meet the local air- and water-pollution abatement standards.

10-603 FREQUENCY OF INSPECTION

The latest boiler and unfired pressure vessel criteria will be found in Management Instructions AS-620-82-14 and AS-620-82-12.

10-604 EXEMPTIONS

The following pressure vessels are exempt from this requirement:

a. Pressure vessels used for transportation and storage of compressed gases when constructed in compliance with specifications of the U.S. Department of Transportation (DOT) and when charged with gas, marked, maintained, and periodically requalified for use, as required by appropriate DOT regulations.

b. Vessels with a nominal water containing capacity of 120 gallons or less for containing water under pressure, including those containing air, the compression of which serves only as a cushion or air lift pumping system.

c. Refrigeration receivers.

10-605 SCHEDULING OF INSPECTIONS

Each field officer in charge of a postal facility must schedule inspections to meet requirements of 10-603.

10-606 INSPECTORS

Inspections are made by inspectors certified by the National Board of Boiler and Pressure Vessel Inspectors, or by USPS, State, city, or other Federal inspectors with equivalent qualifications.

10-607 SOURCE OF INSPECTORS

The suggested source of pressure vessel inspectors, in order of preference,

SECTION 11

PLUMBING AND SEWERAGE SYSTEMS

11-1 PIPING SYSTEMS

11-101 CODE REQUIREMENTS

All piping in USPS buildings must conform to the provisions of the National Plumbing Code; and, in the case of gas piping and equipment, to the standards established by the American Gas Association and the National Fire Protection Association (NFPA).

11-102 PIPING IDENTIFICATION

All piping in USPS-owned buildings must be coded and identified as specified by ANSI A13.1. This may be done by putting colored bands at each joint, turn or every 50 feet of open straight run. The color requirements are as follows: YELLOW for gas piping, ORANGE for steam and hot water piping, GREEN for chilled water and nonhazardous materials, and RED for fire lines and sprinkler systems. The stencil designations and tag designations specified must also be used. See Figure 11A-1 for the ANSI scheme for the identification of piping systems. Those facilities that have complied with the previous standard need not change their present coding.

11-103 PIPING LAYOUTS

A piping layout of the various piping systems in a building must be kept in the building manager's office and copies should be furnished to the supervisor responsible for the piping. Generally, layouts of this type are furnished by the designers when new buildings are being built. In older buildings, the layouts may have become misplaced or out of date. If this is the case, the building manager's office must provide them and keep them up to date if any changes occur. If no drawings are available, the divisional office should be consulted to determine required action, depending on circumstances. Simple schematic one-line drawings with appropriate symbols on plans are sufficient, provided they show the relative location of the valves controlling service to the principal subdivisions within the building (such as a wing, floor, or section). Valves serving these functions in all the various piping systems must be clearly identified by a sign visible from the floor and permanently mounted near the valve or hung from it. Use white letters on a colored background which should be the same color as used for piping identification (see 11-102).

11-104 PIPING LEAKS

Loss of water from leaks can cause serious waste. A 1/8-inch diameter opening allows a loss of 120,000 gallons of water per month and a 1/4-inch diameter opening can account for a loss of 360,000 gallons per month. Waste benefits no one; therefore, proper attention shall be given to the piping systems to assure that no avoidable losses of this type will occur.

11-105 CROSS CONNECTIONS

A cross connection is a direct or indirect connection permitting waste, sewage, or undrinkable water to flow into a potable water supply. Direct connections consist of continuous connections leading nonpotable water into drinking water. Indirect connections consist of gaps of air spaces across which nonpotable water can be sucked or blown. Of the many different types of cross connections, the most prevalent are: back siphonage of polluted water due to a submerged

11-109.3 Deluge Sprinkler System

A deluge sprinkler system is a special type of automatic dry-pipe system, having open or unsealed heads installed in the piping arrangement and equipped with automatic and auxiliary manual controls. This type of system is installed only in occupancies where flash fires are likely to occur.

11-109.4 Preaction Systems

Preaction systems are designed and installed similarly to deluge systems, except that standard sealed type heads are used. Heat-actuated controls operate riser valves to permit water to be available at the sprinkler head before there is sufficient heat at the head to cause it to fuse.

11-2 FIXTURES AND EQUIPMENT

11-201 DRINKING FOUNTAINS

Before repairing a unit, particularly one which is more than 10 years old, an evaluation should be made to determine whether it would be more economical to dispose of the unit and purchase a new one. Wall-hung fountains shall be used when replacing, or when adding, new fountains, if it is practical to do so. See HBK RE-4.

11-202 TOILET FIXTURES REQUIRED

Separate toilet rooms are provided for men and women, except that a single room with one water closet and one lavatory is adequate in buildings where fewer than five people are employed. The number of fixtures required is based on the maximum number of employees at peak periods. See Figure 11-1 and HBK RE-4.

TOILET ROOM FIXTURES

Number of Persons	Water Closets	MEN		WOMEN	
		Urinals	Lavatories	Closets	Lavatories
1 to 10	1	1	1	1	1
11 to 24	2	1	1	2	2
25 to 36	2	2	2	3	2
37 to 56	3	2	2	4	3
57 to 75	4	2	2	5	4
76 to 96	4	3	3	7	5
97 to 119	5	3	3	7	5
120 to 144	6	3	4	8	5
145 to 171	6	3	4	9	6
172 to 200	7	3	4	10	7
201 to 220	8	4	5	11	7
221 to 240	8	4	5	12	8
241 to 260	9	4	5	13	9
261 to 280	10	4	6	14	9
281 to 300	11	4	6	15	10
Over 300	Add 1 for every 20 Additional persons	Add 1 for every 100 Additional persons	Add 1 for every 60 Additional persons	Add 1 for every 20 Additional persons	Add 1 for every 45 Additional persons

Figure 11-1. TOILET ROOM FIXTURES

11-303 WATER PRESSURES REQUIRED

The minimum water pressure required for plumbing fixtures on the top floor of a building is 15 psi. The minimum operating water pressure required at the highest fire hose valve is 25 psi with 35 gpm flowing.

11-304 TEMPERATURE OF DOMESTIC HOT WATER

For general use in office buildings, the temperature of hot water shall comply with energy conservation requirements published in HBK MS-49.

11-305 WATER TREATMENT

Treatment of domestic water supplies may or may not be necessary depending on the local water conditions. A test analysis should be performed to determine these conditions. Hardness exceeding 100 parts per million should be treated. The amount of treatment tests and equipment required would depend upon the use, the amount of water required, and the temperature maintained in the hot-water supply systems. Generally, water supplied by municipal water systems for domestic uses will not require additional treatment. For information regarding methods of procuring water-treatment services, see 10-503 and HBK MS-24, Chapter 6.

11-306 REQUIREMENT FOR SPRINKLERS

Sprinkler systems must be provided for paint shops, carpenter shops, trash rooms, print shops, garages, storage rooms over 500 square feet, bulk mail-bag storage rooms, and other areas where the fire hazard is above normal.

11-307 PROTECTION AGAINST FREEZING

In locations subject to freezing weather, hose bibs, water fountains, etc., that may be exposed to the freezing conditions will be valved off and drained before the onset of the winter weather.

11-308 SIGNS AND TAGS

11-308.1 Closed Signs for Toilet Room

Neat-appearing, professionally made signs with the wording, "Closed-Mechanics Working," must be used on toilet room doors when the toilet must be taken out of service.

11-308.2 Instructional Signs

No signs pertaining to the use of the equipment or facilities may be placed in any toilet room.

lish or abbreviated form (see Table 1). Arrows shall be used to indicate direction of flow. Contents shall be identified by legend with sufficient additional details such as temperature, pressure, etc., as are necessary to identify the hazard.

Legend shall be brief, informative, pointed, and simple for prompt effectiveness. Legends shall be applied close to valves or flanges and adjacent to changes in direction, branches, and where pipes pass through walls or floors, and at intervals on straight pipe runs sufficient for identification. Identification may be accomplished by stenciling, the use of tape, or markers. In any situation, the number and location of identification markers shall be based on the particular piping system. (See Fig. 1.)

3.2 Color

Color should be used to identify the characteristic hazards of the contents (see Table 2). Color should be displayed on, or contiguous to, the piping by any physical means, but its use shall be in combination with legend. Color may be used in continuous, total length coverage or in intermittent displays.

3.3 Visibility

Attention shall be given to visibility with reference to pipe markings. Where pipe lines are located above or below the normal line of vision, the lettering shall be placed below or above the horizontal centerline of the pipe.

TABLE 1 EXAMPLES OF LEGEND

"HOT WATER"	"HYDRAULIC OIL"
"SLURRY"	"FOAM"
"AIR 100 PSIG"	"CARBON TETRACHLORIDE"
"ARGON 500 PSIG"	"CAUSTIC"
"PROPANE"	"SULFURIC ACID"
"H.P. RETURN"	"STEAM 600 PSIG"

TABLE 2 CLASSIFICATION OF HAZARDS OF MATERIALS AND DESIGNATION OF COLORS[1]

Classification	Color Field	Color of Letters for Legend
Materials Inherently Hazardous		
Flammable or Explosive	Yellow	Black
Chemically Active or Toxic	Yellow	Black
Extreme Temperature or Pressure	Yellow	Black
Radioactive[2]	Yellow	Black
Materials of Inherently Low Hazard		
Liquid or Liquid Admixture[3]	Green	White
Gas or Gaseous Admixture	Blue	White
Fire Quenching Materials		
Water, CO_2, Halon, etc.	Red	White

NOTES

(1) When the color scheme above is used, the colors should be as recommended in ANSI Z53.1 latest revision, Safety Color Code for Marking Physical Hazards.

(2) Previously specified radioactive markings using yellow and purple are acceptable if already established and/or until present supplies are depleted, subject to pertinent Federal Regulations.

(3) Markings may be black letters on a green color field and acceptable if already established and/or until existing supplies are depleted.

TABLE 3 SIZE OF LEGEND LETTERS

Outside Diameter of Pipe or Covering		Length of Color Field A		Size of Letters B	
in.	mm	in.	mm	in.	mm
3/4 to 1-1/4	19 to 32	8	203	1/2	13
1-1/2 to 2	38 to 51	8	203	3/4	16
2-1/2 to 6	64 to 165	12	305	1-1/4	32
8 to 10	200 to 260	24	605	2-1/2	64
over 10	over 260	32	800	3-1/2	88

3.4 Type and Size of Letters

Contrast shall be provided between color field and legend for readability. Table 2 gives recommendations for color of legend on various color fields covered in this Standard. Use of letters of standard style,[4] sizes 1/2 in. (13 mm) and larger, is recommended. Refer to Table 3 for specific size recommendations. For identification of materials in pipes of less than 3/4 in. (19 mm) in diameter, and for valve and fitting identification, the use of a permanently legible tag is recommended.

3.5 Unusual or Extreme Situations

When the piping layout creates or occurs in a limited area of inaccessibility or of extreme complexity, such sequences of layouts may require substitute techniques to achieve positive identification. Use of substitute techniques shall be limited to such segments and shall not deviate from the concept of identification described in 3.1, "Legend"; 3.2, "Color"; and Table 2, "Classification of Hazards of Materials and Designation of Colors."

[4] Bare and gothic bold lettering provides high readability.

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SECTION 12

MISCELLANEOUS BUILDING EQUIPMENT

12-1 INCINERATORS

12-101 INSTALLATION

Generally, incinerators are not provided in USPS-designed buildings due to the nuisance created by fly ash and odor, the cost of operation and ash removal, and local air pollution codes. Incinerators may be installed in USPS-designed and -operated buildings only when one or more of the following conditions exist:

a. Destruction of classified material, pathological waste, or other material involving a security or safety hazard is required.

b. Municipal or private disposal facilities are not available or are inadequate for the quantities or material involved.

c. The cost of trash haul-away service is very high, and an economic analysis for the location indicates that incineration is the most economical means of trash disposal. This economic analysis, including operating labor cost, must be acceptable to the divisional office.

12-102 OPERATION AND MAINTENANCE

The building manager shall provide for the maintenance, operation, and repair of incinerators in those USPS-operated buildings where this equipment is installed. Care must be exercised when the incinerator is fired as overfeeding, or excess air can cause temperatures within the unit to exceed those it is designed for, with a consequent deterioration of the incinerator fire box and stack. The manufacturer's instructions for the equipment must be followed specifically. Tenants may furnish qualified personnel to destroy classified material. The building manager shall designate those who may operate the incinerator and be assured that the operators are adequately instructed in the operation of the unit. The equipment shall be maintained to meet State and local air pollution abatement requirements. The required preventive maintenance for incinerators is found in Appendix 13-B.

12-2 POWER-OPERATED DOORS

The building manager shall provide for the maintenance and repair of power-operated doors installed in USPS-operated buildings. Maintenance guides are in Appendix 13-B.

12-3 POWER-OPERATED SCAFFOLDS

12-301 INSTALLATION

Generally, power-operated scaffolds for exterior maintenance of buildings are installed on large buildings with more than 1,000 fixed glass windows. On smaller buildings with 1,000 or fewer windows, a study shall be made to determine if power-operated scaffolds are justified.

12-302 OPERATION

Normally, this equipment is operated by USPS personnel. Prior to operating this equipment, the operator shall receive training in its operation. The training shall normally be received on the job from the mechanic responsible for its maintenance. Should this equipment be operated by other than USPS personnel, the operator must receive the same

SECTION 13

BUILDING OPERATION AND MAINTENANCE STAFFING REQUIREMENTS

13-1 GENERAL

13-101 APPLICATION

The work load criteria in this section apply to all buildings operated by the USPS. In leased-operated buildings these criteria are used only to the extent of the USPS responsibility under the terms of the lease.

13-102 OBJECTIVES

The main objectives of these criteria are:

a. To promote the most effective and efficient use of staffing.

b. To provide a basis for determining budgetary requirements.

c. To provide a means of evaluating the maintenance effort.

d. To provide a maintenance effort that will preserve the facility from deterioration and keep all equipment in a safe and economical operating condition.

13-103 SCOPE

The criteria in this section will identify workhour requirements for building equipment operation, maintenance, and minor repair. Specifically excluded are: elevator operators, custodians, mail handling and processing equipment mechanics and technicians, telephone operators, and clerical and management personnel.

13-104 MANAGEMENT SYSTEM

The appropriate maintenance management system for specific offices, as described in HBK MS-63 or HBK MS-65, must be applied to the building operation and maintenance functions identified in this section.

13-105 RESPONSIBILITY

Local application of the methodology in this section is the responsibility of the senior maintenance official. Local supervisory staff or others with applicable knowledge, skills, and abilities relating to building and building equipment maintenance and/or operational requirements should be utilized as needed to meet maintenance management objectives.

13-2 PROCEDURES

13-201 GENERAL

The procedures for determining the building equipment preventive maintenance and operating requirements include the use of PM Guides in Appendix 13-B and Equipment Operation Guides in Appendix 13-C, which should be revised as needed to meet local conditions. Standard frequencies and times for performing PM and operational checks are also provided. These standards represent performance under average or normal conditions and may not always be entirely appropriate for any given equipment and facility. In some cases a range of standard time and/or frequencies is given because of the large variety in size and complexity of equipment. Other local conditions such as climate, geographic area, customer/employee activity, type of construction, and the age of the building or equipment should also be considered to determine appropriate requirements for each facility. After completion and validation of local

13-3 INVENTORY

13-301 REQUIREMENT

A complete and accurate inventory is the fundamental document on which the building operation and maintenance staffing requirement is based. Therefore, it should be carefully prepared and currently maintained. The Building Equipment Inventory, PS Form 4897, Figure 13-1, must include all facility equipment identified in Appendix 13-A even though the maintenance may be performed by contract. Other building equipment not listed in Appendix 13-A that requires preventive maintenance or operational checks should also be listed. Prepare separate Forms 4897 for each building. Also list on separate forms any non-USPS, tenant-owned equipment maintained by the USPS.

13-302 INSTRUCTIONS

a. Use Appendix 13-A for identification of equipment to be listed on Form 4897. The preventive maintenance and/or equipment operating guides applicable to each type of equipment are also given in Appendix 13-A and may be useful as an aid in identifying specific equipment by referring to activities for various equipment components cited in the guides.

b. List each item of equipment separately, or list the total quantity of selected equipment, as indicated in Appendix 13-A. Each item should have a locally assigned identification number to distinguish it from other items. Existing equipment numbers may be used if appropriate.

c. Enter the physical location of each item, by room number, area, etc.

d. See Appendix 13-A for pertinent descriptive information or remarks to be entered on Form 4897 for each item. This information is needed for proper completion of other staffing forms in this chapter. This information may be obtained from either manual or automated equipment history records, or may be obtained from a physical survey of the equipment.

e. Prepare an individual Equipment History Record, Form 4772, for each item of equipment designated by an asterisk (*) in Appendix 13-A. Individual history records may be prepared for other items, but are mandatory for designated equipment.

13-4 BUILDING EQUIPMENT REQUIREMENTS

13-401 PREVENTIVE MAINTENANCE

13-401.1 Objective

It is intended that only items of equipment that require periodic maintenance will be identified in determining the preventive maintenance workload. All items listed on the inventory may not require the expenditure of workhours for preventive maintenance. It is sometimes more economical to replace an item than to expend workhours that do not prolong the useful life of the equipment or minimize equipment failure. However, the total effect of equipment failure must be considered.

13-401.2 Contract Maintenance

Some of the maintenance work identified in this handbook requires specialized personnel and equipment and, therefore, is beyond the scope of the maintenance staff at some locations. An example of such work is the maintenance to elevators and hydrostatic testing of portable fire extinguishers. This maintenance may be performed at relatively infrequent intervals, but is essential

mechanical and electrical features of the equipment. This information is essential for selecting applicable activities from the guides. Data concerning the equipment may be collected from manufacturer's literature, drawings, and visual inspection. Visual inspection is necessary in all cases, particularly for older equipment, because it may reveal equipment modifications and part replacements which are not shown on original installation drawings. Where equipment history records, PS Form 4772, are available, they should also be reviewed to help determine local PM or operational requirements.

13-403.5 Establishing Frequency of Service

The next step is to determine the frequency of service to the equipment. The standard frequencies shown in the guides are considered sufficient for normal requirements and conditions. However, it is recognized that numerous factors may influence local requirements. Where equipment operation is irregular, the frequency of service may have to be estimated. Deviations from standard frequencies (or frequency ranges) must be justified and approved by the Field Division General Manager/ Postmaster on Form 4896.

13-403.6 Selecting Checklist Activities

After establishing the frequency, review the guides and select the specific activities for the particular type of checklist being developed, ensuring that each is applicable to the local equipment. In some cases, several guides may be needed to cover all of the given equipment/system components. If any equipment components are not covered in the guides, suitable maintenance or operational activities for such components should be developed and added here.

13-403.7 Sequencing Activities

The next step is listing these activities in the order they are to be performed. Checklist activities are sequenced for the purpose of ensuring performance of activities in a safe and efficient manner, and in logical order. Minimize time required to stop and start equipment on PM checklists by grouping items together that are to be performed while the equipment is running. Consider the physical location and configuration of equipment components to minimize travel.

13-403.8 Validation of Checklist

The final step in completion of each checklist is to enter the sequenced activities on Form 4777 and have them performed by several qualified personnel to ensure the accuracy, completeness and clarity of instructions, and to determine a realistic average time to perform the work under actual conditions. Revise the checklist as needed to meet local requirements.

13-403.9 Time Allowances

The standard time allowances for activities listed in the guides are considered sufficient for normal requirements and conditions. Guides which are modified for local application should be reviewed during validation for time variances. Average time for additional local checklist activities should also be determined during validation. Time for activities in the guides which are not performed locally should be excluded. If a locally developed checklist time varies more than 20% from the standard time, it must be justified and approved by the Field Division General Manager/Postmaster on Form 4896.

13-501.11 Instructions for Completion of PS 4896-A, Annual Standard Workhour Requirement for Building Equipment Preventive Maintenance (Figure 13-2).

a. Items are listed by general equipment type in PM guide number order, i.e., HVAC - "A" guides, electrical - "E" guides, elevators - "L" guides, miscellaneous equipment - "M" guides, and plumbing - "P" guides. Enter the quantity of each item from the inventory according to size as indicated. Questions concerning appropriate identification of specific equipment can usually be answered by referring to language in the preventive maintenance guides.

b. Multiply the quantity by the frequency and multiply that result by the workhours per frequency to determine the annual workhours for each type of equipment.

c. Subtotal the annual workhours for each general type of equipment as indicated on the form, i.e., guides "A," "E," "L," "M," and "P." Add subtotals and enter as grand total at bottom of last page.

13-501.20 Local Preventive Maintenance Requirements

When locally developed preventive maintenance requirements for specific equipment or building components exceed the standard frequency or workhours given in this handbook or other official directives, list those items on Form 4896. (See instructions in 13-501.21.) Locally developed requirements on equipment for which there are no preventive maintenance guidelines or standards in this or other official directives should also be listed on Form 4896.

13-501.21 Instructions for Completion of PS 4896, Annual Local Workhour Requirement for Building Equipment Preventive Maintenance and Operation (Figure 13-3).

Part I:

Group general types of equipment together, i.e., HVAC, Electrical, Elevator, Plumbing, and Misc., allowing at least two blank lines for subtotals between groupings or list different groups on separate pages if desired. Separate pages may also be prepared to distinguish between preventive maintenance, traveling route, and stationary route requirements.

Column A: Enter the applicable preventive maintenance guide number from Appendix 13-B, or equipment operation guide reference from Appendix 13-C when guides and standards are provided. When HBK MS-1 guides or standards do not exist, enter "MFGR" (manufacturer's recommendations), "MMO-XX-XX" (applicable Maintenance Bulletin Number), or other identifier to indicate the source of locally developed requirements.

Column B: Enter item name from the Building Equipment Inventory, Form 4897.

Column C: Enter the quantity of local items having nonstandard requirements.

Complete Columns D, E, and F if Form 4896 is being used in lieu of Forms 4896-A, 4894, or 4895, or if local requirements exceed or are less than the standard frequencies and/or times.

NOTE

In the latter case, the entry of standard allowances serves only to provide data for workhour comparison to locally developed requirements entered in Part II.

The senior maintenance official must be personally involved in determining the need for significant variances cited on this form and providing adequate justification. The Field Division General Manager/Postmaster must approve the variances.

13-502 EQUIPMENT OPERATION

13-502.10 Standard Requirements

See 13-2 for an overview of determining requirements. Carefully review Appendix 13-C for specific standard operational requirements and criteria for equipment/systems listed on Forms 4894 and 4895. Local operating requirements varying from the standards given herein must be listed on Form 4896 with supporting justification and approval as outlined in 13-203. The annual standard workhour allowances for equipment operation are to be summarized on Forms 4894 and 4895 as follows:

13-502.11 Form 4894, Annual Standard Workhour Requirement - Traveling Operating Routes (Figure 13-4)

NOTE

One Form 4894 is to be prepared listing only those items that are not in the stationary route area, i.e., where travel beyond the stationary route area is required to check the equipment. A second Form 4894 is to be prepared listing only those items within the stationary route area (no travel time authorized) with the total workhours to be entered on Form 4895, Line 36, as part of the stationary route workload.

a. Using information from the building inventory and local operating logs, route sheets, etc., make the required entries in columns b and c for equipment having the same route frequency, i.e., lines 1 through 9, 14 through 27, 32 through 39, 44 through 48, 53 through 59, and 64 through 66. Compute the total annual workhours for each line and enter in Column e.

b. Total the annual workhours in Column e for each route frequency and enter in Blocks 10, 28, 40, 49, 60 and 67.

c. Calculate 10% of the total annual workhours for each route frequency and enter in Blocks 11, 29, 41, 50, 61 and 68 (see 13-403.11).

d. Determine the local travel time for equipment in each route frequency and enter in Blocks 12, 30, 42, 51, 62 and 69 (see 13-403.10).

e. Add the total annual workhours, minor adjustment, and travel time for each route frequency and enter in Blocks 13, 31, 43, 52, 63 and 70. Add the totals from the preceding blocks and enter as the grand total in Block 71.

13-502.12 Form 4895, Annual Standard Workhour Requirement - Stationary Operating Routes (Figure 13-5)

a. If applicable, fill in general information about the central chill water plant and high-pressure boiler plant in Columns 1 through 7 and 17 through 26, respectively.

13-503 CORRECTIVE MAINTENANCE

13-503.1 General

It is necessary to allow workhours to provide for correction of day-to-day failures and malfunctions of building equipment. Making corrective repairs of some building equipment, such as drinking fountains, flush valves, and small fans, is a more practical and economic maintenance procedure than an elaborate preventive maintenance program.

13-503.2 Definition

Corrective maintenance is defined as that work required to correct day-to-day equipment failures and malfunctions. The need for such work may originate from problems identified by employees or calls from other building occupants. Corrective maintenance does not include major repairs and/or improvements, such as replacement of an air-conditioning cooling tower, central chiller, or building roof, and renovation or upgrading of a building area.

13-503.3 Staffing Allowance

The standard annual allowance for corrective maintenance is 8 workhours per year per 1,000 gross square feet. It is recognized that some buildings may require more or less workhours due to their age, need for major renovation, or operating conditions. The Field Division General Manager/ Postmaster may authorize a departure from the standard allowance when supported by evidence of unusual actual work load. The actual work load is determined by reviewing completed maintenance work orders or appropriate reports identifying workhours used for building corrective maintenance activities for the previous 3 years, if available. Factors to be considered when evaluating the actual work load by this means should include repair methods, personnel utilization, and the impact of completed major repair, alteration, modification, and improvement projects. The standard allowance or average actual work load for corrective maintenance to building equipment is to be entered on Form 4893, Column h.

13-504 MISCELLANEOUS

13-504.1 General

Experience has shown that there are some workhour requirements for the operation of a building that cannot be identified within any of the previously discussed categories. Due to the wide variety of miscellaneous activities, it is impractical to isolate and develop standards for the accomplishment of every type of activity. Examples of miscellaneous activities include authorized meetings, training, and administrative time. This does not include space adjustment and nonpostal funded activities described in 13-505 and 13-506 for which special staffing allowances may be authorized.

13-504.2 Staffing Allowance

The standard allowance for miscellaneous work shall be not more than 10% of the total building operation and maintenance workhours (operating routes, preventive maintenance, and corrective maintenance). Enter this figure on Form 4893, Column i.

13-505 SPACE ADJUSTMENTS

13-505.1 General

It is also recognized that there are, to varying degrees, frequent changes to and relocations of postal operations. Minor changes, renovations, or alterations to the building which are needed to accommodate such changes may be accomplished by postal maintenance employees. Examples of space adjustments

Column g: Enter other local workhour requirements for building equipment operation, if any, from Column j, Form 4896.

Column h: Determine either the standard or average actual corrective maintenance annual workhour requirement according to 13-503.3. If different types of craft work are being listed, enter the annual hours applicable to each type of work, if known, or distribute the total hours as deemed appropriate. Check appropriate block at the top to indicate either standard allowance or locally developed allowance.

Column i: For each line, calculate the total of columns c through h, then multiply by 0.10 (10%), and enter the results in this column as the miscellaneous allowance.

Column j: Determine either the standard or average actual space adjustment annual workhour allowance/requirement according to 13-505.2. If different types of craft work are being listed, enter the annual hours applicable to each type of work, if known, or distribute the total hours as deemed appropriate. Check appropriate block at the top to indicate either standard allowance or locally developed allowance.

Column k: Determine the nonpostal funded annual workhour requirement according to 13-506 and enter the annual hours applicable to each type of work.

Column l: Total Annual Workhours: For each line, cross-total columns c through k and enter the results in this column as the total annual workhours for each type of work listed.

Subtotal columns c, d, e, f, and g as indicated to Line 9.

Cross-check the calculations by totaling the columns as indicated on Line 10, then cross-totaling Line 10 to Column l.

13-508 DOCUMENTATION

13-508.1 Approval and Retention

The completed staffing forms and supporting documentation shall be submitted to the divisional office for review and approval. The senior maintenance official shall maintain the approved staffing forms and implement the maintenance program to accomplish the identified work.

13-508.2 Revision

The staffing analysis will be revised when significant building and building equipment modifications, deletions, or additions warrant a change in the local staffing requirements, or as directed by higher level management.

FORM 4772 REQ.	ITEM	NMICS ACRONYM	DESCRIPTION AND REMARKS (PS 4897)	PM GUIDE NO(s) (APP. 13-B)	OPERATING GUIDE APP. 13-C PART 4	OPERATING GUIDE PS 4894 LINE #
*	Boilers, Cast Iron and Steel	HVACB	Give mfr., type, lbs. steam/hr., BTUs/hr, Fuel(s) used	A-6, A-5, A-7, A-8	e, j, k	3
*	Burner, Gas	(1)	Give type of fuel and BTUs/hr	A-7	e	3, 18
*	Burner, Oil	(1)	Give type of fuel and BTUs/hr	A-8	e	3, 18
	Clocks, Electric, Central System	BLDG	Give mfr. and type of master unit	E-3	-	-
	Coils, Preheat, Reheat, etc. (at remote locations)	BLDG	Give sq. ft. of exposed area	A-9	b4d	-
	Condensers, Air Cooled	BLDG	Give capacity in tons	A-3, E-29, P-18	b	33
	Condensers, Evaporative	BLDG (2)	Give capacity in tons	A-14, E-29, P-18	b	33
*	Controls, Central System	HVACI	Give net sq. ft. of space served by system, and number of stations (input devices)	A-10	-	-
*	Controls and Mechanisms for Roll-type Filters	HVACA	Give size and type (pressure or timer)	A-19	b4b	37
*	Cooling Towers	BLDG	Give tonnage and number of cells (cell includes fan, motor, etc.)	A-12, A-13, E-29	b	4 or 17
	Dock Boards (also see Loading Ramp)	BLDG	Give size and capacity	M-21	-	-

* Prepare Equipment Inventory History Record, PS 4772, for each unit and, if applicable, Motor Record, PS 4772A, for motor of one horsepower or larger.
(1) Use acronym for equipment on which this item is installed.
(2) Also UPV, if applicable.

FORM 4772 REQ.	ITEM	NMICS ACRONYM	DESCRIPTION AND REMARKS (PS 4897)	PM GUIDE NO(s) (APP. 13-B)	OPERATING GUIDE APP. 13-C PART 4	OPERATING GUIDE PS 4894 LINE #
	Fans, Centrifugal (Exhaust or Return Air)	BLDG	Give mfr. CFM and hp. of motor	A-15	1	34
	Fans, Propeller, 24 in. dia. or larger	BLDG	Give make, size, and hp. of motor	A-22	1	35
	Fans, Propeller, Pedestal or Wall-Mounted	BLDG	Give diameter of blade and hp. of motor	A-23	-	-
	Filters, Electro-static	BLDG	Give mfr., air capacity and grid voltage	A-21	-	-
*	Filters, Movable Curtain, Oil Coated	HVACA	Give sq. ft. of exposed surface	A-16	b4b	37
*	Filters, Roll Type, Disposable Media	HVACA	Give size and type of media	A-17, A-19	b4b	37
	Filters, Throw Away	(1)	Give number of each size	A-20	-	-
	Filters, Viscous Type (Washable)	(1)	Give number of each size	A-18	-	-
	Fire Alarm Boxes (Manual)	FAELS	Give mfr. and whether coded or noncoded	E-38	-	-
	Fire Alarm Check Valves and Accessories (Wet Pipe Sprinkler System)	FAELS	Give operating water pressure (unit includes retard chambers, jockey pumps, tamper alarms, etc.)	P-23	-	-

* Prepare Equipment Inventory History Record, PS 4772, for each unit and, if applicable, Motor Record, PS 4772A, for motor of one horsepower or larger.
(1) Use acronym for equipment on which this item is installed.
(2) Also UPV, if applicable.

FORM 4772 REQ.	ITEM	NMICS ACRONYM	DESCRIPTION AND REMARKS (PS 4897)	PM GUIDE NO(s) (APP. 13-B)	OPERATING GUIDE	
					APP. 13-C PART 4	PS 4894 LINE #
	Fire Doors - Swinging Type, Stairwells and Exitways	FAELS	Give type of hold open device, if any	M-11	-	-
	Fire Extinguishers, Gas (CO_2) - Cartridge Type	FAELS	Give capacity in lbs. and ext. agent (MP Dry Chemical, Halon, etc.)	P-4, P-5	q	64
	Fire Extinguishers, Stored-Pressure Type	FAELS	Give capacity in lbs. and ext. agent (MP Dry Chemical, Halon, etc.)	P-3, P-5	q	64
	Fire Extinguishing Systems - Fixed	FAELS	Give number of tanks, capacity, and ext. agent (CO_2, Halon, etc.)	P-6	-	-
	Fire Hoses (1 1/2" racked in buildings)	FAELS	Give date of purchase	P-25	-	-
	Fire Hydrants (Dry or Wet Barrel)	FAELS	Give type of barrel and gpm	P-28	-	-
	Fire Pumps	FAELS	Give type of drive	P-33 or P-34	i	38
	Fire Supervisory Signals - Testing	FAELS	Give type of supervision	E-34	-	-
	Floor Scrubber - Vacuum, Automatic, Battery-Powered	BLDG	Give mfr. and size	M-18	-	-

* Prepare Equipment Inventory History Record, PS 4772, for each unit and, if applicable, Motor Record, PS 4772A, for motor of one horsepower or larger.
(1) Use acronym for equipment on which this item is installed.
(2) Also UPV, if applicable.

FORM 4772 REQ.	ITEM	NMICS ACRONYM	DESCRIPTION AND REMARKS (PS 4897)	PM GUIDE NO(s) (APP. 13-B)	OPERATING GUIDE APP. 13-C PART 4	OPERATING GUIDE PS 4894 LINE #
	Lawnmowers and Edgers (Gasoline powered)	BLDG	Give mfr., type, size, and engine hp.	M-2	-	-
	Lifts, Power	BLDG	Give mfr. and height range	M-17	-	-
	Lighting Fixtures, Outside	BLDG	Give type, no. of bulbs and wattage, and height	E-7	-	-
	Lightning Protection	BLDG	Give number of air terminals and down conductors	E-12	-	-
	Lights, Emergency	FAELS	Give type (wet, dry, or gel cell)	E-4	r	65
	Load Levelers (below grade)	BLDG	Give mfr. and capacity	M-20	-	-
	Loading Ramps, Adjustable	BLDG	Give mfr. and capacity	M-10	-	-
	Manholes, Sewer	BLDG		P-9	-	-
	Motors, Over 5 HP	(1)	Give mfr., hp., and equipment served (complete PS 4772-A)	E-29	l	2-5, 14-23, 32-38, 44-47
	Paper Baler	BLDG	Give size of bale	M-5	-	-
	Pumps, Centrifugal (Not Integral with Motor)	HVACP	Give motor hp., GPM and equipment/system served	P-18, E-29	m	2-5, 15-22, 33, 37
	Pumps, Condensate or Vacuum	HVACP	Give motor hp. and equipment served	A-11	m	15
	Pumps, Sump (Sewage or Lift)	HVACP	Give motor hp.	P-11	o	36

* Prepare Equipment Inventory History Record, PS 4772, for each unit and, if applicable, Motor Record, PS 4772A, for motor of one horsepower or larger.
(1) Use acronym for equipment on which this item is installed.
(2) Also UPV, if applicable.

FORM 4772 REQ.	ITEM	NMICS ACRONYM	DESCRIPTION AND REMARKS (PS 4897)	PM GUIDE NO(s) (APP. 13-B)	OPERATING GUIDE APP. 13-C PART 4	OPERATING GUIDE PS 4894 LINE #
	Sweepers (Battery Powered)	BLDG	Give mfr., type, and size	M-16	-	-
	Sweepers (Gasoline Powered)	BLDG	Give mfr., type, size, engine hp.	M-3	-	-
	Tanks, Fuel (Htg) Oil Storage	BLDG	Give approx. size or capacity	M-4	-	-
	Tanks, Water (All Types)	(1)(2)	Give approx. size or capacity and type (HW, CW, etc.)	P-12	k	16, 18, 22
	Traps, Grease	BLDG	Give size	P-7	-	-
	Traps, Steam All Types	BLDG	Give type and pipe size	P-17	b, j, k, n	3, 15, 18, 21, 22
	Valves, Manually Operated (Main-line or Critical - over 2 inches)	BLDG	Give size and function	P-14	-	-
	Valves, Motor Operated	BLDG	Give size and motor hp.	P-15	-	-
	Valves, Regulating (Steam)	BLDG	Give size and pressure	P-13	n	21
*	Window Washing Scaffolds, Power Operated	BLDG	Give height of building and approx. length of track	L-18	-	-

* Prepare Equipment Inventory History Record, PS 4772, for each unit and, if applicable, Motor Record, PS 4772A, for motor of one horsepower or larger.

(1) Use acronym for equipment on which this item is installed.

(2) Also UPV, if applicable.

GUIDE NUMBER A-4

AIR HANDLERS

Frequency: Annual

Special Instructions: Open and tag electric circuits.

Checkpoints:

1. Fans
   a. Clean buildup, dust, and dirt from fan blades.
   b. Clean inside of fan housing and casing, noting structural irregularities, condition of insulation, loose bolts, foundation and vibration-isolation.
2. Bearings (With pillow blocks, sleeve or ball bearings)
   a. Lubricate bearings, change oil, perform pressure lubrication according to manufacturer's instructions. Take care not to overlubricate.
   b. Remove top housing and examine retainers and slings.
3. Drives (Belt and Direct)
   a. Inspect for excessive belt wear indicating misalignment, overloading, or improper belt tension.
   b. If belts are worn, they should be replaced to prevent untimely breakdown. (Multibelt drives should be replaced in matched sets.) Adjust belt tension with a scale and straight edge.
   c. Check rigid couplings for alignment on direct drives and for tightness of assembly.
   d. Inspect flexible couplings for alignment and wear.
4. Coils
   a. Examine coils for leakage at joints and bends.
   b. Clean coil exterior by brushing, vacuuming, blowing, or chemical cleaning.
   c. Humidifier or wet coils (city water, spray, steam pan grids, etc.) will require additional attention to avoid scaling and odors.
5. Freeze Protection
   a. Check pitch of coil to drainage point and blow down with compressed air.
   b. Inspect test controls and devices used for freeze protection.
   c. Clean face bypass dampers and lubricate damper operators.
6. Controls
   a. Inspect and clean dampers, control linkage and control motors.
   b. Lubricate as necessary.

GUIDE NUMBER A-5

BOILERS, OIL FIRED
(Cleaning fireside only.)

Frequency: 1 to 5 times annually

Application: This is to provide for fireside cleaning to remove soot and maintain high efficiency.

Special instructions: Allow boiler to cool and lock and tag controls and valves in off position.

1. Clean soot from chamber, tubes, and all heat transfer surfaces.

g. Check fusible plugs if used; replace yearly.
h. Check and clean bonnets, flues, and uptakes for defective metal. Replace if necessary.
i. Check exterior structure for strains and tension.
j. Clean and lubricate forced-draft fan.
k. Check condition of door gaskets.
l. Carefully account for all tools before closing up boiler.

GUIDE NUMBER A-7

BURNER, GAS

Frequency: Annual

Checkpoints:

1. Check boiler room for adequate ventilation in accordance with AGA burner requirements.
2. Check operation of all gas controls and valves including: Gas shutoff, petal gas regulator, safety shutoff valve (solenoid), automatic gas valve, petal solenoid valve, butterfly gas valve, motor, linkage to air louver, and safety petal solenoid (if used).
3. Check flue connections for tight joints and minimum resistance to airflow. (See that combustion chamber, flues, breeching, and chimney are clear before firing.)
4. Draft regulators should give slightly negative pressure in the combustion chamber at maximum input.
5. On forced-draft burners, gas manifold pressure requirements should correspond with modulating (butterfly) valve in full-open position and stable at all other firing rates.
6. Take CO_2 flue gas temperature readings for determination of efficiency of the unit. CO_2 for atmospheric gas burners should be 8 to 9.5%; for forced draft burners 9 to 10%. Determine combustion efficiency according to instructions with flue gas test apparatus. Combustion efficiency should be at least 80%. If efficiency is low, check baffling.
7. Check burner for flashback and tight shutoff of fuel.
8. Check operation of controls. Clean and adjust if necessary.
9. Satisfactory operation and adjustments should conform to manufacturer's instructions.

GUIDE NUMBER A-8

BURNER, OIL

Frequency: Annual

Checkpoints:

1. Test and inspect burner (with or without firing) at rated pressure for leaks.
2. Timed trial for ignition for pilots and burners should be in accordance with manufacturer's instructions.
3. Check operation of automatic safety controls and combustion flame safeguards for abnormal discharge of oil on ignition failure, and sensors for presence of flame.
4. Check pre-ignition purging capability of burner, combustion chamber, boiler passes, and breeching. Stack dampers should be fully open during purge and light-off period.
5. Check delivery of fuel in relation to its response to the ignition system. Examine electrodes for carbon buildup, dislocation, distortion, and burning of parts.

4. Check for control-point cycling.
5. Check closeness of differential gap on two-position controllers (on-off-open-closed).
6. Check condition and action of primary elements in the controllers (bimetallic strips, sealed bellows with capillary tubes) for remote sensing, etc.
7. Note the action of the controlled device (thermostats, humidistats, and pressurestats) which changes the controlled variable (motors, valves, dampers, etc.).
8. On electronic controls check the source of the signal and its amplification.
9. Check air systems for leaks; check for correct maintenance of pressure in pneumatic electric and electric pneumatic units. Check units for proper closing and loose connections.
10. Check the condition and the ability of humidity-sensing primary control elements (hair, wood, leather, or similar substances) to read to moisture changes and their action on the control mechanism.
11. Check resulting action of pressure-sensing primary control elements such as diaphragms, bellows, inverted bells, and similar devices when activated by air, water, or similar pressure. Check operations of all relays, pilot valves, and pressure regulators.
12. Use test kits and manufacturer's instructions whenever possible. Replace rather than rebuild a control installed in the system. Take control to shop for repair.

GUIDE NUMBER A-11

CONDENSATE OR VACUUM PUMPS
(On steam return systems)

Frequency: Annual

Checkpoints:

1. Operate unit to check for steam binding.
2. Check condensate temperature (should be approximately 30° below steam temperature if traps are not leaking).
3. Examine flanges for steam leaks.
4. Pump receiver down.
5. Turn condensate to sewer.
6. Shut down unit.
7. Clean receiver.
8. Clean and adjust motor float switch and float operation on high-low water level. Inspect pressure switches.
9. Clean and examine receiver, vent pipe, inlet and discharge openings for excessive corrosion. Report condition.
10. Check alignment of coupling with straight edge.
11. Lubricate pump and motor.
12. Adjust packing glands and change packing when necessary.
13. Examine vacuum breaker operation.
14. Inspect ball floats, rods, and other linkage; adjust as necessary.

GUIDE NUMBER A-12

COOLING TOWERS

Frequency: Annual

Special Instructions: After the cooling season - Open and tag electric circuits.

Checkpoints:

1. Drain and flush down tower. Remove trash, dirt, and algae from pans, casings, fill, and screens.
2. Steel casing, basins, and framework should be painted with protective paint where applicable.

2. Check insulation; repair if needed.
3. Check structural members, vibration eliminators, and flexible connections.
4. Check bearings, shaft, pulley, and alignment with motor (if vibration is excessive, check balance of rotor).
5. Perform required lubrication.
6. Check belts; adjust tension, or replace as required.
7. Blow out or vacuum windings, if necessary.
8. Clean complete unit, including fan rotor. Touch up or paint as required.

GUIDE NUMBER A-16

FILTERS, MOVABLE CURTAIN, OIL COATED

Frequency: 1 to 4 times annually

Special Instructions: Review manufacturer's instructions. Secure fans and filter motor; tag switches.

Checkpoints:

1. Inspect framework and structure. Look for loose or missing bolts, air leaks, condition of flashing or caulking, etc.
2. Examine all moving parts for proper alignment, freedom of motion, excessive clearance or play, etc.
3. Inspect and adjust motor and drive unit, gear reducer, sprockets, drive chains, belts, etc. Perform required lubrication.
4. Inspect pressure-sensing device, pressure switches (if automatic), selector(s), starters, electric controls, warning and/or indicator lights, etc. Clean and adjust as necessary.
5. Remove sludge from pit; change or replenish oil.
6. Remove tags; restore to service and check operations.

GUIDE NUMBER A-17

FILTERS, ROLL-TYPE DISPOSABLE MEDIA

Frequency: 1 to 4 times annually

Application: To change roll filter media.

Special Instructions: Secure unit and fans; tag switches.

Checkpoints:

1. Remove old filter media roll and install new roll.
2. Vacuum heavy accumulation of dust and remove debris.
3. Inspect for proper alignment and operation of automatic controls, adjust as necessary.

GUIDE NUMBER A-18

FILTERS, VISCOUS-TYPE (WASHABLE)

Frequency: 4 to 52 times annually

Application: This guide is for reusable filters and includes time for removing, cleaning and replacing the filters. The throwaway filters are usually more economical than the viscous type. Therefore, this filter shall be used only where economically justified.

Checkpoints:

1. Remove filters and replace with filters that have been cleaned and recoated. Examine frame and clean it with a high suction vacuum.
2. Move dirty filters to cleaning station.
3. Clean, recoat, and store filters removed until next scheduled change.

GUIDE NUMBER A-22

FANS, PROPELLER, 24" DIAMETER OR LARGER

Frequency: Annual

Special Instructions: Disconnect and tag circuit.

Checkpoints:

1. Clean unit, especially fan blades.
2. Inspect pulleys, belts, couplings, etc.; adjust tension and tighten mountings as necessary. Change badly worn belts.
3. Perform required lubrication.
4. Clean motor with vacuum or low pressure air (less than 30 psig). Check for obstructions in motor cooling and airflow.
5. Perform visual examination for cracks at blade to blade-supporting assemblies.
6. Touch up paint for preservation.
7. Remove tags; start unit and check for vibration and noise.

GUIDE NUMBER A-23

FANS, PROPELLER, PEDESTAL OR WALL MOUNTED

Frequency: Annual

Special Instructions: This guide is for the large fans used in the workroom or other areas to provide air circulation. This maintenance should be performed during the winter prior to the cooling season.

Checkpoints:

1. Disconnect from electric power and clean entire unit including the blade and motor.
2. Examine line cord for frayed insulation or evidence of deterioration.
3. Wrench test blade setscrew, motor mount bolts, and blade guard mounting bolts.
4. Lubricate unit and clean up excess lubricant.
5. Operate unit and check for excess vibration and unusual noise.

GUIDE NUMBER A-24

FAN/COIL UNITS, UNDER-WINDOW TYPE

Frequency: 1 to 4 times annually. (These units are normally in office areas - maximum frequency is 4 times per year.)

Checkpoints:

1. Drain pan. Clean coils and other components with vacuum.
2. Inspect motor and fan. Lubricate as required.
3. Check trap, temperature regulator and shutoff valves.
4. Change filter (if equipped and necessary).
5. Check for loose connections in unit; tighten as necessary.
6. Clean and wipe down exterior vents and smooth surfaces.
7. Clean surrounding floor areas.

GUIDE NUMBER A-25

HEAT/COOLING UNIT, ROOF TOP (UP TO 15 TONS)

Frequency: Semiannual

Time: Spring 10 Hours
Fall 7 Hours

Special Instructions: This applies to roof-top heating/cooling units. Gas-fired heating with air-cooled condenser.

1. Remove panels, clean entire unit.
2. Clean drip pans and drains, paint as necessary.

c. Change oil in purge pump when it becomes contaminated or emulsified.
d. Inspect discharge valve and oil distributor rubbers; renew if necessary.

5. Controls

a. Check adjustment of pressuretrol, restrictor, high level cutout, low temperature cutout.
b. Check all control interlocks for proper operation.
c. Check capacity control valve, linkage, and stem. Lubricate according to manufacturer's instructions.

GUIDE NUMBER A-27

REFRIGERATION MACHINES
(Centrifugal and Reciprocating)

Frequency: Annual

Special Instructions: Open and tag electric circuits.

Checkpoints:

1. Compressor

a. Take sample of oil and have analyzed for acid and metal content. Keep report of analysis with PS Form 4772. Drain, flush, and change oil in reservoirs including filters, strainers, and traps. Do not change oil in reciprocating machines unless contaminated.
b. Clean and inspect main and auxiliary oil pumps, including packing, seals, alignment, pulleys, belts, and couplings.
c. Check speed increaser; drain oil from gear box; flush and inspect gears for indication of wear, pitting, and misalignment.
d. Remove head from oil coolers; inspect and clean tubes. Change oil filters.
e. Refill oil sump.
f. Remove access caps to compressor internals and clean where possible.
g. Clean and adjust pilot positioner for guide vanes.
h. Examine bearing for clearances and wear.
i. Clean and lubricate coupling.
j. Check hot and cold alignment between drive and driven compressor.
k. Check all relief valve rupture discs.
l. Test entire system for refrigerant leaks.
m. Calibrate and adjust all gauges and instruments. Note that the thermometers which measure inlet and outlet temperature of chilled water should be calibrated together. Do this by placing the sensing element in a container of melting ice and water. This will provide a temperature of 32°F for calibration purposes.
n. Check safety controls for setting operation; tighten electrical connections and clean where indicated.
o. Review manufacturer's literature for further details on service required on compressor.
p. Perform maintenance on purge unit in accordance with manufacturer's instructions.
q. Leave equipment and area clean and free of debris.

GUIDE NUMBER A-30

UNIT HEATERS (STEAM AND HOT WATER)

Frequency: Annual

Checkpoints:

1. Clean strainer ahead of valve. Check valve head and seats for wear and cutting.
2. Replace valve if seats need regrinding. Send old valve to manufacturer for overhaul.
3. Steam quality should be examined for foreign matter if valves are being damaged.
4. Examine pilot lines for dirt.
5. Check steam gauges.
6. Check safety or pressure relief valve for relieving and seating.
7. Check diaphragms for failure.
8. Check binding of valve stem.
9. Clean and adjust heater deflector fins and element.
10. Clean fan and lubricate motor.
11. Adjust weighted lever or spring-control tension.

GUIDE NUMBER A-31

UNIT HEATERS (GAS FIRED)

Frequency: Annual

Special Instructions: Open and tag electric circuit.

Checkpoints:

1. Clean and adjust heater deflector fins and element.
2. Clean fan and lubricate motor.
3. Clean burner, chamber, thermo-couple, and control. (Use a high suction vacuum and/or brush).
4. Adjust pilot or electric ignition device.
5. Inspect vent and damper operation.
6. Operate unit and adjust burner.
7. Check operation of safety pilot, gas shutoff valve, and other burner safety devices.

GUIDE NUMBER A-32

FIRE DAMPERS (IN DUCT)

Frequency: Annual

Special Instructions: Fusible link must never be replaced with a piece of wire. On first inspection, make sure that the damper is not installed backwards. In all cases, the air movement should tend to close damper.

Checkpoints:

1. Determine that the access door is reasonably airtight and latches properly.
2. If damper is closed, check for ruptured fusible links, broken attachment or hinges, damage, corrosion, etc.
3. Remove fusible link and check for proper rating.
4. Determine that damper is self-closing and properly latches. Adjust if necessary.
5. Lubricate friction points and exercise damper to ensure complete freedom of movement.
6. Each year install new fusible links of proper rating and tensile strength in areas of vibration.
7. Reinstall fusible link (locations where vibration is not a problem).
8. Close access door and check for wind noise.

GUIDE NUMBER A-33 AND A-34

GENERAL MONITORING SYSTEM

Special Instructions: See current Maintenance Bulletin for preventive maintenance checklist items, frequencies, time standards, etc., for GMS components. Calculate annual workhour requirements and enter on Form 4896-A.

GUIDE NUMBER E-4

EMERGENCY LIGHTS

Frequency: Annual

Special Instructions: Use rubber gloves and apron. Do not spark battery terminals or smoke while performing maintenance. Review and follow manufacturer's instructions for cycling batteries. In some cases it may be necessary to remove the light from service and perform the cycling in a shop area. Any light that is removed must be replaced immediately. In some cases only the batteries may have to be changed out. (See manufacturer's instructions.) The checkpoints apply to wet-cell, dry-cell, and gel-cell batteries unless otherwise indicated.

Checkpoints:

1. Inspect for structural defects and deposits.
2. Clean off corrosion deposits and apply silicone grease to terminals (wet-cell).
3. Inspect water level and take specific gravity reading. If reading is less than specified by battery manufacturer, the battery should be replaced with a freshly charged one. The old battery should be charged and tested before discarding (wet-cell).
4. Add distilled water to raise electrolyte to proper level (wet-cell).
5. Push test button and observe light operation. (See manufacturer's instructions.)
6. Check vent holes (wet-cell).
7. Clean exterior with dry cloth.
8. Disconnect unit to operate for 1 1/2 hours. At the end of 1 1/2 hours, the unit must be fully operational. If the manufacturer's instructions recommend cycling the battery by allowing the unit to operate until the lights go out, leave the unit disconnected beyond the 1 1/2 hours to complete cycling. Reconnect the unit.
9. Record the results of the 1 1/2 hours' duration test on the route sheet. If the unit did not pass the test, replace or repair it.

GUIDE NUMBER E-5

LEAD-ACID BATTERIES

Frequency: Quarterly

Application: This guide is for batteries used on switch gear, control circuits, fire alarm systems, sprinkler supervisory systems, and transformer supervisory systems where the source of DC power must be reliable.

Special Instructions:

1. Use caution in handling the batteries and electrolyte. The electrolyte is injurious to the skin and clothing.
2. Never smoke or carry an open flame in or near the battery charging area.
3. Wear apron, face shield, and gloves.
4. Never remove any connecting cables or straps while charging or when there is a possibility of a load being on the batteries (this can cause a spark that may ignite ever-present hydrogen gas).

Checkpoints:

1. Check as-found voltage and specific gravity for each cell and record on Form 4815, Storage Battery Monthly Report. Check and record the temperature of two to three cells in each row.
2. When the electrolyte is at the lowest mark, add distilled water to bring it to the proper level.

GUIDE NUMBER E-12

LIGHTNING PROTECTION

Frequency: Annual

Special Instructions: On first inspection, check that (1) all air terminals (lightning rods) are interconnected, (2) at least two down conductors are installed with their own ground connection.

Checkpoints:

1. Inspect air terminals for corrosion and rigid attachment to structure.
2. Examine conductors for corrosion, strong mechanical joints which provide good electrical conductivity, and loose or broken fasteners.
3. Check for loops, sharp bends (less than 8" radius), and frayed horizontal and vertical conductors.
4. Check for damaged guards and down conductors.
5. Inspect grounding attachment for permanency and corrosion (if practical).
6. Test resistance to ground for each down conductor.

GUIDE NUMBER E-29

MOTORS

Frequency: Annual

Application: This guide is for squirrel-cage, wound-rotor, and synchronous motors in excess of 5 horsepower. The maintenance specified by this guide is not intended to require disassembly of the motor. This guide does not normally apply to motors rated less than 5 horsepower on building equipment. Maintenance for these motors is normally limited to cleaning and lubrication which is accomplished with the maintenance of the driven machine.

Special Instructions: Open and tag the circuit serving motor. Obtain and review manufacturer's instructions. Give special attention to lubrication procedure as well as brush and commutator maintenance.

Checkpoints:

1. Clean motor with a clean rag or vacuum. Clean areas otherwise inaccessible, by blowing with clean, dry air using not more than 30 pounds per square inch pressure. Clean surfaces and ventilation passages thoroughly.
2. Visually inspect winding for cleanliness. Look for coating of oil or grease (disassembly of a motor for cleaning is normally beyond the scope of preventive maintenance).
3. Check air gap uniformity and report defective bearings for replacement.
4. Inspect squirrel-cage rotors for broken or loose bars and evidence of local heating.
5. On wound-rotor and synchronous motors thoroughly clean the collector rings and/or commutators. Inspect them for roughness and eccentricity. Examine brushes for fit, free play, chipped toes or heels, heat cracks, wear, and contact pressure.
6. Perform lubrication according to manufacturer's instructions.
7. Inspect for moisture and protection from water.
8. If motor has not been operated for an extended period, check insulation resistance with a megger. If insulation resistance

9. Inspect generator heaters.
10. Report any needed repairs.

GUIDE NUMBER E-33

EMERGENCY GENERATORS, ALL TYPES OF ENGINES

Frequency: Monthly

Application: This guide provides for the operational test of emergency generators.

Special Instructions: Check fire extinguishers for location and type. Allow no open flames or smoking in the area. Use only approved safety-type fuel cans. Obtain and review manufacturer's instructions and specifications.

Checkpoints:

1. Drain condensate from bottom of fuel tank and check fuel for quantity and contamination.
2. Check engine oil level.
3. Check coolant level and inspect for leaks. Inspect engine air cleaner; replace if dirty.
4. Test and determine specific gravity of starting batteries. Clean terminals. Set proper charge rate after generator has been operated.
5. Examine generator for moisture and/or dirt.
6. Start and operate unit under full load for 1 hour. It is important that the unit be operated under load. If a portion of the building load cannot be connected, a resistance load should be used.
7. While unit is operating, thoroughly observe operation for indication of defects or possible malfunctions.
8. After unit has operated for 50 minutes, log the operation to show at least the following information: engine and generator speed in RPM, operating voltage, operating amperes, engine temperature, engine oil pressure, and hour meter readings.
9. After unit has been operated, check lubricant and coolant according to manufacturer's instructions to assure that it will be ready to operate in an emergency.
10. Report any needed repairs or observed defects.

GUIDE NUMBER E-34

FIRE SUPERVISORY SIGNALS - TESTING

Frequency: Quarterly

Special Instructions: The work required by this procedure may cause the activation of an alarm and/or a supervisory signal. The field office manager and the control center or fire department that will receive the alarm and/or signal must be notified prior to start of work. When feasible, the position of valves, air pressure, temperature, or water level being monitored should be altered to actuate the signals. Check all supervisory devices for damage, corrosion, and pitted electrical contactors. Inspect conduit for loose joints, hangers, and clamps.

Checkpoints:

1. Valve supervision - turn valve stem about three revolutions and check for signal. Adjust tamper device if necessary.
2. Air pressure supervision:
   a. Inspect pressure gauges for any damage.
   b. Tap gauge to see if needle is jammed or immovable.
   c. Check for proper air pressure.

4. Test line voltage on each circuit, voltage-to-ground on ungrounded systems, and supervisory current, when applicable. Log the readings and weather conditions.
5. Inspect for burned out indicator lamps, inoperative targets, and all other types of supervisory signals on the control board.

GUIDE NUMBER E-37

FIRE ALARM SYSTEM - RECORDERS

Frequency: Weekly

Checkpoints:

1. Clean recording devices.
2. Check prewound mechanisms. Rewind if necessary.
3. Examine alignment and tension of paper tape and supply of tape on reels. Install new tape when needed.
4. Manually move ribbon to prevent ink from drying (Papermarking type).
5. Inspect for legible punctures or markings on tape.
6. Check for correct time on time stamp. Reset if necessary.

GUIDE NUMBER E-38

FIRE ALARM BOXES (MANUAL)

Frequency: Quarterly (Bimonthly if nonsupervised)

Special Instructions: The work required by this procedure may cause the activation of an alarm and/or a supervisory signal. The field maintenance manager and the control center or fire department that will receive the alarm and/or signal must be notified prior to start of work. When alarm systems are connected to municipal systems, test signals to be transmitted to them will be limited to those acceptable to that authority. Results should be recorded on the route sheet. A different box should be activated on each test.

Checkpoints:

1. Examine box for damage and legible box number.
2. Check external tamper devices.
3. When practical, remove "Break Glass" and follow instructions for actuating alarm.
4. Confirm that proper signal (coded or uncoded) is transmitted to receiving station (Central Control Station, Fire Department, Police Department, ADT, etc.).
5. Determine that audible alarms or signals (local or general) actuated by the alarm box are operating.
6. Inspect recording register for legibility, time, code number, and number of rounds.
7. On systems with shunt noninterfering or positive noninterfering circuits, operate one box and then operate another box on each box loop prior to the completion of the first cycle. Check for interference at receiving station or recording register.
8. Restore alarm box and accessories to normal position promptly after each test. This includes rewinding, resetting, replacement of tamper devices, etc.

motor generator set connections, change oil in bearings, and lubricate in accordance with manufacturer's instructions.

8. Miscellaneous - Observe operation of signal and dispatching systems. Inspect drum buffers, rope clamps, slack cable switch, coupling, shaft, keyways, indicator dials, and pulleys. Clean, adjust, and lubricate as necessary.
9. Emergency Light - Check operation.
10. Oil Level - Check level in oil buffer.
11. For elevators provided with Fire Fighters Service, initiate Phase I Recall and operate to at least two floors under Phase II Operation. Log results of this test on reverse of route sheet.

GUIDE NUMBER L-3

ELEVATORS, ELECTRIC

Frequency: Annual (Third Month)

Special Instructions: Review manufacturer's instructions.

Checkpoints:

1. Door Operation - Clean, lubricate, and adjust brake, operation of checks, linkages, gears, wiring, and motor; check keys, setscrews, contacts, chains, and cams.
2. Door Closer - Clean, adjust, and lubricate pivot points, sill trips, and checking devices.
3. Guide Shoes - Lubricate guide shoe stems; adjust if necessary.
4. Car - Test alarm bell system. Clean light fixtures. Inspect, clean, and adjust retiring cam device, chain, dashpots, commutators, brushes, cam pivots, fastenings. Test emergency switch (ground case if necessary). Inspect safety parts, pivots, setscrews, switches, etc. Check adjustment of car shoes or roller guides; adjust if necessary. Clean and lubricate car gate tracks, pivots, hangers, car grille, and stile channels.
5. Selector - Clean, adjust, and lubricate brushes, dashpots, traveling cables, chain, brush, pawl magnets, wiring, contacts, relays, tape drive, and broken tape switch.
6. Controllers - Clean with blower; check alignment of switches, relays, timers, hinge pins, etc. Adjust and lubricate. Check all condensers, resistance tubes, grids, fuses, holders, and all controller connections.
7. Miscellaneous - Observe operation of signal and dispatching systems. Inspect drum buffers, rope clamps, slack cable switch, couplings, shafts, keyways, etc. Clean, adjust, and lubricate as necessary.
8. Emergency Light - Check operation.
9. Oil Level - Check level in oil buffer.
10. For elevators provided with Fire Fighters Service, initiate Phase I Recall and operate to at least two floors under Phase II Operation. Log results of this test on reverse of route sheet.

GUIDE NUMBER L-4

ELEVATORS, ELECTRIC

Frequency: Annual (Fourth Month)

Special Instructions: Review manufacturer's instructions.

Checkpoints:

1. Door Operation - Clean, lubricate, and adjust brake, operation of checks, linkages, gears, wiring, and motor; check keys, setscrews, contacts, chains, and cams.

shafts, keyways, etc. Clean, adjust, and lubricate as necessary.
9. Emergency Light - Check operation.
10. Oil Level - Check level in oil buffer.
11. For elevators provided with Fire Fighters Service, initiate Phase I Recall and operate to at least two floors under Phase II Operation. Log results of this test on reverse of route sheet.

GUIDE NUMBER L-6

ELEVATORS, ELECTRIC

Frequency: Annual (Sixth Month)

Special Instructions: Review manufacturer's instructions.

Checkpoints:

1. Door Operation - Clean, lubricate, and adjust brake, operation of checks, linkages, gears, wiring and motor. Check keys, setscrews, contacts, chains, and cams.
2. Door Closer - Clean, adjust, and lubricate pivot points, sill trips, and checking devices.
3. Selector - Clean, adjust, and lubricate brushes, dashpots, traveling cables, chain, brush and pawl magnets, wiring, contacts, relays, tape drive, and broken tape switch.
4. Car - Test alarm bell and communication system. Clean, adjust and lubricate car gate tracks, pivots, hangers, etc. Clean light fixture. Test emergency switch. Inspect, clean, and adjust retiring cam devices, chain, dashpots, commutator, brushes, cams, pivots, fastenings, etc. Inspect safety parts, pivots, set-screws, and switches. Check clearance of car and safety shoes; adjust as necessary. Test all safety devices. Check car enclosure steadying plates. Inspect stile channels for bends or cracks, also car frame, cams and supports. Inspect gate upthrust, sill grooves, bottom guides, etc. Clean and adjust as required. Lubricate moving parts of door or gate, pivot points, sheaves, guides, and track.
5. Miscellaneous - Observe operation of signal and dispatching systems. Inspect drum buffers, rope clamps, slack cable switch, couplings, shafts, keyways, etc. Clean, adjust, and lubricate as necessary.
6. Emergency Light - Install new dry-cell battery, and check operation.
7. Oil Level - Check level in oil buffer.
8. For elevators provided with Fire Fighters Service, initiate Phase I Recall and operate to at least two floors under Phase II Operation. Log results of this test on reverse of route sheet.

GUIDE NUMBER L-7

ELEVATORS, ELECTRIC

Frequency: Annual (Seventh Month)

Special Instructions: Review manufacturer's instructions.

Checkpoints:

1. Door Operation - Clean, lubricate, and adjust brake, operation of checks, linkages, gears, wiring and motor. Check keys, set-screws, contacts, chains, and cams.
2. Door Closer - Clean, adjust, and lubricate pivot points, sill trips, and checking devices.

GUIDE NUMBER L-9

ELEVATORS, ELECTRIC

Frequency: Annual (Ninth Month)

Special Instructions: Review manufacturer's instructions.

Checkpoints:

1. Door Operation - Clean, lubricate, and adjust brake, operation of checks, linkages, gears, wiring and motor; check keys, setscrews, contacts, chains, and cams.
2. Door Closer - Clean, adjust, and lubricate pivot points, sill trips, and checking devices.
3. Selector - Clean, adjust, and lubricate brushes, dashpots, traveling cables, chain, brush and pawl magnets, wiring, contacts, relays, tape drive, and broken tape switch.
4. Controllers - Clean with blower. Check alignment of switches, relays, timers, hinge pins, etc. Adjust and lubricate; check all resistance tubes and grids; check oil in overload relays, settings, and operation of overloads. Clean and inspect fuses, holders, and all controller connections.
5. Car - Test alarm bell and communication systems. Clean, adjust, and lubricate car gate tracks, pivots, hangers, etc. Clean light fixture. Test emergency switch. Inspect, clean, and adjust retiring cam device, chain, dashpots, commutator, brushes, cams, pivots, fastenings, etc. Inspect safety parts, pivots, setscrews, switch, etc. Check adjustment of car shoes or roller guides; adjust if necessary.
6. Emergency Light - Check operation.
7. Oil Level - Check level in oil buffer.
8. For elevators provided with Fire Fighters Service, initiate Phase I Recall and operate to at least two floors under Phase II Operation. Log results of this test on reverse of route sheet.

GUIDE NUMBER L-10

ELEVATORS, ELECTRIC

Frequency: Annual (Tenth Month)

Special Instructions: Review manufacturer's instructions.

Checkpoints:

1. Door Operation - Clean, lubricate and adjust brake, operation of checks, linkages, gears, wiring and motor; check keys, set-screws, contacts, chains, and cams.
2. Door Closer - Clean, adjust, and lubricate pivot points, sill trips, and checking devices.
3. Selector - Clean, adjust, and lubricate brushes, dashpots, traveling cables, chain, brush and pawl magnets, wiring, contacts, relays, tape drive, and broken tape switch.
4. Car - Clean, adjust, and lubricate car door or gate tracks, pivots, hangers, etc.
5. Leveling - Clean, adjust, and lubricate leveling switches, leveling operation, hoistway vanes, and magnets or inductors.
6. Machine - Inspect worm and gear backlash, thrust end play, and any bearing wear in machine.
7. Hoistway Doors - Clean and lubricate tracks, chains, sheaves, hangers, check upthrust and adjust if necessary. Fill and adjust checks. Check bottom gibs, struts, sills, headers, and fastenings. Adjust door contacts as required.

4. Guides - Lubricate wheel bearings (roller guides) as necessary.
5. Car - Clean, adjust, and lubricate car gate tracks, pivots, hangers, etc. Test alarm bell and communication system. Clean light fixture. Test emergency switch. Inspect safety parts, pivots, setscrews, and switch. Check adjustment of car shoes or roller guides. Inspect stile channels for bends or cracks, also car frame, cams, and supports. Inspect gate or door upthrust, sill grooves, and bottom guides. Check pivot points, sheaves, guides, and tracks for wear.
6. Miscellaneous - Inspect drum buffers, rope clamps, slack cable, switch, coupling, shafts, keyway, etc. Clean, adjust, and lubricate. Observe operation of signal and dispatching system.
7. Emergency Light - Install new dry-cell battery and check operation.
8. Oil Level - Check level in oil buffer.
9. For elevators provided with Fire Fighters Service, initiate Phase I Recall and operate to at least two floors under Phase II Operation. Log results of this test on reverse of route sheet.

GUIDE NUMBER L-13

ELEVATORS, HYDRAULIC

Frequency: Monthly

Special Instructions: Review manufacturer's instructions.

Checkpoints:

1. Observe operation of elevator throughout its full range and at all floors it serves to test controls, safety devices, leveling, releveling, and other devices. If creeping is excessive, determine cause and correct it.
2. Check opening and closing of doors, gates, the indicators in cab, and at each floor.
3. Inspect interior of car. Test telephone, normal and emergency lights, fan, emergency call system or alarm, miscellaneous hardware, certificate and holder, control panel, emergency light, etc.
4. Inspect hoistway and pit. Clean and lubricate equipment as required.
5. Test mechanism. Observe operation of motor and pump, oil lines, tank, controls, plunger, packing; check oil level, etc.
6. Test manual and emergency control.
7. Report any needed work you cannot do.
8. For elevators provided with Fire Fighters Service, initiate Phase I Recall and operate to at least two floors under Phase II Operation. Log results of this test on reverse of route sheet.

GUIDE NUMBER L-14

ELEVATORS, HYDRAULIC

Frequency: Annual

Special Instructions: Review manufacturer's instructions.

Checkpoints:

1. Thoroughly clean the mechanism, hoistway, pit, top and bottom of cab, etc.
2. Make annual inspection and test.
3. If possible, the above shall coincide with required USPS annual inspection of the elevators and issuance of Form 279, Certificate of Inspection.

8. Follow manufacturer's recommendations for lubrication.
9. Perform annual work as prescribed by the manufacturer.
10. Reassemble entire unit, thoroughly cleaning steps, and check for broken treads as steps are replaced. Check entire unit for proper running clearances. Reshim steps as required.
11. Submit condition report to supervisor listing any major repairs required so that needed parts can be ordered and work scheduled.

GUIDE NUMBER L-17

ELEVATORS, SIDEWALK

Frequency: Monthly

Special Instructions: Review manufacturer's instructions. Use suitable barricade for sidewalk opening.

Checkpoints:

1. Operate elevator through full range and at the levels served to test controls, safety devices, leveling, releveling, and other devices. If creeping is excessive, determine cause and correct.
2. Inspect opening and closing of sidewalk doors. Clean cam(s), moving parts, hoistway, pits, etc. Lubricate as required.
3. Test emergency stop switch and signal bell or alarm.
4. Examine operating mechanism, motor, motor controls, pump, oil lines, valves, tanks, etc.
5. Report any deficiencies found during scheduled maintenance.

GUIDE NUMBER L-18

WINDOW WASHING SCAFFOLD, POWER OPERATED

Frequency: Quarterly

Special Instructions: Review manufacturer's instructions.

Checkpoints:

1. Inspect structural features on roof. Remove any obstructions from the track and from, on, or near the garage.
2. Inspect roof car, platform, steps, wire mesh panels, gate, hinges, hardware, etc.
3. Observe operation of drive motor and mechanism, brake, cable, reel, drive, wheels, guide rollers, etc. Adjust as necessary.
4. Examine telephone cable reel and make a test call.
5. Inspect operation of electric controller, direction switches, inching buttons, protective devices, limit switches, position interlocks, locking pins, and sockets, etc. Adjust as necessary.
6. Check operation of manual and/or emergency controls, handcrank, motor disengagement, brakes, and other devices. Adjust as necessary.
7. Inspect fresh water and wash water tanks, pipe lines, drains, inspection or access openings and covers, etc. (Tanks should be emptied and washed out after use).
8. Test operation of scaffold from low to high position and along track to assure safe operation and test operation of all control devices, limits, interlocks, etc.

Checkpoints:

1. Change engine oil (Note: oil should be changed and gasoline drawn at end of season prior to laying up unit for winter).
2. Service air and fuel filters.
3. Sharpen or replace cutting blade.
4. Clean and gap or replace spark plug.
5. Inspect unit, clean debris from cooling air passages, and make other needed adjustments.

GUIDE NUMBER M-3

SWEEPERS (GASOLINE)

Frequency: Every 50 Operating Hours

Special Instructions: Review manufacturer's maintenance recommendations.

Application: Gasoline- or gas-powered riding type sweepers used in driveways, parking lots, sidewalks, etc. Daily lubrication should be accomplished by the operator.

Checkpoints:

1. Change oil and change or clean filter, as appropriate, every fifty operating hours.
2. Service air and fuel filters.
3. Inspect engine, clean cooling air passages.
4. Clean and gap, or change spark plug.
5. Check oil level in gear boxes.
6. Adjust tension and/or replace V-belts.
7. Adjust brakes, brushes, and operating mechanisms as recommended by the manufacturer's instructions.
8. Inspect entire unit and make or report needed repairs.

GUIDE NUMBER M-4

TANKS, FUEL OIL STORAGE

Frequency: Every 4 Years

Checkpoints:

1. Prior to end of heating season, adjust oil deliveries so oil will be nearly consumed.
2. Remove manhole.
3. Pump oil tank down to within 6" of bottom of tank.
4. Pump sludge from bottom of tank and flush and dispose of by approved method. A vacuum truck may be required to remove and dispose of sludge.
5. Disconnect heating coil; remove from tank and clean.
6. Examine tank for leaks; check condition of piping connections.
7. Clean and adjust oil transfer pumps (oil- or steam-driven).
8. Examine, clean, and adjust operation of strainers, traps, control valves, oil-flow meter, oil temperature, and pressure gauges.
9. If a worker must enter tank, test for oxygen deficiency, and supply proper respirator as needed. Safety harness must be worn. (Observer shall be present outside tank at all times when worker is inside tank.)

GUIDE NUMBER M-5

PAPER BALERS

Frequency: Annual

Special Instructions: Open and tag electric switches.

GUIDE NUMBER M-8

DOOR, POWER-OPERATED MAIN ENTRANCE AND DOCK

Frequency: Quarterly

Checkpoints:

1. Check alignment of door and mechanism. Inspect mountings, hinges, mats and trim, weather stripping, etc. Replace, tighten, and adjust as required.
2. Operate with power, observing operating of actuating and safety mats, door speed, and checking functions.
3. Check manual operation.
4. Inspect power unit, add oil, and tighten hydraulic lines as required.
5. Check operation of control board relays; clean, replace, and adjust contacts as required.
6. Inspect door operating unit, tighten lines, and adjust as required.
7. Clean and lubricate door pivot points.
8. Report any needed repairs.

GUIDE NUMBER M-9

DOORS, MAIN ENTRANCE

Frequency: Semiannual

Application: Entrance doors used in main entries to buildings where a poorly operating door may be dangerous and cause congestion.

Checkpoints: (for hinged doors)

1. Inspect the frame and supporting structure.
2. Inspect hardware: hinges, latch keeper, lock, etc. Apply graphite where needed; wipe off excess.
3. Inspect glass, putty, or retaining pieces. Correct any deficiencies.
4. Operate door to observe functioning of check. Adjust and service as needed.
5. Touch up paint as needed.

Checkpoints: (for revolving doors)

1. Remove obstructions and clean out track.
2. Fold door. Note action and freedom of motion.
3. Inspect locking device; adjust as needed.
4. Clean pivot points and apply graphite.
5. Inspect felt or rubber seals. Report needed repairs.
6. Touch up paint as required.

GUIDE NUMBER M-10

LOADING RAMPS, ADJUSTABLE

Frequency: Quarterly

Special Instructions: Disconnect, lock, and tag switch out. Review manufacturer's instructions.

Checkpoints:

1. Inspect structural features, framework, support members, anchor bolts, pit, platform, etc. Examine condition of bumper. Does it protect ramp properly?
2. Remove dirt and trash from pit, and determine if pit drain is open.
3. Inspect motor, controls, starter, push buttons, solenoids, etc. Clean, adjust, and lubricate as necessary. Be sure disconnect switch can be locked.
4. For hydraulic units:

   a. Inspect coupling, pump, control valves, piping, relief valve, reservoir, fill pipe, cap, vents, etc. Clean, adjust, and lubricate as needed.

2. Oil shaft bearing under Packer with #10 oil.
3. Lubricate container roller fittings in axle.
4. Oil all moving joints on container door latch with #10 oil.
5. Oil all container door hinges with #10 oil.
6. Oil Tie Rod (Lock Hook) with #10 oil. Inspect condition of cotter pins.
7. Wipe clean and apply heavy grease along top slide.
8. Wipe clean and apply heavy grease throughout length of slide channel.
9. Inspect cotter pins, closed end of Packer Cylinder. Look for signs of wear, or broken cotter pins.
10. See that all dirt and debris have been cleared from under and around carriage of compaction unit.
11. Check open-end Packer Cylinder mounting pin.

GUIDE NUMBER M-14

STATIONARY PACKERS

Frequency: Monthly

Checkpoints:

1. Observe all safety precautions. Shut off current before performing activities listed below.
2. Remove breather cap on oil tank. Clean breather holes and replace cap. Do not press on so tightly as to block air passage.
3. Inspect mounting hardware on side and bottom slides. Check for lost or broken cotter pins and loose belts.
4. Check and tighten mounting hardware on Scraper Bar.

GUIDE NUMBER M-15

STATIONARY PACKERS

Frequency: Quarterly

Checkpoints:

1. Observe all safety precautions. Shut off current before performing activities listed below.
2. Check hydraulic oil for proper level and presence of contamination. Add or change oil as appropriate.
3. Remove, clean, or replace oil filter.
4. Grease the grease hole coupling.

GUIDE NUMBER M-16

SWEEPERS, ELECTRIC (BATTERY)

Frequency: Monthly

Checkpoints:

1. Check battery for correct water level. Add water if required.
2. Check battery terminals and cable clamps for corrosion and looseness.
3. Check hydraulic pump, hoses, lines, fittings, etc. for noise, leakage, and damage.
4. Check condition of tank and dust filter. Clean filter in solvent as necessary.
5. Check belts and chains for proper tension, wear, alignment, and general condition.
6. Check operational controls for proper operation.
7. Check dust skirts for proper adjustment.
8. Check hydraulic fluid and add lubricant #HY-2 as required. Replace filter as necessary.

Checkpoints:

1. Check all moving parts for signs of wear and looseness.
2. Check and secure all connecting pins, nuts, rollers, and retaining rings.
3. Wrench test all setscrews.
4. Clean trash and dirt from pit area.
5. Wipe ram with soft cloth and solvent.
6. Clean dirt buildup from motor, hydraulic pump, frame, and housing.
7. Lubricate moving parts as required.
8. Check oil in reservoir for proper level and condition. Change oil when needed. In large units laboratory analysis of oil sample may be required annually to determine if oil needs changing.
9. Clean up, remove all tools, and check operation of unit.

GUIDE NUMBER M-21

DOCK BOARDS

Frequency: Monthly

Safety: Block dock board in up position with a 4x4 timber. This timber shall be especially prepared (cut to the correct length) for this purpose and placed securely under the board.

Checkpoints:

1. Clean trash and dirt from pit.
2. Check clevis pins for wear and presence of clevis pin retainers.
3. Check springs and cable for wear.
4. Lubricate moving parts as required.
5. Check for proper operation.

GUIDE NUMBER P-2

FIRE CONTROL VALVES FOR WATER DISTRIBUTION SISTEMS

Frequency: Annual

NOTE: Some states require specific training and licensing for persons installing and maintaining sprinkler systems. Therefore, local codes must be complied with.

Special Instructions: The work required by this procedure may cause the activation of an alarm and/or a supervisory signal. The building manager and the control center or fire department that will receive the alarm and/or signal must be notified prior to start of work. When a valve is left unattended in a position which will interrupt fire protection water supply, it must be tagged in accordance with Section 10. Most fire system control valves are normally in the open position. If a valve is found closed at the time of the inspection, confirmation must be obtained through the building manager's office on the proper normal valve position. This work should be done when other scheduled maintenance is being performed that involves waterflow through valve(s).

Checkpoints:

1. Remove any obstructions to easy accessibility of valve.
2. Determine that safe ladders or access ways are in place where needed.
3. Inspect for damage to valve or accessories, including tamper locking devices.
4. Determine that valve is properly identified.

8. If extinguisher is a nongauge type, inspect for immovable or corroded pressure-indicating stem.
9. For CO_2 and Halon fire extinguishers, weigh the extinguisher and compare to gross or full weight stamped on shell body. If underweight more than 10%, it must be recharged; if other evidence of damage exists, hydrostatically test.
10. Ensure that seal or tamper indicator is not missing or broken. Replace extinguisher if seal or tamper indicator is missing or broken.
11. Complete the applicable portions of Form 4705, Fire Inspection Tag.

GUIDE NUMBER P-4

FIRE EXTINGUISHER, PORTABLE, GAS (CO_2) - CARTRIDGE TYPE

Frequency: Annual

Special Instructions: This maintenance is a thorough examination for deficiencies requiring repair or replacement. Do not operate any extinguisher if either the shell or cartridge shows signs of mechanical damage or corrosion. The cartridge must be removed and depressurized prior to disposal. Hydrostatic test must be performed on damaged or corroded shell (see Guide P-5). Deficiencies must be repaired or the extinguisher replaced. An extinguisher removed from service must be immediately replaced with one of suitable extinguishing capabilities. The monthly inspection (see Appendix 13-C, Part 4) must be performed at the same time this maintenance is performed. This guide is applicable to gas (CO_2) cartridge type dry chemical extinguishers. Review HKB MS-56 for additional information on fire extinguishing equipment.

Checkpoints:

1. Inspect for dents, broken hanger attachments or handle, corrosion at seams, damaged threads, and legible operating instructions. Replace in accordance with HBK MS-56, Section 442.
2. Check for signs of damage or tampering. If seal is broken, remove cartridge and check actual weight versus gross weight stamped on cartridge. Replace any cartridge that has lost its gas. (Weigh replacement cartridge.) Refill shell to proper level with extinguishing agent.
3. Inspect for damaged, jammed, bent, or corroded puncture lever, pin, and fastener on puncture mechanism for gas cartridges.
4. Inspect valves and carrying handles for corroded or damaged handles, springs, stems, fasteners, joint, threads, and jammed levers.
5. Replace cracked, cut, or brittle hose, nozzle, or horn and damaged couplings. Remove obstructions in nozzle, horns, or hose. Check for leaks.
6. If necessary, replace seal or tamper indicator if no other deficiencies exist.
7. Complete the applicable portions of Form 4705, Fire Inspection Tag.

GUIDE NUMBER P-5

FIRE EXTINGUISHERS, HYDROSTATIC TESTING OF STORED PRESSURE AND CARTRIDGE TYPE

Frequency: 5 Years (Except as noted below)

Special Instructions: Hydrostatic testing of extinguishers requires experienced personnel and suitable testing equipment. Adequate facilities must be provided. Fire extinguishers

5. Verify all devices (manual pull stations, detectors, abort switches, valves, etc.) are suitably protected to prevent damage which would cause them to be inoperative.
6. Verify all warning and instruction signs installed at entrances, inside protective areas, and near operating devices are current and in usable condition.
7. Test system according to manufacturer's instructions.
8. Check for proper alarm and signal operation.

GUIDE NUMBER P-7

GREASE TRAPS

Frequency: Monthly

Special Instructions: Use appropriate protective clothing, especially safety glasses.

Checkpoints:

1. Clean out trap and sterilize.
2. Inspect for clogging, scale, and improperly positioned or missing baffles.
3. Tighten loose parts as necessary.

GUIDE NUMBER P-9

MANHOLES, SEWER

Frequency: Quarterly

Special Instructions: Wear suitable protective clothing.

Checkpoints:

1. Remove cover.
2. Observe flow.
3. Examine structural features of sewer line, interior of manhole, manhole frame and cover, etc.
4. Touch up paint as required.
5. Report any deficiencies or needed repairs.

GUIDE NUMBER P-10

SEWAGE EJECTORS (PNEUMATIC TANK TYPE EJECTORS)

Frequency: Annual

Special Instructions: Open and tag electric circuit. Review manufacturer's instructions.

Checkpoints:

1. Remove cover plates, inspect check valves in compressor discharge lines, and suction and discharge lines of sewage pot. Check freedom of motion and wear on clapper or clapper seat.
2. Remove sewage pot inspection plate. Inspect and clean float ball or bucket and rod.
3. Inspect float assembly linkage, shaft, keys, keyways; look for wear, binding, etc.
4. Change oil in immersed float switch. Check packing.
5. Remove any obstructions from water line. Check strainer.
6. Check solenoid valve for freedom of motion.
7. Stop all leaks.
8. Remove cover plate of separator in vent line. Remove any obstructions in vent.
9. Slide valve and piston valve (if applicable). Examine linkage for freedom of motion and excessive wear; replace or adjust as required.
10. For rotary air compressors, check shaft packing. Repack if needed.
11. Change lubricant, flush, and replenish.
12. Examine mounting bolts alignment, etc. Adjust or tighten as necessary.
13. Inspect, lubricate, pack, or reservice all valves as required.
14. Examine motor, controls, starter, etc. Clean and lubricate as necessary.

7. Check diaphragms for failures.
8. Check binding valve stem.
9. Adjust weighted lever or spring control tension.

GUIDE NUMBER P-14

VALVES, MANUALLY OPERATED
(Main line or critical)

Frequency: Main line or critical: Annual; Other over 2 inches: 5 Years

Application: For valves other than those used on Fire Protection systems. Maintenance for valves used on fire protection systems is described under the appropriate guide for the specific item of fire protection equipment.

Checkpoints:

1. Exercise valve from one limit to the other (fully open to fully closed) to test freedom of motion. Lubricate stem and moving parts with graphite.
2. Determine if valve seats and holds properly.
3. Check packing gland, adjust, and lubricate. Repack as required.
4. For valves equipped with wheel and chain for remote operation, check for freedom of motion.

GUIDE NUMBER P-15

VALVES, MOTOR OPERATED

Frequency: Annual

Checkpoints:

1. Clean unit and make visual examination of all parts.
2. Operate from limit to limit. Observe operation; look for binding, sluggishness, action of limits, etc.
3. Determine if valve seats and holds properly.
4. Apply graphite to moving parts of valve.
5. Lubricate motor and gear box as necessary.
6. Inspect contacts, brushes, motor, controls, switches, etc. Clean and adjust as necessary.

GUIDE NUMBER P-16

BACKFLOW PREVENTERS

Frequency: Annual

Equipment Required For Test
Differential Pressure Gauge Test Kit

Purpose of Test
To test the operation of the Differential Pressure Relief Valve and the Check Valves.

Test Differential Relief Valve
The Differential Relief Valve must operate to keep the zone between the two Check Valves at least 2 psi less than the supply pressure.

1. Bleed all air from Check Valves.
2. Close Valve B on the discharge side of the Backflow Preventer.
3. Connect the "high" side of the Differential Pressure Gauge to Test Cock #2 and the "low" side to Test Cock #3.
4. Open Test Cocks #2 and #3.
5. Slowly open the Bypass Valve #1 until the Differential Gauge Needle starts to drop. Hold the bypass in this position and observe the reading on the gauge at the moment the first discharge is noted from Relief Valve. The differential pressure at the time the Relief Valve opens must be at least 2 psi.
6. Close all Gauge Valves.

Test Check Valve 1
The Check Valve must be at least 3 psi more than Relief Valve opening pressure.

2. Shut down and drain pump housing; note if suction and discharge valves are holding.
3. Remove gland.
4. Examine shaft sleeve for wear; replace as necessary.
5. Adjust gland evenly, finger tight.
6. On pumps with oil ring lubrication, drain oil, flush, then fill to proper oil level with new oil.
7. Perform lubrication in accordance with manufacturer's instructions.
8. Clean strainers.
9. Put pump into operation. Stop and start pump, noting undue vibration noise, pressure, and action of check valve.
10. If test is satisfactory, start pump again, and adjust to slight leakage through gland.
11. When pump reaches normal operating temperatures, check alignment between pump and drive.

GUIDE NUMBER P-19

RADIATORS, HEATING

Frequency: Once Every 5 Years (Prior to heating season).

Checkpoints:

1. Remove and inspect seat of trap. Clean out trap.
2. Replace thermal element with new or tested unit.

   NOTE: Replace defective seats in traps fitted with removable type.

3. Check radiator valve for free turning and seating at same time. Check packing.
4. If radiator has automatic temperature regulating valve, remove valve cover and remove dirt by vacuuming.
5. For hot water radiators, check bleed valve.
6. Check for sediment - clean if necessary.

GUIDE NUMBER P-20

ROOF, BUILT-UP

Frequency: Semiannual

Workhours per Frequency: Calculate annual workhours by using the standard times for building/components and checkpoints listed below.

Checkpoint	Item	Time
-	Review inspection materials	30 minutes per inspection
-	Assemble equipment and tools	10 minutes per inspection
1	Outside building walls	2 minutes per 100 lineal ft.
2	Inside ceilings and walls (top floor)	2 minutes per 1000 sq. ft. ceiling area (office) 1 minute per 1000 sq. ft. ceiling area (workroom)
3	Roof Perimeter	1 minute per 20 lineal ft.
4	Gutter	15 minutes per 100 lineal ft.
5	Expansion/ control joints	1 minute per 20 lineal ft.
6	Roof penetrations	.5 minutes each
7	Roof drains	.5 minutes each
8	Roof Mat	5 minutes per 1000 sq. ft.

Checkpoints:

1. Slip-type joint with packing gland

    a. Examine joint closely; look for evidence of displacement, loose, defective anchors or bolts, and alignment of joint with piping, guide rods, etc. Correct what can be done with pressure on. Report remaining items.
    b. Observe packing gland; adjust to stop weeping or leaks.
    c. Renew packing completely when system is down for other reasons such as repair, overhaul, or maintenance of other components.

2. Gun-packed type

    a. Perform work prescribed in (1a) and (1b) for slip-type joint with gland.
    b. Add packing if needed.

GUIDE NUMBER P-23

ALARM CHECK VALVES AND ACCESSORIES
(for wet pipe sprinkler systems)

Frequency: Annual

Special Instructions: The work required may cause the activation of an alarm and/or a supervisory signal. The field office manager and the control center or fire department that will receive the alarm and/or signal must be notified prior to start of work. If drains are not piped to outside of building, take necessary steps to prevent water damage during full flow drain test. Rate of discharge from two-inch drain may exceed capacity of floor drain. Preventive maintenance should be scheduled for the control valve (main supply) of the wet pipe sprinkler system at this time. (See Guide Number P-2). Review manufacturer's instructions.

Checkpoints:

1. Close main supply valve for the sprinkler system, then open 2" drain valve.
2. Immediately close drain valve when water pressure on incoming side of alarm check valve has dropped to 10 to 20 psi. If pressure rises within 1 minute, main supply valve is not seating properly. In such case, open drain valve and alternately open and close supply valve several times in an attempt to flush the valve seat. If not successful, supply valve needs to be repaired.
3. With both 2" drain valve and supply valve open, check operation of alarm check valve, water motor gong and its drain, and all other alarm or supervisory signals such as waterflow paddle alarms, pressure switches, etc.
4. When applicable, check if booster, jockey, and fire pumps equipped with automatic start are operating.
5. Perform any other steps required in manufacturer's instructions.
6. Check for proper waterflow through 2" drain. If waterflow is weak (considerable drop in water pressure when 2" drain is wide open), supply valves may not be fully open or there may be other piping obstructions.
7. Record the flow full drain residual pressure (lowest pressure on supply side gauge).
8. Close 2" drain.
9. Check that waterflow through water motor gong is stopped to ensure that clapper of alarm check valve is properly seated.
10. Record static pressure (pressure on supply side gauge).

Checkpoints:

1. Remove obstructions to easy accessibility of hose connection.
2. Inspect cutoff valves and check valves (usually located at base of standpipe riser) for corrosion or leakage. Exercise cutoff valve and repack if necessary.
3. Remove cap from hose connection and check threads.
4. Crack valve until water weeps through valve. Then close valve and check for leaks.
5. Screw cap onto valve until it is hand-tight.

GUIDE NUMBER P-27

FIRE DEPARTMENT PUMPER CONNECTIONS
(Standpipe or Sprinkler)

Frequency: Annual

Special Instructions: Never stand directly in front of connection when removing cap.

Checkpoints:

1. Remove any obstructions to easy accessibility.
2. Inspect for collision damage and missing parts.
3. Remove caps; check for internal obstruction and signs of leaking check valve.
4. Inspect swing check for free movement (Siamese type).
5. Inspect threads.
6. Replace missing parts and screw caps on hand-tight when applicable; install new frangible caps.
7. Inspect check valve for corrosion and leakage at joints.
8. Check ball drip for free movement.
9. Inspect drain for corrosion, blockage, and cross connection.

GUIDE NUMBER P-28

FIRE HYDRANTS
(Dry Barrel or Wet Barrel)

Frequency: Annual

Special Instructions: Dry barrel hydrants should be checked in the fall before the first frost.

Checkpoints:

1. Remove any obstructions which hinder accessibility.
2. Outlets must be at least 18" above ground or floor and the hydrant in plumb position.
3. Make sure that dry barrel type hydrants are used in unheated areas (indoor or outdoor) where freezing is encountered.
4. Check for leakage at hose outlet, etc.
5. Examine condition of gaskets, packing gland, and threads.
6. Examine barrel for cracks.
7. Remove outlet caps, check for ease of removal, and replace all but one 2 1/2" cap.
8. Dry barrel type - shut hydrant; check for drainage by back suction or by dropping weight on string into barrel to check for water.
9. Dry barrel type - if water is present, unplug drain valve. If water table is higher than drain hose, plug the hole.
10. Flush hydrant and check water flow. Flush until water is clear.
11. Cap hydrant; open hydrant 2 turns.
12. Check for leaks.
13. Dry barrel type - repeat items 8 and 9 above.
14. If drain is manually plugged, pump water out of barrel.
15. Lubricate all threads.
16. Check to see that nozzle caps are hand-tight.

Checkpoints:

1. Check for leaks.
2. Flush tank to remove scale and sediment.
3. Check thermostat and controls for proper setting.
4. Clean combustion chamber and fire-side heat transfer surfaces.
5. Set burner for efficient operation on oil fired units. Take flue gas CO_2 reading to determine proper burner adjustment.
6. Clean and lubricate circulating pump.
7. Operate try lever on pressure-temperature relief device (valve). Water should flow freely and stop when try lever is released. Replace valve if defective.

GUIDE NUMBER P-32

DRINKING WATER COOLERS

Frequency: Annual

Checkpoints:

1. Clean coils (using vacuum machine) and fan blades.
2. Inspect P-trap, water supply valves, connections, and bubbler valve for proper operation.
3. Check belt for tightness and wear (if applicable).
4. Lubricate motor (if applicable).
5. Inspect for and repair leaks in refrigerant lines.

GUIDE NUMBER P-33

FIRE PUMPS, ELECTRIC MOTOR DRIVE

Frequency: Annual

Special Instructions: Open and tag circuit serving motor. Review manufacturer's instructions. Give special attention to notifying all required officials that the fire pump will be out of service. Notice shall include estimated period of downtime and other special problems which may develop. If these work procedures may cause activation of an alarm and/or supervisory signal, the control center or fire department must be notified prior to start of work.

Checkpoints:

1. Clean motor with clean rag or vacuum. Clean inaccessible areas with clean dry air of not more than 30 psig.
2. Visually inspect windings for cleanliness. Check for coating of oil or grease without disassembling motor.
3. Perform lubrication according to manufacturer's recommendations.
4. Inspect for moisture and protection from water.
5. If motor has not been operated for an extended period, check insulation resistance with a megger.
6. Check motor mountings, supports, and couplings for tightness or other defects.
7. Remove tags and operate pump long enough to observe general operation. Note pressures, sound, vibration, odor, or temperatures.
8. If pump has automatic starting equipment, start it by activating the mechanism so the automatic devices are tested at the same time as the pump.
9. Secure pump and leave in ready-to-run condition.
10. Notify proper officials that unit is back in service.
11. Clean up area and return tools to proper storage.
12. Initiate work orders that may be required for repairs or correction of observed defects.

APPENDIX 13-C

EQUIPMENT OPERATION GUIDES

1. GENERAL

Criteria provided in this section will serve as standards for building equipment operation and are to be used as guidelines for local operating requirements, checklist development, and staffing needs.

These criteria are not intended to require the establishment of, or the continuance of, a route when the need for such does not exist.

The standard frequencies and time allowances cited herein or on Form 4894 are based on the operational activities and criteria in this section. Any exception to the criteria provided herein that is made to meet local conditions must be justified, documented on Form 4896, and approved by the Field Division General Manager/Postmaster as outlined in 13-203 and 13-501.21.

2. EQUIPMENT OPERATING PERIODS

The number of days and hours that equipment operates should be based on the following:

a. HOURS OF OPERATION

In postal workrooms or other space which is occupied beyond normal hours, heating and cooling shall be provided only in those areas occupied. Package-type air-conditioning and heating units shall be installed where they will result in operating cost savings. Automatic controls shall be installed on heating and air-conditioning units and systems to assure minimum operating hours and reduce work load requirements. Generally, the heating and air-conditioning for office areas shall be turned off approximately 30 minutes after the building occupants leave and turned on in time for the building to be at the prescribed temperature when the occupants arrive. A written procedure shall be prepared for each building specifying the hours of operation for the heating and air-conditioning equipment in accordance with the outside temperature conditions and the ability of the equipment to bring the interior space within the accepted range for occupancy. A copy of the procedure shall be submitted with Forms 4894 and 4895. During weekends and holidays, particular attention shall be given to ensure that the equipment is shut down to the maximum extent possible in accordance with HBK MS-49. Unoccupied space shall have override controls to prevent the temperature from falling below 55°F. When an exception to the above operating hours is contemplated, it shall be justified by a detailed and documented professional engineering study.

b. DAYS OF OPERATION

Where the days of operation for equipment are based on seasonal use, e.g. HVAC, the average number of operating days must be determined locally. Such information may be obtained from automatic recording devices or equipment logs, if available, or from computing the number of degree days per year when such equipment would be needed.

For other building equipment, systems, or areas not requiring full-time operation, use the following guides:

(1) Buildings or areas occupied occasionally on weekends are to be considered operational 5 1/2 days per week, or 286 days a year.

b. CENTRAL HIGH PRESSURE BOILER PLANT OPERATION

USPS shutdown procedures will be followed. Continuous attendance of central boiler plants is not authorized. The amount of time needed for the boiler plant operating route will be based on the actual number of boilers in operation, not on the total number of units installed, and on the functions described below. Operating functions required on other heating system equipment remote from the central plant area will be performed on separate routes as needed. Low pressure steam (below 15 psig) and hot water heating boiler operating criteria and allowances are covered in paragraph labeled 3f of this appendix. Hand-fired or stoker-fired boiler operations will be estimated on a local basis and reviewed by the divisional office. Calculate the time required for plant operation and enter on Form 4895 as outlined below and in part 13-502.12.

Workhours Per Day

(1) Startup and Secure (Col. 30)

One-half hour will be allowed to start and put the boiler plant into operation, make a thorough inspection of the equipment within the plant area, and complete the operating log. One-half hour will be allowed to shut down boiler equipment in the plant area. Where boilers are required to be in operation 24 hours per day, the startup and shutdown allowances, except for the initial starting and final shutdown, will be eliminated from the workhour requirements.

(2) Operating Checks (Col. 31)

An operational check must be made of all boilers in operation, four times per shift, not to exceed 15 minutes per inspection. For shifting of equipment, i.e., placing additional equipment in service, 15 minutes per shift is allowed.

An allowance for checking out the central control board will be in accordance with paragraph 3c of this appendix.

(3) Water Treatment (Col. 32)

Water treatment includes feeding and testing activities (see HBK MS-24). The frequency and time required for this work must be determined locally. Also, time for receiving oil deliveries, adjusting of burners, and changing of oil burner tips should be included here.

c. CENTRAL CONTROL PANEL (Including General Monitoring System)

The purpose of the panel is to simplify operations by providing necessary information to the operator as to what equipment is operating, and if the system(s) are being maintained within their prescribed predetermined conditions.

Workhour allowances to complete operational checks of the central control panel are based upon the refrigeration tonnage installed. The time allowance is as follows:

Tonnage Installed	Workhour Allowance
300 to 500 tons	7 minutes (0.12 hr.)
500 to 1000 tons	10 minutes (0.17 hr.)
1000 to 4000 tons	15 minutes (0.25 hr.)
over 4000 tons	20 minutes (0.33 hr.)

A complete operational check of the central control panel shall be made four times per 8-hour shift. These operational checks are made during the

k. LINE 15: STEAM CONDENSATE RETURN SYSTEMS
(Gravity or Vacuum)

In cases where a duplex unit is used, it is to be counted as one system.

l. LINE 16: CENTRAL DRINKING WATER SYSTEMS

A central drinking water system (all types and capacities) may be a single refrigeration machine or two units serving the same purpose. In either case, it is one system.

m. LINE 17: COOLING TOWERS
(Up to 500 Tons)

See line 4.

n. LINE 18: HOT WATER SYSTEMS

Hot water systems are for domestic water supply. They usually contain a steam regulating valve, converter, pumps, traps, and accessories. Small domestic type hot water heaters are not to be included.

o. LINE 19: HYDRO-PNEUMATIC SYSTEMS
(Including Fire Protection Systems)

Hydro-pneumatic systems (water supply or fire protection systems) may include pumps, pneumatic tanks, air compressors, valves, etc. Air compressors included under this line are not to be entered on line 14. A separate allowance for fire pumps is given on line 38.

p. LINE 20: PUMPS
(Other)

Pumps listed here should not be those which are located in the central chill water plant or central boiler plant area(s). Do not list here any pumps which are part of other systems listed on this form. Time allowances for inspection of pumps associated with centrally located plants and other listed systems are included in other lines. Do not include fractional horsepower circulating pumps at air handlers, air washers, hot water, or domestic water systems. This line may include oil transfer pumps, chilled water booster pumps, or others not covered in other lines.

q. LINE 21: PRESSURE REDUCING AND REGULATING STATIONS - STEAM AND WATER

This line covers pressure reducing valve (PRV) stations that have at least two stages reduction or serve a portion of a building.

r. LINE 22: SECONDARY WATER SYSTEM
(Heating and Cooling)

A secondary water system for heating should include a steam or high temperature water system as a primary source of heat serving a control valve, converter, pumps, traps, and accessories. This line would not include secondary chilled water systems, air washers, or humidifier systems.

s. LINE 23: SEWAGE EJECTOR

Duplex sewage ejector units are to be listed as one system. The system generally consists of closed tank ejectors in which the sewage is lifted by directed air pressure or steam on the surface of the liquids. Sewage or lift pumps should be included under line 36.

t. LINES 24 THROUGH 27: RESERVED

u. LINE 32: PACKAGE UNITS - COMFORT COOLING

Equipment entered on this line refers to package units used for comfort cooling of building occupants. Small air handling units, especially of the ceiling-mounted type, should also be

4. SUGGESTED OPERATOR DUTIES

The suggested operator duties in this appendix, supplemented by the equipment manufacturer's operational instructions and local knowledge or history of operational needs, shall be used in preparing local checklists for operation of building equipment.

USPS depends on the operating personnel and their supervisors to keep the building manager informed of any unusual condition observed, and the need for repairs and correction of faults whether it is within their category of work or outside of it. If the need for repairs or replacements is considered important or of an emergency nature, the building manager or the supervisor should be verbally notified immediately.

a. AIR COMPRESSORS

Observe operation for one cycle. Note the pressure and functioning of controls, safety and protection devices, and relief and unloader valves. Check air inlet and cleaner. Clean, if required. Check discharge lines, storage tank, etc. Drain water from tank and lines. Look for signs of misalignment or unusual belt wear. Check belt tension. Note pulleys, belts, guards, etc. Check over motor and controls. Be alert to any unusual sound, vibration, odor, temperature, or condition.

b. AIR-CONDITIONING MACHINES - CENTRAL SYSTEM

(1) Compressor Room

(a) Before starting the compressor, check source of energy supply (prime mover). Check indicator lamps and replace any which have burned out. Note pressure-temperature relationship. Start purge recovery unit. If system uses low-pressure refrigerants, check oil and refrigerant levels. Check to see that chilled water and condenser water valves are open. Start auxiliary oil pumps. Check the water supply to oil cooler. Check the hot-gas bypass valve. Check the capacity control dampers or vanes. Start the condenser water pumps, operate the cooling tower fan as recommended by manufacturer, and check water pressures. Place the compressor in service. If capacity controller is manually operated, open slowly.

(b) When running, make routine inspections of pressures, temperatures, fluid levels, fluid flow, etc. Check for water leaks from pump packing, valve stems, etc. Take readings and record on log sheets. Occasionally, note superheat of suction gas. If refrigerant leaks are suspected, check with leak detector. Add refrigerant and oil as needed. Check scale traps. Occasionally remove covers from pressure switches and other controls, and check for loose screws, springs, contacts, etc. Treat chilled water and condensing water as prescribed. Be alert to any unusual sound, vibration, knocking, odor, temperature, etc.

(2) Condensing Water Circuit

Check circulation of water and temperatures. Note the amount of make-up water that is being used. Observe operation of float valve and mechanism. Leaks, even small ones, should be noted and reported to the supervisor. If required, take water samples and treat the water as prescribed in HBK MS-24. Inspect sumps, tanks, collection pans, etc., for cleanliness, slime formation, or algae growth. Check spray heads and remove obstructions. Evaporative condensers should be checked for unobstructed

at the minimum rate that will keep battery charged. Clean tops of batteries and corroded terminals as necessary. Observe support for deterioration.

e. BOILERS, HEATING

Complete boiler log (PS Form 4846 or 4846A) for each boiler, performing checks, inspections, and test indicated on the log form.

f. RESERVED

g. ELEVATORS

Establishment of elevator equipment/machine room operating checklists and routes is applicable only to locations in which USPS personnel are assigned to the servicing and maintenance of elevators. Such routes are not to be established where the maintenance is performed by contract except to periodically visit the areas and observe the equipment in operation. The building manager or maintenance contractor should be notified if unusual or unsafe conditions are observed. Inspection of elevator maintenance work performed by contract is to be made by the building manager or a supervisor familiar with the contract's maintenance requirements.

(1) Inspection

Make a general inspection of all items in the machine room. Use the senses of sight, hearing, touch, and smell in observing the functioning of the equipment. Include in the general inspection of the machine room such items as:

(a) Motor-Generator Unit. Look for arcing, feel the bearings for temperature and for machine vibrations, and listen to it briefly. Note oil level or need for lubrication.

(b) Hoist Machine, Motor and Brake Unit. Observe operation, feel for temperature or vibration, and note lubrication condition. Observe brake action. Note amount of slide, freedom in clevis pins, leverage, etc. Note condition of lining. Inspect electrical connections, solenoid and dashpot (if applicable).

(c) Control Panels and Devices. Inspect all equipment, paying particular attention to contactors, connectors, reverse phase relays, switch pins, timers, etc. Look for arcing, poor contacts, excessive temperature, sluggish action, chattering, unusual or hard slamming, or other deficiencies. Examine and clean the tape and chain selector drives when necessary. Note presence of or need for lubrication.

(d) Governor. Observe action of the governor. Look for freedom of action of moving parts and cable. Observe electrical connections and note the presence of or need for lubrication.

(2) Operation

It is not necessary for a USPS mechanic to ride each elevator for the sole purpose of observing the operation. During the course of a day's activities the elevators are ridden several times by various USPS employees who should observe and report any faults in the operation. If all employees are properly instructed in this regard, it will result in quicker correction of faulty elevator operations. However, if the preventive maintenance standards are properly followed,

Be alert to any unusual noise, vibration, odor, temperature, etc.

m. PUMPS, GENERAL PURPOSE

Make a general inspection; be alert to any unusual noise, vibration, odor, temperature, etc. Feel the bearings and check packing gland. For pumps operating on automatic, observe at least one cycle to see that controls are functioning and that all components work properly. Observe piping, valves, etc. Report any observed leaks to supervisor. Particular attention should be given to the following pumps:

Condensate return to boiler or central plant
Chilled water
Condenser water
Booster pumps from city line to house tanks
Circulating, hot water, drinking water, and similar applications.

n. STEAM PRESSURE REDUCING STATION

Observe the operation, noting pressures and the functioning of external pilots (the operation of internal pilots cannot be observed). Check the operation of traps on both the high and the reduced pressure lines, and observe the condition of the insulation. Make general inspection of the station, noting anything of an unusual nature. Relief valves are tested periodically on a scheduled basis, so unless they are malfunctioning, no action other than visual observation is needed.

o. SUMP PUMPS

Observe the operation noting the functioning of float mechanism or other controls as well as the pumping action. Check the strainer and inspect pit for silt, mud, obstructions, etc. Does the check valve hold and seat properly? Look for vibration or malfunctioning in the pump unit or the connected piping.

p. CUBICLE ROOMS, TRANSFORMER VAULTS, AND SWITCHBOARD ROOMS

Check each area for ventilation, lighting, and general condition of equipment. Observe the watt-hour and demand meters. Observe all indicating lights and replace burned-out ones. Observe relays for proper functioning and target position. Check oil circuit breakers and transformers for proper oil levels. Check the network protectors for proper operation and record the counter reading where applicable. Check the emergency lights for proper operation and any other instruments as directed. Report any malfunctioning or needed repairs to the supervisor.

q. FIRE EXTINGUISHERS

All fire extinguishers shall be inspected monthly on an operating route. This inspection is a "quick check" that an extinguisher is available and will operate. It is intended to give reasonable assurance that the extinguisher is fully charged and operable. If any deficiencies are revealed, the deficiency must be corrected or the extinguisher replaced as soon as possible. Ensure that access to, or visibility of, the extinguisher is not obstructed. Verify that the operating instructions on the extinguisher nameplate are legible and face outward. Ensure that seals or tamper indicators are not broken or missing. Inspect for obvious physical damage, corrosion, leakage, clogged nozzle, or cut hose. Ensure that the pressure gauge indicates that the pressure is within the operable range. For extinguishers without gauges, and with unbroken seals or tamper indicators, determine their fullness by lifting and comparing estimated weight to weight stamped on shell. Verify that it is the correct extinguisher for that location by comparing the location markings on the shell and mounting. Complete the

SECTION 14

INSPECTIONS AND EVALUATIONS

14-1 GENERAL

14-101 BACKGROUND

An effective management program requires evaluation of building operations on a systematic basis. Such a review aids in evaluating program performance and in achieving greater coordination among the various field activities. It also ensures that USPS policies and procedures are carried out in a uniform manner nationwide.

14-102 POLICY

It is the policy of the USPS to ensure that a uniform level of adequate service is provided in all USPS-operated buildings, and to ensure that all leased space is maintained and operated in accordance with the leases.

14-103 OBJECTIVES

The objectives of the inspection and evaluation of USPS building operations are:

a. Uniformity - To provide for uniform and adequate inspections on a planned basis.

b. Compliance with Directives - To determine if programs and administrative operations are being carried out in accordance with directives.

c. Corrective Action - To make possible the initiation of corrective action at the level where problems have been encountered.

d. Evaluation - To evaluate the performance of individual field personnel.

e. Training - To provide a basis for determining training needs.

f. Assistance to Supervisors - To assist supervisory personnel in effectively maintaining clean, comfortable, and safe buildings and surroundings.

14-104 BUILDING MANAGER'S INSPECTION FUNCTION

14-104.1 The building manager is the line supervisor of the building and is, therefore, directly involved in inspection of USPS facilities more than anyone else. Basically, there are two sources of inspection requirements.

14-104.2 Internal sources or inspection requirements stemming directly from the building manager's function:

a. Inspection and Evaluation of Building Management Field Operations - The building manager is responsible for those things which make up the day-to-day operation of the building and any associated stations and branches.

b. Cleaning Inspection - The building manager is responsible for the cleanliness of buildings. Inspections shall be made to ensure an adequate level of cleanliness.

c. Concessions Inspection - Although special health inspections are required, the building manager corrects all building deficiencies involved in concessions space and periodically checks for obvious health and contract violations as specified in Section 15.

14-2 DIVISIONAL INSPECTIONS AND EVALUATION

14-201 GENERAL

On-site review and evaluation of building management program operations will be conducted at field locations by divisional office representatives. The division will schedule inspections at sufficient frequency to assure that operation and maintenance standards are being maintained.

14-202 ORGANIZATION

14-202.1 Inspection Personnel

The on-site inspection of field operations will be conducted by representatives of the divisional office or their designee. Members may also be selected from other entities where appropriate.

14-202.2 Basis for Selection

Inspection personnel shall be selected on the basis of broad knowledge of major program areas.

14-203 SCHEDULING OF INSPECTIONS

Divisional Office - At the beginning of each year, the divisional office shall plan and prepare schedules of inspections for the fiscal year. They should notify affected offices of scheduled inspections.

14-204 ADVANCE PREPARATION

14-204.1 Confirmation of Schedule

At least 2 weeks in advance of the scheduled inspection, the postmaster of the affected office shall be given confirmation of the schedule, including names of persons doing the inspection.

14-204.2 Field Officers Cooperation

The postmasters shall be responsible for ensuring that the appropriate building managers are on duty during the inspection period.

14-204.3 Operating Personnel Cooperation

The building managers shall have supervisory operating personnel prepare a list of specific problems or subjects for discussion with the team.

14-205 CONDUCTING ON-SITE INSPECTIONS

14-205.1 Divisional Office

14-205.1.1 Upon arrival at the site to be inspected, the inspection personnel shall conduct a detailed review of operations following the general plan set forth in the checklists which are attached as appendixes. A general discussion will be held with the postmaster. Later discussions shall be on an individual basis with the building manager or supervisory personnel as may be required.

14-205.1.2 During the inspection, actual practices shall be compared with established procedures. Deviations will be noted, discussed with operating personnel, and included in the report. The checklist, Form 4905, shall be used as a guide for the evaluation. This checklist may be expanded by the divisional offices to meet particular needs and program emphasis. Form 4905, Figure 14-1, shall be completed to rate the operation and summarize the results of the evaluation.

14-205.1.3 Adequate time shall be provided field personnel to discuss their problem areas. Particular attention shall be given to areas where

14-3 INSPECTION OF USPS FACILITIES BY LOCAL GOVERNMENTS

14-301 APPLICATION

As previously stated, the USPS is not required to obtain local licenses or comply with local codes except as specified in Section 2-6, or in other USPS directives.

a. Sovereign immunity shall not be relinquished.

b. Local government representatives have specialized qualifications needed to conduct inspections of equipment such as pressure vessels, elevators, and food preparation facilities.

c. Conditions beyond those required by USPS publications are not imposed as a result of the inspections.

d. In leased facilities, access shall be allowed to insurance inspectors when the visit has been prearranged by the lessor.

14-302 PROCEDURES

The procedure for scheduling and approving the inspections specified in the section of this handbook, dealing with the item of equipment to be inspected, shall be followed.

15-3 FOOD SERVICE

15-301 GENERAL

Instructions on selection of the appropriate type of food services are contained in HBK EL-602, which also identifies the responsibilities and functions of the USPS building manager related to food services in 15-302 through 15-305.

15-302 UTILITIES

The USPS building manager maintains records of utilities consumed in the food preparation and serving activity. A monthly report of utilities consumed is made to the contracting officer for use in determining utility charges to the concessionaires.

15-303 OPERATION

The building manager maintains surveillance of the day-to-day operations of food service activities in cooperation with the food service officer.

15-304 INSPECTIONS

The building manager is responsible for seeing that the periodic sanitation inspections of food service operations are made and participates in them. When the correction of deficiencies is the responsibility of the Postal Service, the building manager initiates action for their correction. The food service officer follows up to assure correction by the concessionaires.

15-305 TRASH REMOVAL

The concessionaire is responsible for removing trash generated by the operation from the building, except for blind-operated concessions, where USPS provides for trash removal.

15-4 OTHER CONCESSIONS

15-401 EMPLOYEE EQUIPMENT

Section 3-504 provides for the building manager's approval and control of the use of employee-owned electrical equipment.

15-402 LICENSE

Other concessions operations, not operated by the blind and not required to be conducted under contract, must be authorized by Form 4906, Revocable License for Nonpostal Use of Real Property (Figure 15-1), modified as necessary to suit the prevailing conditions. One example may be the authorization of newspaper and magazine vending at the entrances to Postal Service buildings, when permissible under the other provisions of this handbook.

15-5 INSTALLATION OF PUBLIC TELEPHONE PAY STATIONS

15-501 POLICY

In each building under its jurisdiction, the Postal Service encourages the installation of enough telephone pay stations to serve visitors in the building and permit employees to make personal telephone calls, thus obviating the necessity for them to use official telephones.

15-502 AUTHORIZATIONS

See ASM 362.8 for instructions on authorization and collecting commission.

15-503 PAY OUTLET

15-503.1 Public Use

Pay-station outlets must be provided in public lobbies, in corridors near courtrooms, and in similar locations where public convenience requires telephone facilities.

SECTION 16

PROTECTION

16-1 GENERAL

16-101 SCOPE

The building protection program is concerned with accident prevention, fire prevention, physical protection, and those civil defense activities relating to protection of personnel and facilities.

16-102 RESPONSIBILITY

16-102.1 Supervisory

Building managers and supervisors are directly responsible for the prevention of accidents to USPS employees under their supervision, and to occupants or visitors on the premises, as well as for the prevention of damage by fire or other accidents to Postal property. In carrying out this responsibility, each supervisor is expected to participate in all phases of accident, fire prevention, and civil defense programs. The line supervisor is the most important link in the chain of organization necessary to the success of these protection programs. Supervisors must know all employees, train them thoroughly to do their jobs correctly and keep them alert on the job.

16-102.2 Safety Program

The Safety Program identified in ELM Chapter 8 is an integral part of the building manager protection program. Supervisor's Safety Handbook, HBK EL-801, identifies supervisor responsibility, reporting requirements, and safe work practices.

16-102.3 Personal

The protection of mail, postal funds, and property is a responsibility of every postal employee. All supervisors are encouraged to instill this sense of responsibility in each employee.

16-103 OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA)

The safety requirements of OSHA must be followed in building operations, and the appropriate Postal Service Safety and Health Inspection Checklist, MMO-86-85, must be used by the building manager in safety inspections.

16-2 CONDUCT ON POSTAL PROPERTY

16-201 AUTHORITY

Under authority of law, the Postal Service has adopted rules and regulations governing conduct on postal property (see POM 221.6). These rules and regulations apply to all real property under the charge and control of the Postal Service, to all tenant agencies, and to all persons entering or on such property.

16-202 POSTING

Poster 7 contains these rules and regulations and must be posted conspicuously at each public entrance, as required by POM 221.5.

16-203 ENFORCEMENT

The enforcement of these rules and regulations (POM 221.6) is essential to the protection of postal property. (See ASM 270.)

coordinated with the local fire department only in the following instances:

a. Where the local fire department approves of the installations and will use the hoses installed; or

b. In areas (such as postal workrooms) where personnel are specially trained and their fast action could bring the fire under control readily. Where hoses are installed on standpipes, the existing linen or cotton hose on them must be removed when deteriorated, and not replaced. Refer to HBK MS-56, Section 753 and OSHA 1910.158(c)(3) for additional information. In special cases where 1-1/2 inch hose is needed, the hose must be polyester fiber, single-jacketed, rubber-lined firehose available through Federal Supply Schedule, Class 4210. Maintenance guides for standpipes and hoses are included in Section 13.

16-403 SPRINKLER SYSTEMS

See HBK MS-56 for additional information on sprinkler systems. The four basic types of sprinkler systems are:

a. The Wet-Pipe Sprinkler System. The wet-pipe sprinkler system is the simplest and most effective for the general control of usual fires. The system is connected to an adequate water supply and the piping is filled with water. A waterflow device or an alarm valve is incorporated in the system to sound waterflow and fire alarms.

b. Standard Dry-Pipe System. The standard dry-pipe system is a modified form of the wet-pipe system, with a dry-pipe valve replacing the waterflow device or alarm valve, and air pressure substituted for water in the piping. The air pressure keeps the dry-pipe valve in the closed position and prevents water from flowing into the piping where it might freeze. When a sprinkler head opens, the air pressure is released and permits the dry-pipe valve to operate, which in turn allows the water to flow to the sprinkler heads.

c. Deluge Sprinkler Systems. A deluge sprinkler system is a special type of automatic dry-pipe system, having open or unsealed heads installed in the piping arrangement and equipped with automatic and auxiliary manual controls. This type of system is installed only in occupancies where flash fires are likely to occur.

d. Preaction Systems. Preaction systems are designed and installed similarly to deluge systems, except that standard sealed type heads are used. Heat-actuated controls operate riser valves to permit water to be available at the sprinkler head before there is enough heat at the head to cause it to fuse.

16-5 FIRE DEPARTMENT NOTIFICATION

16-501 GENERAL

The building manager must instruct employees that it is their responsibility to operate the fire alarm box and call the fire department upon detecting a fire. In no case may employees be directed or otherwise encouraged to withhold the sounding of an alarm or delay the alarm until they check with a supervisor.

16-502 IN CASE OF FIRE

In any case of fire, notify the fire department immediately. It is established USPS practice to connect the building fire alarm system directly to the fire department or to a commercial or Government-operated control center which will automatically relay the fire

16-8 FIRE BRIGADES

The size, duties, membership, and training of fire brigades is covered in ELM 854.1. All postal fire brigades must be trained to perform their assigned duties. The fire brigade training course number 21503-00 must be given to all fire brigade members. See ELM 854.15.

16-9 FIRE SAFETY REGULATIONS

All postal occupants and tenants must comply with the fire safety regulations in Figure 3-2.

17-203 BUILDING MANAGER'S RESPONSIBILITIES

The building manager shall provide direction and assistance to the Postmaster in development of plans for protection of the facility and its occupants. The building manager must organize, equip, and train a damage-control team as outlined in 17-3 and carry out the facility plan of emergency operations as outlined in 17-4. The damage-control team is set up to respond quickly and efficiently to any emergency at the facility that affects the building, equipment, or occupants, in order to control and confine damage and prevent injury.

17-204 NOTIFYING OCCUPANTS OF EMERGENCY CONDITIONS

All emergencies requiring the notification of the occupants are to be routed through the building manager to the Postmaster or installation head. Occupants that may be affected by an emergency condition are to be notified immediately, since an informed occupant is less likely to panic or spread rumors. Notification may be either by normal communication methods, e.g., telephone or personal contact, or by the building general alarm system.

17-3 DAMAGE-CONTROL ORGANIZATION

17-301 DAMAGE-CONTROL LEADER

Damage-control leaders are assigned from the building management supervisory rolls. Their duties are:

a. To staff and train a Damage-Control Unit and select alternates for this unit.

b. To establish a plan to attend mechanical devices, ventilation, water, gas, and steam valves, power switches, etc.

c. To deploy either individuals or teams at the sound of emergency alarms.

d. To prearrange control posts for planned or directed action.

e. To deploy personnel to investigate and correct damage to utilities after emergencies.

f. To report conditions which require other assistance.

17-302 ORGANIZATION OF THE DAMAGE-CONTROL TEAM

A damage-control team must be established for each shift and tailored to the particular building or group of buildings in which it serves. The example given here is for a building of over 400,000 square feet:

Damage-Control Leader - Operating Engineer Supervisor
2 Plumbers or General Mechanics
1 Carpenter or General Mechanic
2 Operating Engineers or Enginemen
2 Electricians (one high-voltage specialist, if available)

17-303 ROTATION OF TEAM MEMBERS

The formal assignment to the damage-control team will rotate on a yearly basis in order to train all operating personnel. In addition, all personnel should be trained in the operation of a primary and secondary assigned utility.

17-4 PLAN OF EMERGENCY OPERATIONS

17-401 IDENTIFYING CUTOFF VALVES AND SWITCHES

17-401.1 Signs giving the location of cutoff valves and switches must be conspicuously posted in the security office in all buildings having such

i. Portable emergency light.

j. A diagram showing utility cutoffs and location of emergency equipment in the building.

k. Adequate number and type of portable fire extinguishing equipment for auxiliary use.

17-403.3 All operating personnel must know the telephone number of the control center in order to report emergencies quickly.

17-404 GENERAL INSTRUCTIONS TO THE DAMAGE-CONTROL TEAM

Because of the importance of these utilities in a large-scale emergency such as fire or air attack, the instructions in Figure 17-1 are necessary.

17-405 DAMAGE-CONTROL PLAN

17-405.1 The damage-control team is activated in an emergency by the communications medium available (public address system, building fire or emergency broadcast alarm, telephone, or shortwave radio).

17-405.2 The team members report to their designated control posts.

17-405.3 The damage-control leader reports to the control center, receives reports on the emergency, and coordinates the necessary action to cope with the emergency.

17-405.4 When the emergency is past, the damage-control leader surveys the situation, further deploys personnel or releases the team for normal duty, and submits reports to the building manager.

17-405.5 When the building is evacuated, all operation and maintenance personnel will report to a location assigned by the building manager. They will remain in this location in case they are needed to cope with the emergency, and may return to their normal location only upon direction from the building manager's representative.

17-406 RESPONSE DURING NONDUTY HOURS

When emergency occurs during nonduty hours and involves building structure or equipment which requires the technical assistance of the damage-control team, security or other personnel discovering the emergency must follow locally prescribed procedures to bring the damage-control team to the site of the emergency.

17-5 CORRECTIVE MEASURES

17-501 INVESTIGATION AND FOLLOWUP

17-501.1 The damage-control leader must report all damage to the building manager. It is the responsibility of the building manager to completely investigate each accident or emergency. If necessary, technical assistance may be requested from the division. Where appropriate, the investigator coordinates with the Inspection Service, reporting all damage and the circumstances surrounding the emergency. A detailed report must be submitted as prescribed in HBK EL-801. A particularly good source of data for the investigation of accidents involving utilities or equipment is the automatic recording charts found on most modern equipment. An analysis of the charts may reveal the causes of damage and lead to possible modifications of equipment.

17-501.2 The building manager has the authority to utilize contract or group sources to make emergency repairs necessary to the normal operation of the building as expeditiously as possible.