Instruction Sheet

MS-1

Operation and Maintenance of Real Property
TL-4, November 30, 1986

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MS - _____

1. The MS Handbook contains the information required to perform maintenance on the equipment.

Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
☐	☐	☐	☐	☐

Comments: _____

_____

_____

2. The drawings in the MS Handbook accurately represent the equipment.

Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
☐	☐	☐	☐	☐

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_____

_____

3. The MS Handbook meets the required needs of the Maintenance Technician.

Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
☐	☐	☐	☐	☐

Comments: _____

_____

_____

4. The MS Parts Information meets the required needs of the Maintenance Technician.

Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
☐	☐	☐	☐	☐

Comments: _____

_____

_____

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_____

_____

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REVISION 1 02/14/00

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Operation and Maintenance Handbook MS-1 — Transmittal Letter 4
Operation and Maintenance of Real Property — November 30, 1986

A. EXPLANATION

This is a complete revision of Handbook MS-1, Operation and Maintenance of Real Property.

B. DISTRIBUTION

1. Initial. Copies of this complete issue are being distributed to Headquarters; Regional Postmasters General; Regional Chief Inspectors; Facilities Service Centers; Divisional Field Directors, Operations Support; Management Sectional Centers; Area Maintenance Offices; Maintenance Capable Offices; Bulk Mail Centers; MSC and BMC Safety Managers; Postal Employee Development Centers; Inspectors in Charge; Maintenance Overhaul and Technical Service Centers; Field Division General Manager/Postmaster; Divisional Manager, Safety and Health Services; and Regional Director, Human Resources.

2. Additional Copies. Order additional copies directly from your supply center on Form 7380, Supply Center Requisition.

C. RESCISSIONS

All copies of the previous issues of Handbook MS-1, Transmittal Letters 1, 2, and 3, are rescinded and should be discarded.

D. COMMENTS AND QUESTIONS

Recommendations for improving the guidelines, information, and procedures contained in this handbook are solicited from all sources. Anyone wishing to make such recommendations should submit them to:

Field Director
Maintenance Technical Support Center
P.O. Box 1600
Norman, OK 73070-6708

E. EFFECTIVE DATE

These instructions are effective upon receipt.

James C. Wilson

James C. Wilson
Director
Office of Maintenance Management
Engineering and Technical
Support Department

Operation and Maintenance of Real Property

Operation and Maintenance Handbook
MS-1

Publication: TL-4, 11-30-86

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List of Effective Pages

Page No.	Change No.

Record of Corrections and Entries

Correction or Change	Purpose of Correction or Change	Entered By	Date

REVISIONS

GENERAL

In addition to the specific changes listed below, where applicable all references to regions, districts, PSOs, BMEO, MSCs, etc. were changed to reflect the new organizational structure.

Reference paragraphs:

1-4
1-401
1-402
1-403
2-501
2-506
2-702
2-9
2-1003.c
3-103.b
3-613.2
5-201.3
5-6
6-302
7-301.3
7-302.5
7-402
8-105
8-303.c
9-103
9-213
9-607
9-608
9-A.4 (Appx)
10-503
10-602.2.a(2)
10-606
11-103
11-207
12-101.c
13-203
13-403.5
13-403.9
13-403.10
Fig. 13-3 (Form 4896)
13-501.21
13-503.3
13-505.2
13-508.1
Fig. 13-6 (Form 4893)
13-C.1 (Appx 13-C)
13-C.3.b (Appx 13-C)
14-104.3.c
14-2
14-201
14-202.1
14-203
14-205.1
14-205.1.2
14-205.1.4
14-205.2
14-206
14-207
14-208
14-209.1
14-209.2
Fig. 14.1 (Form 4905)
17-501.1
17-501.3

SECTION 1

INTRODUCTION

1-5 OPERATING ISSUANCES
(Update of references is as follows.)

Replaced (MS) 75-1 with HBK RE-10 as the Handbook designation for Short Form Specifications.

Added the following to the end of the listing:

Training Catalog

HBK RE-1, Realty Acquisition and Management
HBK RE-11, Maintenance of Post Office Buildings
Agreement between General Services Administration and United States Postal Service Covering Real and Personal Property Relationships and Associated Services
Management Instructions
Safety Inspection of Heating Boilers, Unfired Pressure Vessels, Elevators, Escalators and Dumbwaiters
AS-620-82-12
Safety Inspection of Heating Boilers, Unfired Pressure Vessels, Elevators, Escalators and Dumbwaiters in Owner-maintained Leased Buildings
AS-620-84-14
Building and Site Design Safety Requirements
AS-510-83-3
USPS Maintenance of Leased Facilities
AS-510-83-1

USPS Buildings Occupied by GSA/Federal Agencies - Reimbursable Work Authorizations
AS-510-82-10
Building Management Program
AS-510-81-14

Facility Fire Protection Criteria
RE&B DC-86-3
DTD 4/8/86
Friable Asbestos Containing Materials Control Program
Filing EL 810-85-5

SECTION 2

BUILDING MANAGEMENT FIELD OPERATIONS

2-1 Change Postal Service Manual to Administrative Support Manual.

2-302 (This change clearly identifies the documents that support the USPS and GSA agreement. Changed the paragraph to read as follows.)

This portion of the agreement applicable to nonpostal activities located in USPS buildings is covered in Section 3 of this handbook, Management Instructions AS-510-82-10 and AS-510-82-11, and Chapter 5 of Administrative Support Manual (ASM). Those USPS buildings that have nonpostal activities shall have a copy of each of the above-cited publications in their data files for ready reference.

2-402 **IN USPS-LEASED BUILDINGS**
(Replaced paragraph c to reflect a situation where USPS accepts responsibilities beyond those indicated in paragraph b.)

c. No Service: The USPS has assumed maintenance responsibility under the terms of the lease or in an amendment to the lease. This applies to repair and preventive maintenance and does not apply to Improvements and Alterations (AS-510-83-1).

2-504 **AREA MAINTENANCE OFFICE (AMO) AND MANAGEMENT SECTIONAL CENTER (MSC) RESPONSIBILITY**
(Deleted)

2-6 **LOCAL CODES AND ORDINANCES**
(Changed paragraph to show ASM reference as follows.)

It is USPS policy to comply with local codes and ordinances except where they are inconsistent with national codes or postal policy or where adherence would result in redundant or unnecessary expense. Administrative Support Manual, in paragraph 517.71, states the USPS intent to comply with the Executive Order 11507, Prevention and Abatement of Air and Water Pollution at Federal Facilities.

2-1002.1 (Add the following at the end of the paragraph as a reference.)

See Management Instruction AS-510-83-1.

SECTION 3

TENANT RELATIONS AND SPECIAL SERVICES

Figure 3-2: Eliminated reference to asbestos in 1.b(1).

3-504.3 Building Manager Inspection
(Modified 3-504.3.c(3) as follows to eliminate reference to asbestos.)

All appliances will be installed on a noncombustible base composed of, or covered by, sheet metal of a thickness of not less than 24 US gauge.

3-602 Included requirements for handicapped on elevator.

3-605 LOSSES, THEFTS, AND ARTICLES FOUND
(Replaced the word "guard" with "security.")

3-606.2 Reimbursable
(The following change should be made to relieve the local office of the responsibility of using workhours to assist tenants in moving.)

Removed the words "unless it can be done without disrupting or interfering with postal operations."

3-610.1 (Replaced the words "the guard" with "security.")

3-611 EMERGENCY PREPAREDNESS
(NEW name for paragraph. Changed contents of paragraph to read as follows.)

The requirements for contingency planning are found in ASM 280-285. Additional guidelines are in ELM 519.22, 852.3, and 852.4; and HBK MS-56, Fire Prevention and Control.

SECTION 5

GROUNDS AND APPROACHES

5-103 REPAIR RESPONSIBILITY
(Change reflects fact that USPS has responsibility for curbs and gutters in some locations.)

In most locations, USPS is not responsible for the repair or replacement of public improvements such as curbing, gutters, and streets adjacent to USPS-owned property. In these locations the expenditure of funds for this purpose is not authorized. When repair or replacement is required, the appropriate local government officials should be notified. In locations where USPS has these responsibilities, these areas shall be inspected at least once a year by the building manager or designee.

If deficiencies are identified and the cost of making repair or replacement is within the Postmaster's spending authority, the Postmaster should arrange for the repairs to be made locally. If the cost is beyond the Postmaster's spending authority, the Postmaster should request assistance from the next level of authority.

5-201.2 (Change corrects reference to Short Form Specifications as HBK RE-10.)

Method for establishing and maintaining such areas, whether performed by the local office or by 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.

5-202 ISOLATED LOCATIONS
(Added safety and health hazards to maintenance in isolated areas.)

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

5-204 EQUIPMENT
(Added safety devices and gasoline storage.)

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.

5-7 PARKING AREA LIGHTING
(NEW - added parking area lighting criteria.)

All parking areas shall be adequately lighted. The level of lighting shall be in accordance with the lighting guidelines established by USPS (See HBK MS-49).

SECTION 6

STRUCTURES

6-2 STRUCTURAL MAINTENANCE AND REPAIR
(Changed to include roofs and to include local maintenance inspection requirement. Also corrects Short Form Specifications reference as HBK RE-10.)

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 (This handbook is currently being revised by Facilities Department.), and is usually accomplished by contract. The building managers are responsible for having a building inspection conducted at least once a year. The maintenance manager must request repair and alteration surveys from the Facilities Service Center. 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 ideally should 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.

6-302 FLOOR LOADS

(Added OSHA floor-load-plate requirement reference. Added requirement for building manager to approve plans for concentrated storage.)

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 plans 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 district office. In some instances this information may be obtained from GSA for buildings it constructed or previously operated. Any plan for the placement of large concentrated loads (safes, large machines, stacks of paper, heavy files, mail handling equipment, nutting trucks, storage areas, etc.) shall be reviewed and approved by the building manager so that accidental floor overloading does not occur. Take advantage of the increased floor strength over a beam, close to a column, or near a load-bearing wall. If, in the layout of a space, heavy objects are involved and there is a question about floor loading, a structural engineer should be consulted before approving the arrangement.

6-303 ASH TRAYS AND SAND URNS

(Added "filled" to clarify reference to sand-filled urns.)

Wall-mounted ashtrays shall be provided in all elevator lobbies, entrance lobbies, and in the corridor immediately outside cafeterias, snack bars, courtrooms, and other similar high-usage areas. Units will have a closing cover that closes by spring or weighted hinge action. Units must be of stainless steel or of equally durable material in keeping with the interior decor of the building. Construction and finish must permit easy cleaning. All units will be mounted at a standard height of 40 inches from the floor to the top face of the tray. Sand-filled urns will not be purchased for use as ash receptacles and must be replaced with wall-mounted ash trays on a practical schedule.

6-306 HISTORIC PRESERVATION

(Changed title for clarification. Added ASM and RE references.)

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, and HBK RE-1, Section 4-303.

6-307 ARTWORK

(Replaced Regional Instruction reference with ASM and RE references.)

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

SECTION 7

CLEANING PROGRAM

7-2 SERVICES PERFORMED BY CONTRACT
(Changed last sentence as follows to indicate correct ASM and MI references.)

See Article XXXII of the current National Agreement as well as ASM 530-81-17 for additional information on contracting cleaning services.

7-303 CLEANING IN CONCESSION SPACE
(Changed paragraph to read as follows to clarify postal obligation for cleaning.)

The special cleaning requirements of concession space and responsibility are detailed in Chapter 5 of Handbook P-29, Food Service Operation and Employee Social and Recreational Fund.

7-304 USE OF WALK-OFF MATS
(Changed word "normal" in last sentence to "commercial" to more clearly define proper source of supply.)

7-305.1 General
(Added the following as a point of information.)

A list of approved custodial products and equipment which have been tested and may be purchased locally is published periodically in the postal bulletin.

7-402 MAINTENANCE
(In third from last line, corrected form number from 4756 to 4568.)

SECTION 8

ELEVATORS, ESCALATORS, AND DUMBWAITERS

8-105 ADHERENCE TO CODES
(Corrected code reference in fifth line by replacing ANSI with ASME/ANSI.)

8-204 ELEVATOR MACHINE ROOM TEMPERATURE
(Replaced acronym "ANSI" with "ASME/ANSI."

8-304.2 (Since the once-per-year inspection pertains only to dumbwaiters, change verbiage to read as follows):

Dumbwaiters must be inspected once every year.

8-304.3 (Replaced omitted sub-paragraph. Added the following sentence.)

Periodic tests must be performed concurrently with inspections in accordance with ASME/ANSI A17.1.

8-404.1 (Deleted "Lezviz" from line 14.)

APPENDIX 8-A (Editorial change)

2.a.(4) Replaced "should" with "must."
2.a.(5) Capitalized "not."

APPENDIX 8-B (NEW)

Added "Format for Written Procedure on Removal of Passengers from Stalled Elevators" as Appendix 8-B.

SECTION 9

ELECTRICAL SYSTEMS

9-103 UTILITY RATES AND BILLS
(Replaced last three lines with the following to reflect the correct sources of technical assistance.)

assistance from the divisional office.

9-201 MAINTENANCE
(Replaced the last sentence as follows to more strongly state USPS stand on the service of high voltage equipment.)

Also, the proper performance of this maintenance, while at relatively infrequent intervals, is essential to the safety of the building and its occupants. Therefore, it shall be performed by contract maintenance, incorporating the maintenance guides, instructions, and checkpoints in the contract specification. Work specified in guide E-29 may be beyond local capability and should also be contracted.

9-203 CONTRACT WORK
(Replaced MS-75-1 reference with HBK RE-10.)

9-204 WORK ON SYSTEMS AND EQUIPMENT
(Added to start of paragraph.)

Unless specifically authorized in writing by the Office of Maintenance Management...

9-206 ELECTRICAL WIRE CLOSETS
(Changed the last sentence as follows so that the subparagraph will also be applicable to facilities without electricians.)

Cleanliness of these spaces is the responsibility of the building services and building equipment personnel.

9-211 INSULATING MATS AND GLOVES
(Replaced existing paragraph with the following to better define the care requirements of protective equipment.)

Rubber insulating gloves are not authorized except as specifically required by circumstances identified in Appendix 9-A. If insulating 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 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.

9-213 WIRING DIAGRAMS AND SCHEMATICS
(The following changes are intended to clarify the requirements to maintain accurate drawings.)

Changed the second sentence to read "The accuracy of the drawings should be checked by personnel having knowledge of electrical equipment."

Eliminated the last three lines and inserted the following:

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.

9-303.2 Instructions and Procedures
(This change clarifies the requirement to post one-line schematics. Changed the paragraph to read as follows.)

Headquarters instructions on clearing and restoring high-voltage units together with one-line schematics shall be posted in each switchgear room and vault. The drawings shall be black line on white background and shall be protected to prevent vandalism or normal degradation. Two qualified people shall be present whenever maintenance or switching of high-voltage equipment is being performed, one to check the work of the other. In the event of a fire or similar emergency, necessary switching operations may be performed by one qualified person. Unqualified personnel shall not be permitted to work on high-voltage equipment. Admittance to spaces housing this equipment shall be limited to qualified personnel only. The telephone number of the utility company dispatcher shall be mounted, visible to the telephone in all switchgear rooms and transformer vaults. The service must be locked in a deenergized position and a Form 4812 placed on the disconnect device control before any work is performed.

9-309 POWER AND CONVENIENCE OUTLETS FOR MAINTENANCE USE
(The following change clarifies convenience outlet requirements. Changed the existing paragraph to read as follows.)

Wire closet, 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
(Changed the paragraph to read as follows to clarify the requirements to test high-voltage cable after a failure has been experienced.)

Periodic high-voltage testing of power cables is not required. However, it is recommended that testing be performed immediately after a switchboard failure. Cables should be maintained clean and dry, and be protected from mechanical damage.

9-401 FIRE ALARM SYSTEMS
(Replaced lines 18 through 20 with the following to clarify the skills required to service the system.)

...or more employees should be trained for it. Journey electrician skills should be sufficient to keep the fire alarm system in proper working condition. All parts of the system ...

9-402 SECURITY SYSTEMS
(New wording and title more clearly define responsibility in maintaining the system.)

Systems for security patrols are similar to fire alarm systems in that they vary from the simple key that punches a clock to the extensive system that is supervised at a central control desk. The electrical security systems are usually serviced by the same employee who services the fire alarm system. The circuits are similar and several of the principles of one apply to both.

9-502 LIGHTING USE
(Changed the word "workmen" to "personnel.")

9-504 INCANDESCENT LAMPS
(Paragraph changed to reflect a more energy-conservative approach.)

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.

9-601 INTRODUCTION
(Made "Handbooks" singular and eliminated "and MS-50.")

9-603 UTILITIES CONSERVATION
(Made "Handbooks" singular and eliminated "and MS-50.")

APPENDIX 9-A (This appendix was changed to remove reference to Forms 4811 and 4812 and include reference to Form 4807. Other editorial changes were also made. In paragraph 1.b.(1)(c) added the following note.

NOTE: Circuit breaker trip indicators are no 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.

SECTION 10

HEATING, VENTILATING, AND AIR CONDITIONING SYSTEMS

10-101 OPERATION
(Deleted reference to MS-50 as indicated below.)

In the last sentence, changed the word "handbooks" to "handbook" and eliminated the words "and MS-50."

10-103 HOURS OF OPERATION
(Deleted erroneous reference to MS-49 heating schedule. The form displayed in Figure 3-1 is not a heating schedule. Deleted second sentence in paragraph.)

10-108 APPEARANCE OF MACHINERY SPACE
(Changed third sentence to reflect floor sealing as an alternative to painting as follows.)

The machinery spaces, particularly the floor, and the equipment in each space should be kept sealed or painted.

10-110 CONSERVATION OF HEATING AND COOLING
(Deleted reference to MS-50 in the second sentence.)

10-111 CENTRAL CONTROL PANELS
(Changed by adding reference to the General Monitoring System. Replaced the second sentence with the following.)

When new control panels are being considered for facilities of 100,000 interior square feet, or larger, the installation of the USPS-designed General Monitoring System shall be given primary consideration.

If commercially available central control panels are installed in major facilities, they must have the following capabilities: stop, start, scanning, recording, indicating, reset, system display, and intercom.

10-202 WHEN COOLING IS NEEDED
(Changed to reflect the possibility of using enthalpy controllers to cool interior spaces. Changed the sixth sentence to read as follows.)

When the wet-bulb temperature is above the designed dewpoint temperature, refrigeration may be required. Whenever practical, outside air shall be used for cooling.

10-503 METHODS OF TREATING WATER
(MAJOR REVISION - Changed the methods listed to reflect the latest procedures.)

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, Request for Procurement and Services , must be submitted to the divisional office.

10-601.1 Boiler
(Editorial change - Changed to read as follows.)

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.

10-602.1 Construction Inspection
(Replaced the last sentence in the paragraph with the following sentence.)

Boilers and unfired pressure vessels that do not bear an ASME stamp shall be replaced.

10-603 FREQUENCY OF INSPECTION
(MAJOR REVISION - Deleted subparagraphs 10-603.1 through .5 and replaced with the following sentence for ease of updating.)

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

SECTION 11

PLUMBING AND SEWERAGE SYSTEMS

11-101 CODE REQUIREMENTS
(Added NFPA reference to the end of the last sentence.)

and the National Fire Protection Association (NFPA).

11-102 PIPING IDENTIFICATION
(Added the following to the end of the subparagraph in reference to the latest ANSI standards.)

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.

11-104 PIPING LEAKS
(Changed so that the paragraph will read as a requirement.)

In the last sentence, changed the word "should" to "shall."

11-105 CROSS CONNECTIONS
(Added requirement for backflow preventers to the end of the paragraph.)

Reduced-pressure backflow preventers must be installed on all domestic water supplies to all systems using toxic chemicals (boilers, chillers, etc.) to prevent the possibility of contaminating the domestic water supply.

11-106 VACUUM BREAKERS
(Added faucets with hose attachments to the requirements. Insert the following after the word "Any" in the first sentence.)

faucet to which a hose can be attached, or

11-201 DRINKING FOUNTAINS
(Changed the last sentence as follows to more clearly state policy on new water fountains.)

Wall-hung fountains shall be used when replacing, or when adding, new fountains, if it is practical to do so.

11-202 TOILET FIXTURES REQUIRED
(Changed to add Figure 11-1 as the reference for fixture quantities.)

11-204 TOILET PARTITIONS
(Changed so that subparagraph reads as policy rather than suggestion.)

Changed the word "should" to "shall."

11-304 TEMPERATURE OF DOMESTIC HOT WATER
(Changed as follows so that subparagraph reads as policy, and to eliminate MS-50 reference.)

For general use in office buildings, the temperature of hot water shall not exceed 104°F to comply with energy conservation requirements published in HBK MS-49.

11-307 PROTECTION AGAINST FREEZING
(Changed the subparagraph as follows to clarify meaning.)

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

SECTION 12

MISCELLANEOUS BUILDING EQUIPMENT

12-302 OPERATION
(Added safety precaution requirement to the end of the subparagraph.)

All safety precautions shall be observed when the equipment is operated by USPS employees, or contractors, on USPS property.

12-403 MAINTENANCE
(Updated cost limitation.)

In the fifth sentence, changed "$100" to "$200."

SECTION 13

BUILDING OPERATION AND MAINTENANCE STAFFING REQUIREMENTS

The chapter title was changed to more accurately reflect the scope of material included in this chapter.

13-104 MANAGEMENT SYSTEM

Added to include requirements previously in 13-202 for applying appropriate maintenance management system procedures to the functions identified herein.

13-2 PROCEDURES

Changed to provide a brief overview of the procedures and guidelines presented in this chapter.

13-4 BUILDING EQUIPMENT REQUIREMENTS

Expanded to identify the broad scope of requirements for building equipment operation and maintenance, including preventive maintenance objectives, contract maintenance considerations, and operating route functions previously included in 13-401, 13-403, and 13-501, respectively.

13-403 DEVELOPMENT OF BUILDING EQUIPMENT CHECKLISTS AND ROUTES (NEW)

Added to provide additional instructions for local development of checklists and routes, including requirements previously in 13-203, 13-402, and 13-502a(5) and (6).

13-5 STAFFING PROCEDURES (NEW)

Includes detailed procedures for determining all building equipment staffing requirements.

13-501 PREVENTIVE MAINTENANCE

Contains instructions for calculating preventive maintenance staffing requirements including instructions for Form 4896-A previously in 13-404. Form 4896-A has been updated to include revised and additional PM guides issued herewith in Appendix 13-B. Form 4896-A is now to be used only for calculating standard preventive maintenance allowances. Locally developed requirements with significant variances from standard allowances, and those for which no preventive maintenance standards exist, are to be identified separately on revised Form 4896.

13-502 EQUIPMENT OPERATION

Contains revised procedures for calculating standard workhour requirements for equipment operation, and instructions for completing updated Forms 4894 and 4895 for traveling and stationary operating routes. Locally developed requirements with significant variances from standard allowances and those for which no operating standards exist, are to be identified separately on revised Form 4896.

13-503 CORRECTIVE MAINTENANCE

Includes material previously in 13-6. The term "service calls" was changed to "corrective maintenance."

13-504 MISCELLANEOUS

Includes material previously in 13-7.

13-505 SPACE ADJUSTMENTS

Includes material previously in 13-803h.

13-506 NONPOSTAL FUNDED WORK

Includes material previously in 13-803i.

13-507 WORKHOUR REQUIREMENTS SUMMARY

Provides instructions for completing revised Form 4893 and replaces material previously in 13-803. Minor changes to Form 4893 were made resulting from revisions to other forms.

Copies of Forms 4897, 4896-A, 4896, 4894, 4895 and 4893 (Figures 1 through 6, respectively) are included.

APPENDIX 13-A EQUIPMENT INVENTORY AND MAINTENANCE REFERENCE GUIDE

Improved to include appropriate NMICS acronyms, expanded preventive maintenance and operation guides for listed equipment, and additional equipment for which new preventive maintenance guides have been added and to realphabetize items according to common nomenclature.

APPENDIX 13-B PREVENTIVE MAINTENANCE GUIDES

PM Guide A-10, Controls - Central System

Includes examples of "Stations" referred to on PS 4896-A.

PM Guide A-24, Induction Units

Renamed "fan/coil" unit.

PM Guides A-25, Heating and Cooling Unit, Roof Top; A-28, Heater, In-Duct Electric; and A-33, General Monitoring System
(Have been added.)

PM Guide A-29, Steam Turbines

Deleted. New Guide A-29 for Heater, Baseboard, Electric, has been added.

PM Guide E-4

Revised to include wet-cell, dry-cell, and gel-cell type emergency lighting units, and to change the frequency from quarterly to annual in compliance with Life Safety Code (101) requirements.

PM Guides E-11 and E-13 through E-28 and E-30

Deleted. Guides E-13 through E-28 will be included in the next revision of HBK MS-28 as contract maintenance guidelines. If there are offices performing this maintenance with inhouse personnel, they should use history records to determine staffing requirements.

PM Guide E-35, Automatic Fire Detection or Alarm Devices

Revised to change the frequency from annual to semiannual maintenance.

PM Guide E-38, Fire Alarm Boxes (Manual)

Revised to change the frequency to bimonthly maintenance for nonsupervised systems.

PM Guides L-1 through L-13, Elevators (Electric and Hydraulic)

Revised to include monthly tests of fire fighters' service and recording results of such tests on the route sheet. Forty-five minutes was added to the monthly route time.

PM Guide L-16, Escalators

Revised to add maintenance and testing of upthrust safety switches.

PM Guide P-2, Fire Control Valves for Water Distribution Systems

Revised to require compliance with local codes, if applicable, for training and licensing of persons installing or maintaining sprinkler systems.

PM Guide P-3, Fire Extinguisher, Portable, Stored-Pressure Type

Revised to make it applicable for all stored-pressure-type portable fire extinguishers, regardless of extinguishing agent contained therein.

PM Guide P-4, Fire Extinguisher, Portable, Gas (CO_2) - Cartridge Type

Revised to make applicable for all gas-cartridge-type, portable, dry chemical fire extinguishers.

PM Guide P-5, Fire Extinguishers, Hydrostatic Testing of Stored Pressure and Cartridge Type

Revised to provide for different hydrostatic test frequencies on selected types of extinguisher shells.

PM Guide P-6, Fire Extinguishing Systems, Fixed

Revised to make it applicable for both CO_2 and halon-fixed fire extinguishing systems. The frequency was also changed from annual to semiannual.

PM Guide P-16, Backflow Preventer

Added.

PM Guide P-17, Traps, General, Thermostatic, Bucket and Impulse

Revised to change the frequency of low-pressure steam traps from every five years to annual.

PM Guide P-20, Drains, Roof, Gutter, Etc.

Revised to include additional time for inspection and maintenance of roofs.

PM Guide P-31, Hot Water Heaters - Domestic Type

Revised to add checking the relief valve for proper operation.

PM Guides P-33 and P-34, Fire Pumps, Electric Motor Drive and Fire Pumps, Internal Combustion Engine Drive

Added to provide for annual maintenance to fire pumps.

APPENDIX 13-C, retitled EQUIPMENT OPERATION GUIDES

Now includes standard equipment operating criteria and allowances previously in Appendices 13-D and 13-E, as well as suggested operator duties for development of local checklists and routes formerly in Appendix 13-C. New material has been added for operating checks of emergency lighting units. Allowances were added to Form 4894 for monthly checks of emergency lights and weekly checks of fire pumps.

Various editorial changes were made to clarify but not change other instructions.

RECISIONS

MMO-19-77: Exhibit C1 only. Local variations from standards in HBK MS-1 are to be listed on Form 4896.

MMO-45-82: Only that part referencing addition of checklist item number 7 to PM Guide P-31.

MMO-1-85: In its entirety.

SECTION 14

INSPECTIONS AND EVALUATIONS

14-103 OBJECTIVES
Assistance to Supervisors (Editorial change - Changed the sentence to read as follows.)

To assist supervisory personnel in effectively maintaining clean, comfortable, and safe buildings and surroundings.

14-104.2.h. (Editorial change.)

Changed the word "engineer," in the first sentence, to "personnel."

14-104.3.c. (Changed as follows to include OSHA-type audits.)

GAO/OSHA AUDITS. Building managers are required to cooperate in GAO or OSHA independent audits. However, they must immediately notify the divisional office whenever a GAO or OSHA audit is initiated in the building.

14-201 GENERAL
(Changed to allow the divisions' discretion in scheduling inspections.)

14-209.2 Submission of Reports
(To reflect current policy, changed the subparagraph to read as follows.)

Each division shall retain a copy of the reports of maintenance audits that have been performed throughout the previous year. Upon request these reports shall be submitted to the Office of Maintenance Management.

14-301 APPLICATION
(To reflect current policy, changed the first sentence to read as follows.)

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.

14-301.d. (NEW - added to cover insurance inspections in leased facilities.)

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

Figure 14.1 Form 4905 has been updated.

SECTION 15

CONCESSIONS

Changed to correct references to new handbooks HBK EL-602 and HBK EL-702 and other editorial changes.

SECTION 16

PROTECTION

16-103 OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA)
(Corrected the safety inspection checklist reference.)

Replaced "(Form 1784-A or Form 1784-B)" with "(MMO-86-85)."

16-401.2 Selection of Extinguishers
(To give latest supply information, changed subparagraph to read as follows.)

Fire extinguishers can be ordered from Federal Supply Schedule FSC Group 42, Part 1 - Fire Equipment and Supplies, unless local purchase results in reduced cost of extinguishers certified by the Underwriter's Laboratory.

16-402 STANDPIPES AND HOSES
(Editorial change - Changed the last sentence in the subparagraph to read as follows.)

The installation of fire hoses must be coordinated with the local fire department only in the following instances:

SECTION 17

DAMAGE CONTROL AND EMERGENCY PLANNING

(NEW TITLE - Changed to reflect broader range of emergencies.)

17-104 BUILDING MANAGER'S RESPONSIBILITY
(Editorial change - Changed the first sentence to read as follows.)

The building manager is responsible for the operation of the building under all circumstances.

Added the following to the end of the subparagraph:

The building manager shall establish a Damage Control Center from which damage control activities will be coordinated, and information conveyed to the building's Self-Protection Coordinator.

17-2 BUILDING OCCUPANT ORGANIZATION

Changed entirely to emphasize the Postmaster's responsibility.

17-301 DAMAGE-CONTROL LEADER
(Changed as follows to eliminate reference to sex of leader.)

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

17-302 ORGANIZATION OF THE DAMAGE-CONTROL TEAM
(Changed foreman to supervisor.)

17-405.1 (Editorial change - Changed the words "civil defense alarm" to "emergency broadcast."

Figure 17-1 INSTRUCTIONS TO THE DAMAGE-CONTROL TEAM
(Redefinition of terms.)

In header, deleted "or take cover." In header, changed "AFTER ATTACK" to "UPON RETURN." Changed air-conditioning instruction which read "Leave on until attack" to read "turn off at evacuation signal."

17-406 RESPONSE DURING NONDUTY HOURS
(Editorial change - Changed the word "guard" to "security officer."

CONTENTS

SECTION 1 INTRODUCTION

1-1 RESPONSIBILITY
1-2 APPLICATION
1-3 SAFETY
1-4 DIVISIONAL SUPPLEMENTS
1-5 OPERATING ISSUANCES

SECTION 2 BUILDINGS MANAGEMENT FIELD OPERATIONS

2-1 ADMINISTRATIVE SUPPORT MANUAL
2-2 GLOSSARY
2-3 INTERCHANGE OF SPACE IN POSTAL SERVICE AND GSA-CONTROLLED BUILDINGS
2-301 Postal Service - GSA Agreement
2-4 BUILDINGS MANAGEMENT RESPONSIBILITY
2-401 In USPS-Owned Buildings
2-402 In USPS-Leased Buildings
2-5 MANAGEMENT DATA
2-501 General
2-502 Local Air Pollution, Water Pollution, or Other Regulations
2-503 Reports Required
2-504 Reserved
2-505 Deviations Authority
2-506 Organization Charts
2-507 Emergency Data
2-508 Maintenance Documents and Library
2-509 Maintenance Training Records
2-510 Vacation and Training Schedule
2-511 Labor Agreements
2-512 Inspection Log
2-513 Budget
2-514 Special Projects and Plans
2-6 LOCAL CODES AND ORDINANCES
2-7 DISPLAYING THE COLORS
2-8 ESTABLISHING WORK SCHEDULES
2-9 EMPLOYEES' ROLE IN THE MAINTENANCE PROGRAM
2-10 MANAGEMENT OF LEASED SPACE
2-1001 Definitions
2-1002 General
2-1003 Duties of Postmaster or Designated Official
2-11 METHODS OF COMPUTING BUILDING AREAS
2-1101 General
2-1102 Gross Area
2-1103 Net Assignable Area
2-1103.1 General
2-1103.2 Office Type
2-1103.3 Storage Type
2-1103.4 Special Type
2-1103.5 Computing Net Assignable Areas
2-1104 Circulation Area
2-1104.1 General
2-1104.2 Horizontal Circulation Areas
2-1104.3 Computing Circulation Areas
2-1105 Mechanical Area
2-1106 Construction Areas
2-1107 Total Net Area
2-1108 Ratio of Net to Gross Area
2-1109 Typical Use of Space
2-1109.1 Single Agency Assigned Areas
2-1109.2 Service Area
2-1109.3 Operation Areas

SECTION 3 TENANT RELATIONS AND SPECIAL SERVICES

3-1 TENANT RELATIONS
3-101 Scope
3-102 Tenant Requests
3-102.1 Referral to GSA

3-102.2 Tenant Control
3-102.3 Tenant Good Housekeeping
3-103 Public Relations
3-2 SERVICES
3-201 Standard Level Services
3-202 Reimbursable Services
3-203 Services Not Available From USPS
3-204 Special Services
3-204.1 Auditoriums, Conference Rooms and Other Meeting Places
3-3 FIRE SAFETY REGULATIONS
3-301 Published Regulations
3-302 The Building Manager's Responsibilities
3-303 Technical Reference
3-304 Noncompliance Situations
3-4 PARKING
3-401 Space Allocation
3-402 Priority Assignment
3-403 Layout
3-404 Agency Assignment
3-408 Removal of Improperly Parked Vehicles
3-5 FURNISHINGS AND EQUIPMENT
3-501 Directory Boards
3-501.1 Location
3-501.2 Design
3-501.3 Information Contained
3-501.4 Changing Information
3-501.5 Service by Lessor
3-502 Bulletin Boards
3-502.1 In USPS Space
3-502.2 In Tenant Space
3-503 Door Title Cards and Holders
3-503.1 Provision of Cards
3-503.2 Tenant's Requests
3-503.3 Outrigger Signs
3-504 Electrical Equipment - Employee Owned
3-504.1 General
3-504.2 Agency Request
3-504.3 Building Manager Inspection
3-505 Equipment Loaned by USPS
3-505.1 Loaning Equipment
3-505.2 Documentation
3-6 MISCELLANEOUS
3-601 Furnishing Assistance to Tenants
3-602 Facilities for the Handicapped
3-603 Installation of Special Equipment
3-603.1 Special Purpose Space
3-603.2 USPS Electronic Equipment Space
3-603.3 Tenants' Electronic Equipment
3-603.4 Submeters
3-604 Keys
3-605 Losses, Thefts, and Articles Found
3-606 Moving
3-606.1 Nonreimbursable
3-606.2 Reimbursable
3-607 Office Machine Repairs
3-607.1 USPS Machines
3-607.2 Tenant Machines
3-608 Nonpostal Displays
3-608.1 USPS Buildings and Grounds
3-608.2 Nationally Recognized Holidays

3-608.3 Displays in Postal Lobbies
3-608.4 Recruiting Signs
3-609 Private Toilets and Shower Facilities
3-609.1 Provision of Private Facilities
3-609.2 Existing Facilities
3-610 Property Pass
3-611 Emergency Preparedness
3-612 Restroom Facilities
3-613 Voting in USPS Facilities (Buildings, Spaces, and Grounds, Both Leased and Owned)
3-614 Soliciting, Electioneering, Collecting Debts, Vending, and Advertising

SECTION 4 BUDGET AND COST REPORTING

(Reserved)

SECTION 5 GROUNDS AND APPROACHES

5-1 RESPONSIBILITY
5-101 Scope
5-102 Local Ordinances
5-103 Repair Responsibility
5-2 GROUNDS
5-201 General
5-202 Isolated Locations
5-203 Technical Assistance
5-204 Equipment
5-3 APPROACHES
5-301 General
5-302 Sidewalks
5-4 SNOW REMOVAL
5-5 SIGNS
5-501 General
5-502 Striping of Parking Areas
5-6 FENCES
5-7 PARKING AREA LIGHTING

SECTION 6 STRUCTURES

6-1 RESPONSIBILITIES
6-101 General
6-102 Adherence to Codes
6-2 STRUCTURAL MAINTENANCE AND REPAIR
6-3 FACILITY REQUIREMENTS AND RESPONSIBILITIES
6-301 Placing of Seals, Plaques, and Memorials in USPS Buildings
6-302 Floor Loads
6-303 Ash Trays and Sand Urns
6-304 Room and Occupant Identification
6-304.1 Standardization
6-304.2 Numbering Interior Spaces
6-304.3 Occupant Identification
6-304.4 Room Number and Use Identification
6-305 Corridor Identification
6-306 Historic Preservation
6-307 Artwork
6-4 IDENTIFICATION OF USPS BUILDINGS
6-401 General
6-402 Removal of Building Designation

SECTION 7 CLEANING PROGRAM

7-1 INTRODUCTION
7-2 SERVICES PERFORMED BY CONTRACT
7-3 SPECIAL CLEANING PROBLEMS
7-301 Disposal of Waste, Scrap, and Refuse Material
7-301.1 Responsibility
7-301.2 Salable Waste and Scrap
7-301.3 Refuse Removal
7-301.4 Incinerators
7-302 Bird Control
7-302.1 General
7-302.2 High Voltage Method
7-302.3 Chemical Method

7-302.4 High Frequency and Audible Sound
7-302.5 Secret Proprietary Methods
7-303 Cleaning in Concession Space
7-304 Use of Walk-off Mats
7-305 Cleaning Supplies and Equipment
7-305.1 General
7-305.2 Defective Supplies and Equipment
7-305.3 Specification Changes
7-4 CLEANING EQUIPMENT
7-401 General
7-402 Maintenance

SECTION 8 ELEVATORS, ESCALATORS, AND DUMBWAITERS

8-1 OPERATIONAL REQUIREMENTS
8-101 Hours of Service for Elevators and Escalators
8-102 Typical Service Requirements for Elevators
8-103 Qualifications of Elevator Operators
8-104 Vertical Transportation Equipment in Leased Space
8-105 Adherence to Codes
8-106 Signs
8-107 Locking of Elevator Spaces
8-108 Elevator Data Card
8-109 Carrying Passengers on Freight Elevators
8-110 Required Workhours for Elevator Operation
8-111 Use of Elevators During Emergency

8-2 MAINTENANCE AND REPAIR
8-201 Maintenance
8-202 Repairs
8-203 Contract Maintenance and Repair
8-203.1 Contract or In-House Policy Guidelines
8-203.2 Elevator Maintenance and Repair Contracts
8-203.3 Special Contracts
8-203.4 Contract Surveillance
8-204 Elevator Machine Room Temperature
8-205 Machine Room Hoist
8-206 Mileage Indicators
8-207 Machinery Lighting
8-3 INSPECTION AND TESTS
8-301 General
8-302 Scheduling Inspections and Tests
8-303 Inspector Qualifications
8-304 Inspection Frequency
8-305 Special Inspections
8-306 Inspection Checklists
8-306.1 USPS-Certified Inspectors
8-306.2 Contract Inspectors
8-306.3 Local, State Government or Other Federal Agencies' Inspections
8-306.4 Retention
8-307 Certificate of Inspection
8-308 Unsafe Equipment
8-4 SPECIAL REQUIREMENTS AND PROCEDURES
8-401 Releasing Passengers from Stalled Elevators
8-402 Telephones
8-403 Auxiliary Emergency Stop Switches
8-404 Elevator and Hoistway Door Emergency Keys
8-404.1 Hoistway Door Unlocking Devices and Access Keys

8-404.2 Emergency Operation Keys
8-404.3 Parking Device Key
8-405 Emergency Lighting Units for Elevator Cars

APPENDIXES

8A Releasing Passengers From Stalled Elevators
8B Format for Written Procedure On Removal Of Passengers From Stalled Elevators

SECTION 9 ELECTRICAL SYSTEMS

9-1 BUILDING SERVICE

9-101 Utility Company Contacts
9-102 Procedure for Obtaining or Changing Utility Service
9-103 Utility Rates and Bills
9-104 Electrical Energy Costs

9-2 MAINTENANCE AND REPAIR REQUIREMENTS

9-201 Maintenance
9-202 Code Requirements
9-203 Contract Work
9-204 Work on Systems and Equipment
9-205 Locking of Electrical Spaces
9-206 Electric Wire Closets
9-207 Ground Practices
9-208 Identification of Cables and Equipment
9-209 High Voltage Duct Identification
9-210 Piping in Electrical Rooms
9-211 Insulating Mats and Gloves
9-212 Portable Metal Ladders
9-213 Wiring Diagrams and Schematics

9-3 DISTRIBUTION SYSTEMS AND FACILITIES

9-301 Kilowatt-Hour Submeters
9-302 Meters, Recorders, Indicators, and Supervisory Devices
9-303 High-Tension Systems and Equipment
9-303.1 Responsibility
9-303.2 Instructions and Procedures
9-304 Transformers and Transformer Vaults
9-305 Branch Circuit Panelboards
9-306 Fuse-Type Branch Circuit Panelboards
9-307 Branch Circuits
9-308 Convenience Outlets
9-309 Power and Convenience Outlets for Maintenance Use
9-310 Power Cable Testing
9-311 Equipment Ground
9-312 Thermographic Survey

9-4 OPERATING EQUIPMENT AND SYSTEMS

9-401 Fire Alarm Systems
9-402 Security Systems
9-403 Storage Batteries

9-5 LIGHTING

9-501 General
9-502 Lighting Use
9-503 Fluorescent Lamps
9-504 Incandescent Lamps
9-505 Group Replacement
9-506 Stairway, Corridor, Night, and Exit Lights
9-507 Emergency Lighting Units
9-508 Ballasts for Fluorescent Fixtures

9-6 ELECTRIC POWER REDUCTION PLAN

9-601 Introduction
9-602 Responsibility

9-603 Utilities Conservation
9-604 Basic Information Needed
9-604.1 General
9-604.2 Building Equipment
9-604.3 Mail Handling Equipment
9-604.4 Tenant Equipment
9-605 Occupant Cooperation
9-606 Summation of Electrical Load Reduction
9-607 Utility Company Contact
9-608 Control Point
9-609 Power Reduction
9-610 Restoration of Service

APPENDIX 9-A General Guide for Electrical Equipment Maintenance

SECTION 10 HEATING, VENTILATING, AND AIR-CONDITIONING SYSTEMS

10-1 OPERATION, MAINTENANCE, AND REPAIR
10-101 Operation
10-102 Maintenance
10-103 Hours of Operation
10-104 Adherence to Codes
10-105 Room Temperatures
10-106 Zone and Room Controls
10-107 Valve Shutoff Precautions
10-108 Appearance of Machinery Space
10-109 Smoke Control
10-110 Conservation of Heating and Cooling
10-111 Central Control Panels
10-2 AIR-CONDITIONING
10-201 Refrigeration Operating Records
10-202 When Cooling is Needed
10-3 HEATING
10-301 When Heating is Needed
10-302 Degree Days for Heating
10-303 Steam and Condensate Meters
10-304 Boiler-Firing Instructions
10-4 VENTILATION
10-401 Requirements for Mechanical Supply Ventilation
10-402 Requirements for Mechanical Exhaust Ventilation
10-403 Ventilation Air Quantities
10-404 Portable Electric Fans
10-5 WATER TREATMENT
10-501 General
10-502 New Installations
10-503 Methods of Treating Water
10-6 INSPECTION AND TEST OF BOILERS AND PRESSURE VESSELS
10-601 Definition of Boilers and Pressure Vessels
10-601.1 Boiler
10-601.2 Pressure Vessel
10-601.3 Domestic Water Heater
10-602 Inspection and Test Requirements
10-602.1 Construction Inspection
10-602.2 Inspection Certificate
10-603 Frequency of Inspections
10-604 Exemptions
10-605 Scheduling of Inspections
10-606 Inspectors
10-607 Source of Inspectors

SECTION 11 PLUMBING AND SEWERAGE SYSTEMS

11-1 PIPING SYSTEMS
11-101 Code Requirements
11-102 Piping Identification
11-103 Piping Layouts
11-104 Piping Leaks
11-105 Cross Connections

11-106 Vacuum Breakers
11-107 Valves
11-108 Drain Traps
11-109 Sprinkler System Types
11-109.1 The Wet-Pipe Sprinkler System
11-109.2 Standard Dry-Pipe System
11-109.3 Deluge Sprinkler System
11-109.4 Preaction Systems

11-2 FIXTURES AND EQUIPMENT
11-201 Drinking Fountains
11-202 Toilet Fixtures Required
11-203 Wall-hung Toilet Fixtures
11-204 Toilet Partitions
11-205 Soap Dispensers
11-206 Paper Towel Dispensers
11-207 Electric Hand Dryers
11-208 Toilet Paper Holders
11-209 Lawn Sprinklers
11-210 Miscellaneous

11-3 OPERATIONAL REQUIREMENTS
11-301 Water Consumption
11-302 Water Supply
11-303 Water Pressures Required
11-304 Temperature of Domestic Hot Water
11-305 Water Treatment
11-306 Requirement for Sprinklers
11-307 Protection Against Freezing
11-308 Signs and Tags
11-308.1 Closed Signs for Toilet Room
11-308.2 Instructional Signs
11-308.3 Closed-Valve Warning Tag
11-308.4 Utility Cut-off Valves

11-4 MAINTENANCE

SECTION 12 MISCELLANEOUS BUILDING EQUIPMENT

12-1 INCINERATORS
12-101 Installation
12-102 Operation and Maintenance

12-2 POWER-OPERATED DOORS

12-3 POWER-OPERATED SCAFFOLDS
12-301 Installation
12-302 Operation
12-303 Maintenance

12-4 BUILDING MAINTENANCE EQUIPMENT
12-401 General
12-402 Operation
12-403 Maintenance

SECTION 13 BUILDING OPERATION AND MAINTENANCE STAFFING REQUIREMENTS

13-1 GENERAL
13-101 Application
13-102 Objectives
13-103 Scope
13-104 Management System
13-105 Responsibility

13-2 PROCEDURES
13-201 General
13-202 Equipment Maintenance and Operating Standards
13-203 Local Requirements

13-3 INVENTORY
13-301 Requirement
13-302 Instructions

13-4 BUILDING EQUIPMENT REQUIREMENTS
13-401 Preventive Maintenance
13-401.1 Objective
13-401.2 Contract Maintenance
13-402 Equipment Operation
13-402.1 Objective
13-403 Development of Building Equipment Checklists and Routes
13-403.1 PM and Equipment Operation Guidelines

13-403.2 Types of Checklists
13-403.3 Preparing Local Checklists
13-403.4 Conducting Equipment Survey
13-403.5 Establishing Frequency of Service
13-403.6 Selecting Checklist Activities
13-403.7 Sequencing Activities
13-403.8 Validation of Checklist
13-403.9 Time Allowances
13-403.10 Travel Time
13-403.11 Minor Adjustments on Operating Routes

13-5 STAFFING PROCEDURES
13-501 Preventive Maintenance
13-501.10 Standard Requirements
13-501.11 Instructions for Completion of PS 4896-A, Annual Standard Workhour Requirement for Building Equipment Preventive Maintenance
13-501.20 Local Preventive Maintenance Requirements
13-501.21 Instructions for Completion of PS 4896, Annual Local Workhour Requirement for Building Equipment Preventive Maintenance and Operation
13-502 Equipment Operation
13-502.10 Standard Requirements
13-502.11 Form 4894, Annual Standard Workhour Requirement - Traveling Operating Routes
13-502.12 Form 4895, Annual Standard Workhour Requirement - Stationary Operating Routes
13-502.20 Local Operational Requirements
13-503 Corrective Maintenance
13-503.1 General
13-503.2 Definition
13-503.3 Staffing Allowance
13-504 Miscellaneous
13-504.1 General
13-504.2 Staffing Allowance
13-505 Space Adjustments
13-505.1 General
13-505.2 Staffing Allowance
13-506 Nonpostal Funded Work
13-506.1 Definition
13-506.2 Staffing Allowance
13-507 Workhour Requirements Summary
13-507.1 General

13-507.2 Instructions for Completion of Form 4893, Annual Building Equipment Operating and Maintenance Workload Summary
13-508 Documentation
13-508.1 Approval and Retention
13-508.2 Revision

APPENDIXES
13-A Equipment Inventory and Maintenance Reference Guide
13-B Preventive Maintenance Guides
13-C Equipment Operation Guides
1. General
2. Equipment Operating Periods
3. Standard Criteria and Allowances
4. Suggested Operator Duties

SECTION 14 INSPECTIONS AND EVALUATIONS

14-1 GENERAL
14-101 Background
14-102 Policy
14-103 Objectives
14-104 Building Manager's Inspection Function
14-105 Evaluation Techniques
14-105.1 Total Inspection
14-105.2 Random Sampling
14-105.3 Sampling Manual
14-2 DIVISIONAL INSPECTIONS AND EVALUATIONS
14-201 General
14-202 Organization
14-202.1 Inspection Personnel
14-202.2 Basis for Selection
14-203 Scheduling of Inspections
14-204 Advance Preparation
14-204.1 Confirmation of Schedule
14-204.2 Field Officers Cooperation
14-204.3 Operating Personnel Cooperation
14-205 Conducting Onsite Inspections
14-205.1 Divisional Office
14-205.2 Building Managers
14-206 Random Sampling
14-207 Training for Inspections
14-208 Followup of Inspection Deficiencies
14-209 Reports
14-209.1 Filing
14-209.2 Submission of Reports
14-3 INSPECTION OF USPS FACILITIES BY LOCAL GOVERNMENTS
14-301 Application
14-302 Procedures

SECTION 15 CONCESSIONS

15-1 GENERAL
15-101 Background
15-102 Policy
15-103 Responsibility
15-2 VENDING STANDS AND VENDING MACHINES
15-201 Operation
15-202 Nonpostal Areas
15-203 Services Furnished by USPS
15-204 Inspection
15-3 FOOD SERVICE
15-301 General
15-302 Utilities
15-303 Operations
15-304 Inspections
15-305 Trash Removal
15-4 OTHER CONCESSIONS
15-401 Employee Equipment
15-402 License

15-5 INSTALLATION OF PUBLIC TELEPHONE PAY STATIONS
15-501 Policy
15-502 Authorizations
15-503 Pay Outlet
15-503.1 Public Use
15-503.2 Employee Use
15-503.3 Postal Area
15-504 Location
15-504.1 Convenience
15-504.2 Outside Stations
15-504.3 Paying Locations
15-505 Installation

SECTION 16 PROTECTION

16-1 GENERAL
16-101 Scope
16-102 Responsibility
16-102.1 Supervisory
16-102.2 Safety Program
16-102.3 Personal
16-103 Occupational Safety and Health Act (OSHA)
16-2 CONDUCT ON POSTAL PROPERTY
16-201 Authority
16-202 Posting
16-203 Enforcement
16-3 INVESTIGATIVE SERVICES
16-301 General
16-302 Other Authorities
16-303 Reporting
16-304 Tenant Agencies
16-4 Fire Protection Equipment
16-401 Portable Fire Extinguishers
16-401.1 Fire Extinguisher Standards
16-401.2 Selection of Extinguishers
16-401.3 Maintenance
16-402 Standpipes and Hoses
16-403 Sprinkler Systems
16-5 FIRE DEPARTMENT NOTIFICATION
16-501 General
16-502 In Case of Fire
16-503 In Special Situations
16-6 FIRE ALARM IDENTIFICATION
16-7 FIRE DRILLS
16-8 FIRE BRIGADES
16-9 FIRE SAFETY REGULATIONS

SECTION 17 DAMAGE CONTROL AND EMERGENCY PLANNING

17-1 GENERAL
17-101 Scope
17-102 Advance Planning
17-103 Contingency Plans
17-2 BUILDING OCCUPANT ORGANIZATIONS
17-201 Occupant Responsibility
17-202 Organization Structure
17-203 Building Manager's Responsibilities
17-204 Notifying Occupants of Emergency Conditions
17-3 DAMAGE-CONTROL ORGANIZATION
17-301 Damage-Control Leader
17-302 Organization of the Damage-Control Team
17-303 Rotation of Team Members
17-4 PLAN OF EMERGENCY OPERATIONS
17-401 Identifying Cutoff Valves and Switches
17-402 Designation and Assignment of Control Posts
17-403 Designation of Building Control Center
17-404 General Instructions to the Damage-Control Team
17-405 Damage-Control Plan
17-406 Response During Nonduty Hours
17-5 CORRECTIVE MEASURES
17-501 Investigation and Followup

FIGURES

Figure Number — Title

3-1 Rules Governing Auditoriums, Conference Rooms, Other Meeting Places
3-2 Fire Safety Regulations
3-3 Standard Armed Forces Recruiting Sign
3-4 Alternative Armed Forces Recruiting Sign

3-5 Property Pass
Optional Form 7

8-1 Typical Emergency Instruction

8-2 Elevator Data Card
PS Form 4813

8-3 Certificate of Inspection
PS Form 279

8-4 Out of Order Tag
PS Form 4707

9-3 Storage Battery Monthly Record, PS Form 4815

10-1 Pressure Vessel Inspection Certificate
PS Form 279-A

11-1 Toilet Room Fixtures

11-A1 Scheme for the Identification of Piping Systems

11-2 Closed-Valve Warning Tag
PS Form 4810

13-1 Building Equipment Inventory
PS Form 4897

13-2 Annual Standard Workhour Requirement for Building Equipment Preventive Maintenance
PS Form 4896-A

13-3 Annual Local Workhour Requirement for Building Equipment Preventive Maintenance and Operation
PS Form 4896

13-4 Annual Standard Workhour Requirement - Traveling Operating Routes
PS Form 4894

13-5 Annual Standard Workhour Requirement - Stationary Operating Routes
PS Form 4895

13-6 Annual Building Equipment Operating and Maintenance Workhour Summary
PS Form 4893

14-1 Building Operation and Maintenance Evaluation Summary

15-1 Revocable License for Nonpostal Use of Real Property

16-1 Fire Alarm Identification Sign

17-1 Instructions to the Damage Control Team

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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.

1-5 OPERATING ISSUANCES

The following is a partial listing of USPS handbooks and publications which contain detailed specialized information in areas closely related to building operations:

HBK MS-6 Repair and Alteration Surveys
HBK MS-7 Repair and Alteration of Real Property (Being revised)
HBK MS-9 Physical Surveys of Leased Postal Facilities
HBK MS-11 Industrial Storage Batteries
HBK MS-21 Elevator Maintenance
HBK MS-24 Heating, Cooling, and Ventilating
HBK MS-28 Maintenance of Electrical Switchgear
HBK MS-39 Fluorescent and Mercury Vapor Lighting, Cleaning, and Relamping
HBK MS-45 Area Maintenance Office Operating Procedures
HBK MS-47 Housekeeping - Postal Facilities
HBK MS-49 Energy Conservation and Maintenance Contingency Planning
HBK MS-56 Fire Prevention and Control
HBK MS-63 Maintenance Management - Class A Offices
HBK MS-65 Maintenance Management - Class B Offices
HBK RE-10 Short Form Specifications
HBK EL-801 Supervisor's Safety Handbook
HBK EL-803 Maintenance Employee's Guide to Safety
HBK EL-602 Food Service Operation
HBK MS-10 Floors, Care and Maintenance
PUB 24 Supply Catalog
PUB 41 Postal Contracting Manual

Training Catalog

Management Instructions

Safety Inspection of Heating Boilers, Unfired Pressure Vessels, Elevators, Escalators and Dumbwaiters
AS-620-82-12
Safety Inspection of Heating Boilers, Unfired Pressure Vessels, Elevators, Escalators and Dumbwaiters in Owner-Maintained Leased Buildings
AS-620-84-14
USPS Maintenance of Leased Facilities
AS-510-83-1
USPS Buildings Occupied by GSA/Federal Agencies - Reimbursable Work Authorizations
AS-510-82-10
Building Management Program
AS-510-81-14
Facility Fire Protection Criteria
RE&B DC-86-3
Dtd 4/8/86
Friable Asbestos Containing Materials Control Program
Filing EL-810-85-5

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.

m. Space adjustments - A rearrangement of space, or relocation of equipment, which does not extend any exterior wall of the building. A space adjustment is usually made to accommodate a specific tenant's operation or to permit the most efficient use of space and facilities.

2-3 INTERCHANGE OF SPACE IN POSTAL SERVICE AND GSA-CONTROLLED BUILDINGS

2-301 POSTAL SERVICE - GSA AGREEMENT

The occupancy of space by the Postal Service in GSA-controlled buildings and occupancy of space by other Federal agencies in postal-owned buildings is governed by the provisions of an agreement entitled, "Agreement Between General Services Administration and the United States Postal Service Covering Real and Personal Property Relationships and Associated Services."

2-302 The portion of the agreement applicable to nonpostal activities located in USPS buildings is covered in section 3 of this handbook, Management Instructions AS-510-82-10 and AS-510-82-11, and chapter 5, Administrative Support Manual (ASM). Those USPS buildings that have nonpostal activities shall have a copy of each of the above-cited publications in their data files for ready reference.

2-4 BUILDINGS MANAGEMENT RESPONSIBILITY

2-401 IN USPS-OWNED BUILDINGS

2-401.1 Provide general and special purpose space and related services necessary to meet the needs of the occupying activity.

2-401.2 Make repairs, improvements, and alterations necessary to preserve the building and equipment, and maintain a safe, comfortable environment.

2-402 IN USPS-LEASED BUILDINGS

In leased buildings, the direct management responsibilities may be divided between the USPS and the lessor as set forth in the terms of the lease. Failure on the part of the lessor to meet its responsibility shall be documented and reported to the lease contracting officer for corrective action. The types of leases are:

a. Full Service - The lessor is responsible for furnishing all building services including maintenance, utilities, repair, cleaning, etc.

b. Partial Service - The responsibility for operations and maintenance of the building is divided between the USPS and the lessor. One common partial service lease makes the USPS responsible for the utilities and cleaning, with the lessor responsible for all other. The division of responsibility is set forth in the lease agreement.

c. No Service - The USPS has assumed maintenance responsibility under the terms of the lease, or in an amendment to the lease. This applies to repair and preventive maintenance and does not apply to Improvements and Alterations (AS-510-83-1).

2-5 MANAGEMENT DATA

2-501 GENERAL

The successful management of a building requires that certain data on the building and personnel be available. It is recommended that data files described in this part be maintained at

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.

2-511 LABOR AGREEMENTS

A copy of current national and local agreements with any special local interpretations.

2-512 INSPECTION LOG

The building manager must maintain an inspection log, showing in chronological order such inspections which impact maintenance (for example, annual or major safety inspections, building equipment inspections, structure inspections, personnel inspections, stockroom inspections, and mail processing equipment inspections).

2-513 BUDGET

Last fiscal year estimated budget and actual used should be listed. Current fiscal year estimated budget and actual to date by quarter, projected next fiscal year budget, and items which would impact estimated budget should be used.

2-514 SPECIAL PROJECTS AND PLANS

A special projects and plans file must show current special efforts or plans which impact the maintenance building management function. For example, plans and status on local energy conservation, R & A, moving plans, overhauls for major equipment, and security plans.

2-6 LOCAL CODES AND ORDINANCES

It is USPS policy to comply with local codes and ordinances except where they are inconsistent with national codes or postal policy, or where adherence would result in redundant or unnecessary expense.

2-7 DISPLAYING THE COLORS

2-701 The flag of the United States must be properly displayed on a stationary flagstaff at all postal facilities. Procedures for displaying the flag are in ASM 440.

2-702 Direct questions on the display or use of the flag to the divisional office. Questions by divisional officials will be referred to the Assistant Postmaster General for Public and Employee Communications.

2-8 ESTABLISHING WORK SCHEDULES

When establishing work schedules, give first consideration to the operation of the facility to meet the needs of postal operations and other tenants. Keep interruptions to a minimum and then only to correct emergency conditions. Coordinate painting, construction, repair, and space adjustment work with the occupants, regardless of the source of funds, unless it is performed in an area where the work of the occupant agencies is not interrupted.

2-9 EMPLOYEES' ROLE IN MAINTENANCE PROGRAM

All employees are required to report to their supervisors any building condition which requires maintenance or repair. The supervisor reviews these reports and forwards them to the maintenance control units. Maintenance employees use Form 4568, Postal Maintenance Problems Feedback Report, to provide feedback to the divisional office and MTSC on unusual maintenance problems and/or improvements which may be of interest to others. This feedback report is valuable in directing management attention to problems at the operating level. Defects found in equipment under warranty should be reported on Form 4568 (see part 743 of HBK MS-63). When using these forms, the name and telephone number of the person most familiar with the problem should be included to simplify further communication.

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

contacts with lessor. Document and report to the real estate representative as appropriate, significant or continuing failures of lessors to perform in accordance with the terms of leases. In case of controversy and doubt, request interpretation of the lease provisions from the real estate representative as appropriate. Recommend to the real estate representative any necessary modifications of lease provisions.

f. Follow requirements of ASM 513.2 and 513.3 for lease cancellation and vacating leased facilities.

2-11 METHODS OF COMPUTING BUILDING AREAS

2-1101 GENERAL

When including building areas in the measurement of space, use gross area and total net area. Definitions for, and prescribed methods of, computing building areas are covered in this part.

2-1102 GROSS AREA

2-1102.1 Gross area is the sum of the floor areas including the normal outside faces of exterior walls, disregarding architectural setbacks or projections. It pertains to all stories or areas which have floor surfaces.

2-1102.2 Compute gross area by measuring from the normal outside face of exterior walls, disregarding cornices, pilasters, and buttresses, which extend beyond the wall face.

2-1102.3 Do not include a ground level or intermediate story, or part of it, which is left unenclosed, as part of the gross area of the building.

2-1102.4 In addition to areas obviously in this category, gross area includes basements (except unexcavated portions), attics, garages, roofed porches, mezzanines, shipping platforms, penthouses, and mechanical equipment floors, lobbies, and corridors, provided they are within the normal face lines of the building. Since post office mailing platforms are always included in net assignable area, they must be included in gross area, regardless of whether they are within or outside of the exterior wall lines of the building.

2-1102.5 The gross area does not include open courts, light wells, upper portions of rooms, or lobbies which rise above the story being measured or extend beyond the principal exterior walls of the building.

2-1102.6 Do not include unroofed features, such as cooling towers, in gross area.

2-1103 NET ASSIGNABLE AREA

2-1103.1 General

Net assignable area is that portion of the gross area which is assigned or available for assignment to using agencies, including space which is available jointly to the various occupants of the building. It also includes space provided for the operation and maintenance of the building. Typical uses of net assignable area, classified by types, are listed in 2-1109.

2-1103.2 Office Type

Space which provides an environment suitable for an office operation. This requirement includes, but is not limited to, suitable and adequate lighting, heat and ventilation, appearance, accessibility, circulation, floor covering, and sound control. The space may consist of a large openly planned area generally laid out on a

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

corridors without partitions are designated "phantom" corridors).

2-1104.3 Computing Circulation Areas

Measure from the inner faces (or room side) of the walls or partitions which enclose such areas. Where areas normally required for circulation purposes are not enclosed by walls or partitions, measurements should be taken from imaginary lines which conform as nearly as possible to the established circulation pattern of the building. When projecting corridor areas, include only areas required for general access; do not include aisles which are normally required for circulation within offices or other working areas.

2-1105 MECHANICAL AREA

2-1105.1 Mechanical area is that portion of the gross area designed to house mechanical and utility services required in the building operation. This does not include any area which houses printing, mail processing, or other special-purpose machinery.

2-1105.2 Mechanical areas include, but are not limited to:

a. Boiler rooms
b. Mechanical and electrical equipment rooms
c. Cooling towers (enclosed only)
d. Fuel rooms
e. Meter closets
f. Shafts and stacks:

   (1) Air ducts
   (2) Mechanical service
   (3) Service chutes
   (4) Vents

2-1105.3 Compute mechanical area by measuring from the inner faces of the walls, partitions, or screens which enclose such areas.

2-1106 CONSTRUCTION AREAS

2-1106.1 Examples of areas normally classified as construction are walls and permanent partitions, columns and projections, and unusable areas in attics or basements.

2-1106.2 Precise computation of construction area is not contemplated under this system because some construction features are included in the computation of net and assignable area. Total construction area is usually determined by assuming it to be the residual area after the net assignable, circulation, and mechanical areas have been deducted from the gross area.

2-1107 TOTAL NET AREA

That portion of the gross area which is composed of the net assignable area and horizontal circulation areas.

2-1108 RATIO OF NET TO GROSS AREA

Compute by dividing the total net area by the gross area.

2-1109 TYPICAL USE OF SPACE

The following listing shows typical uses of net assignable space found in areas classified by type:

2-1109.1 Single Agency Assigned Areas

2-1109.1.1 Office type, which may be used for:

a. Offices
b. File rooms
c. Laboratories (nonfixed equipment)
d. Libraries (without fixed stacks)
e. Credit unions
f. Storage
g. Reserve
h. Conferences

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

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SECTION 3

TENANT RELATIONS AND SPECIAL SERVICES

3-1 TENANT RELATIONS

3-101 SCOPE

Many USPS buildings provide housing for nonpostal tenants as well as for postal operations. It is imperative that a harmonious relationship with tenants be maintained. Towards that end, certain procedures and avenues of communication have been established and it is essential that the building managers adhere to them.

3-102 TENANT REQUESTS

3-102.1 Referral to GSA

All requests for normal building services are made to the USPS building manager. In buildings where GSA acts as the USPS leasing agent for other federal agencies, refer their requests for work which is not included in the standard level of service, and is not USPS responsibility, to GSA. Non-Federal tenants are responsible for their own special services. Non-Federal tenants leasing under a sublease or outlease agreement are not permitted to make improvements, alterations, or repairs to occupied space unless approved by the contracting officer. All requests of this nature must be referred to the appropriate Facilities Service Center.

3-102.2 Tenant Control

All contacts with the USPS building managers having to do with tenant requests for services or other building problems must be made through an authorized contact of the tenant. Each location maintains a file of authorized agency contacts.

3-102.3 Tenant Good Housekeeping

It is the responsibility of all tenants to practice good housekeeping and to exercise economy in the use of building utilities. (This includes turning off lights in unoccupied areas, and refraining from taping signs, posters, etc. to walls with tape that will remove the paint.) All occupants are required to comply with safety codes and the Rules and Regulations Governing Conduct on Postal Property which are listed in Postal Operations Manual, 221.6 and on Poster 7. USPS building managers are responsible for informing tenants of any poor housekeeping practices, uneconomical operations, and any violations of the rules and regulations governing the operation of the buildings. This must be done courteously and in a spirit to encourage the cooperation of occupants. The building manager or Postmaster must ensure that Poster 7 is posted in centralized locations within the building for tenant and customer information.

3-103 PUBLIC RELATIONS

The maintenance of good public relations is essential. The following functions of the building managers in the area of public relations are very important in developing a public image and should be performed so as to inspire confidence and respect for the USPS.

a. Public Use of Building and Grounds - Administers policies, regulations, and procedures governing the public use of USPS buildings and grounds.

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.

c. Communications Equipment - Telephones, telegraph, teletypewriter, data transmission circuits, facsimile, cable, and radio.

d. Automatic Protection Systems - Installation, operation, and maintenance of burglar alarms and other automatic protective devices and systems for security protection due to the special nature of an agency's activity.

e. Utilities - Utilities for specialized installations, such as cafeterias and lunch stands (except authorized stands operated by the blind); printing, duplicating, and photographic plants; and laboratories.

f. Special Equipment - Construction, installation, operation, maintenance, and repair of special equipment; space adjustments required in buildings as a result of such installations.

g. Exhibits - Construction, installation, and maintenance of exhibits.

h. Special Cleaning - Washing and polishing furniture and cleaning the inside of file cabinets, bookcases, desks, and other personal property.

i. Special Purpose Space - Space adjustments in buildings for scientific, laboratory, computer, or other specialized purposes, including installation of ventilating, temperature, and humidity-control equipment and special lighting.

j. Services of Technicians - Services of motion-picture equipment operators and other technicians required in the use of auditoriums, conference rooms, and special tenant projects.

3-203 SERVICES NOT AVAILABLE FROM USPS

The following services are strictly the responsibility of the tenant and are not available from the USPS.

a. Furniture and Furnishings - Tenants are responsible for financing and procuring their own furniture and furnishings. GSA is responsible for furniture and furnishings for the U.S. Courts and Members of Congress. Drapes are considered furnishings even when installed in lieu of blinds and shades. Carpeting is normally considered a furnishing. An exception to this may be made if nominally priced carpet is installed in lieu of replacing other types of floor coverings.

b. Flags - Agencies requiring flags for their offices may purchase them from the Federal Supply Service. Postmasters at CAG A through K offices and CAG L offices located at county seats must cooperate with the Veterans' Administration to act as depositories for burial flags. Burial flags, application forms, and the rules governing flag issue are supplied by the Veterans' Administration (see ASM 440 for instructions).

c. Air-conditioning, Fans, and Water Coolers Financed by Tenants - Where air-conditioning, fans, and water cooling units are not furnished by the USPS, such equipment may be purchased, and accountability therefor retained by the occupant tenant, when its installation is approved by the USPS building manager. Where approval is given for installation of occupant-owned

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.

RULES GOVERNING AUDITORIUMS, CONFERENCE ROOMS, OTHER MEETING PLACES

1. SCOPE

This regulation prescribes guidelines and rules to be followed by the Postal Service and its tenants in permitting the use as meeting places of auditoriums, conference rooms, and any other space within the periphery of the property lines of the Postal Service-owned or -leased buildings or portions thereof.

2. AUTHORIZED AND PROHIBITED USES

a. For the purposes of this regulation, a "recognized" group or organization is a labor organization recognized by the Postal Service under the President's Executive Orders governing employee or labor management relations, or an organization that has been in existence at least three months which has been specifically recognized in writing by the Postal Service or tenant agency as an organization whose purpose is to promote the social, health, welfare, or employment interests of the agency's employees.

b. Except as provided in paragraph (c) of this section the Postal Service and agencies having exclusive use of and/or exercising authority over meeting places may permit their use for:

(1) Meetings to carry out the assigned functions of the Postal Service or tenant agencies.

(2) Meetings of recognized Postal Service and Federal employee groups and organizations, including retired employee groups.

(3) Meetings conducted by or actively participated in by employees of the Postal Service or agency and approved by the building manager and the head of the agency.

(4) Presentation to the public of lectures, concerts, or similar performances by the Postal Service or a Federal agency or at which its employees participate in an official capacity, or for the presentation of such a performance by a recognized employee group.

(5) Meetings or performances not directly related to the functions of the Postal Service or Federal agencies or activities of employee groups when authorized by the Postal Service building manager and the head of the Federal agency occupying the building and controlling the use of the meeting place, and such manager and agency head determine that such meetings or performances would not adversely affect the interests of the Government. (See paragraph 5 concerning possible reimbursements.)

c. Meeting places may not be used for:

(1) Meetings or performances sponsored or conducted by any organization, individual, or activity practicing or advocating discrimination based on race, creed, color, sex, or national origin.

(2) Meetings or activities having a partisan political, sectarian, or similar nature or purpose.

Figure 3-1 (p. 1)

(3) Meetings or activities for the purpose of advocating or influencing action on legislation.

(4) Meetings or activities sponsored or conducted by or for commercial enterprises for profitmaking purposes through (a) the direct sale of articles, (b) charging admission fees or making an indirect assessment for admission, or (c) taking a collection.

d. All requests for meeting places must be in writing addressed to the Postal Service building manager or the head of the occupying agency. Such requests must state the date, time, purpose of meeting, the name and description of the applicant organization, the estimated number of persons expected to attend, the duration of the meeting, and the meeting place requested.

e. Excluding meetings to carry out the assigned functions of the Postal Service or Federal agencies, meeting places will not be available during official working hours of the occupant agencies except for one hour during the normal luncheon period.

3. SCHEDULING

Generally, no meetings may extend beyond midnight or be scheduled for Saturdays, Sundays, holidays, or other days during which the building is ordinarily closed.

4. CONDUCT

All persons attending meetings or performances are subject to the rules and regulations governing conduct on postal property contained in POM 221.6.

5. PROVISION OF SERVICES AND EQUIPMENT

Special building services, such as (but not limited to) projectionists to operate installed equipment, guards, elevator operators, or additional utilities when required to supplement normal building services or outside regular building hours, will be provided to the extent available, if requested by the agency, by the Postal Service building manager on a reimbursable basis. The applying or sponsoring Federal agency or activity is responsible for furnishing program requirements, such as music racks, ushers, cloakroom attendants, and tickets.

6. SUPPLEMENTARY DIRECTIVES

The Postal Service may supplement these rules by issuing procedures, instructions, and any necessary forms which apply to specific areas used for meeting places. Supplementary procedures, instructions, and forms should be consistent with these rules and cover such items as: how to apply for permission to use the facilities; how much detail is required to describe the proposed use or program to be presented; who is authorized to request, and who grants the permission; priorities of use; reimbursement requirements; records of use; and any other conditions which may be applicable to a given location.

7. IMPLEMENTATION

Agencies having exclusive use of and/or exercising authority over auditoriums, conference rooms, and other meeting places within the periphery of the property lines of the Postal Service-owned or -leased buildings may also supplement these regulations by issuing procedures, instructions, and any necessary forms (consistent with these rules) which apply to such areas.

Figure 3-1 (p. 2)

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3-3 FIRE SAFETY REGULATIONS

3-301 PUBLISHED REGULATIONS

The fire safety regulations to be observed in buildings operated by the USPS are set forth in Figure 3-2.

3-302 THE BUILDING MANAGER'S RESPONSIBILITIES

It is the building manager's obligation as a USPS representative responsible for the facility to ascertain that these regulations are followed, to request and promote compliance with the regulations by tenants, to report to higher authority any noncompliance which cannot be corrected at the local level, and to call for such technical or administrative assistance as is needed.

3-303 TECHNICAL REFERENCE

The policy for fire prevention, extinguishment, and control is found in ELM 850. Technical assistance can also be found in HBK EL-801, Supervisor's Safety Handbook, Chapter VII. Additional information about fire extinguishing equipment is contained in HBK MS-56.

3-304 NONCOMPLIANCE SITUATIONS

To the maximum extent possible, the building manager will obtain voluntary compliance from the occupant agencies. In any case where voluntary compliance is not obtained, the problem is forwarded to progressively higher levels until resolutions are obtained. In no case may building managers conclude that their responsibility terminates when they have informed the occupant of the problem. They must pursue the matter until it is either corrected or transferred to a higher level for action.

3-4 PARKING

3-401 SPACE ALLOCATION

The USPS is responsible for determining what space in and around existing properties under its custody and control may be used for vehicle parking. The Postmaster makes this determination at each location, pursuant to and consistent with the provisions of Article XX of the current National Agreement.

3-402 PRIORITY ASSIGNMENT

The priorities for assignment of parking spaces are determined by local management.

3-403 LAYOUT

3-403.1 The best parking arrangement varies for each parking site depending upon its location, configuration of land and building, safety requirements, whether or not block parking is required, and other factors. Therefore, each parking site should be carefully studied and planned so that layouts include consideration of the pertinent factors. Normally, individual parking spaces are 9 by 20 feet and access lanes are 20 feet.

3-403.2 Proposed parking layouts must be reviewed by the local safety officer to ensure compliance with sound safety and fire prevention practices.

3-404 AGENCY ASSIGNMENT

When allotment of parking areas is made to tenants, the tenants make the individual space assignment.

FIRE SAFETY REGULATIONS

1. DEFINITIONS

a. *Flame-retardant.* For the purposes of this section the term *flame-retardant* means fabrics or films (e.g., thin plastic sheets and cellophane) that are difficult to ignite, do not spread flame beyond the area exposed, and do not drop flaming parts. Flame-retardant materials must meet the performance described for the small scale test in National Fire Protection Association Standard No. 701, "Standard Method of Fire Test for Flame-Resistant Textile Fabrics or Films." Fabrics or films tested by the National Bureau of Standards or an independent laboratory meeting the above requirements using the small scale test as described in NFPA Standard No. 701, or using the test method described in Method No. 5903, Federal Specification CCC-T-191b. Textile Test Methods are flame-retardant by this definition. In addition, materials labeled as flame-retardant fabrics by Underwriters' Laboratories, Inc., conform with this definition. In any instance where flame-retardance has been provided by chemical treatment, retesting is required after each laundering or cleaning.

b. *Noncombustible.* For the purposes of this section the term *noncombustible* includes all of the following:

(1) Those materials universally accepted as noncombustible such as iron, steel, aluminum, brick, concrete, glass, and plaster. Such materials are accepted as noncombustible without proof.

(2) Rigid materials, all surfaces of which have fire hazard ratings not exceeding 25 for flame spread and 100 for smoke development when tested in accordance with American Society for Testing and Materials, Test E 84, Surface Burning Characteristics of Building Materials. For materials to be in the building permanently or for extended periods of time, the fire hazard rating requirements also apply to any core materials. Materials bearing the label of Underwriters' Laboratories, Inc., as having flame-spread ratings of not over 25 and smoke-development ratings of not over 100 meet these requirements.

(3) Fabrics and films which do not burn, propagate flame, or drop flaming particles when tested in accordance with paragraph (a) of this section.

Noncombustible fabrics may be determined by the use of the test method described in paragraph (a) of this paragraph or identified if labeled as noncombustible fabrics by Underwriters' Laboratories, Inc.

2. EXITS

All exits, accesses to exits, and accesses to emergency equipment shall be accessible and clear at all times the building is open for business.

3. HOUSEKEEPING AND ORDERLINESS

Each agency shall maintain its assigned space and conduct its operations in such a manner as to maintain a neat and orderly facility, avoiding increased potential of fire initiation, fire propagation, or fire severity.

4. OCCUPANCY HAZARDS

Hazardous, explosive, flammable, or combustible materials which exceed those normal to the type of operation indicated in the agency's initial space assignment shall not be brought into the building or shall not be utilized unless authorized by the Postal Service, and until any additional protective procedures, arrangements, or devices determined by the Postal Service to be needed have been provided.

5. DRAPERIES AND CURTAINS

All draperies, curtains, and similar hanging materials shall be of a noncombustible or flame-retardant fabric.

6. DECORATIONS AND DISPLAYS

a. Decorations and displays within assigned space shall conform to the general use of space, as appropriate. Where large groups of persons are expected to view displays, adequate provision shall be made for emergency egress.

b. Except as noted in subparagraphs (1) through (3) of this paragraph, all decorations and displays in corridors, lobbies, or other public spaces and in cafeterias, auditoriums, or other places of assembly shall be constructed of noncombustible or flame-retardant materials

Figure 3-2. (p. 1)

and kept completely free and clear of any exit or access to an exit.

(1) Limited amounts of combustible or flammable materials shall be permitted for small displays or for elements in larger size displays where, in the judgment of the Postal Service building manager, such materials do not present a hazard to life or property.

(2) Traditional Christmas decorations on office doors may contain limited amounts of combustible or flammable materials.

(3) Natural Christmas trees may be brought into buildings for not more than 2 weeks provided they stand in water, are clear of any exitways or exit lobbies, and are not over 4 feet in height except as noted in subdivisions (4) and (5) of this subparagraph. Noncombustible artificial Christmas trees are permitted in any size provided they do not interfere with any exit or access to an exit.

(4) In any building lobby where a Christmas tree has traditionally been placed, the building manager may permit the use of a natural Christmas tree exceeding the 4-foot limitation provided the tree is cut on or after December 1, the tree stands in water, the position of the tree is clear of exit routes by a distance equal to the height plus 6 feet, there are no other combustibles in the area likely to be ignited by fire in the tree, and the maximum height of the tree does not exceed two-thirds the ceiling height. No tree shall, however, exceed 15 feet in height.

(5) If the requirements of any ordinance or regulation, as applied to natural Christmas trees in non-Federal buildings or private office building within the local jurisdiction, are more restrictive than this regulation, those requirements shall be considered a portion of this regulation.

c. Decorations and displays shall not involve lighted candles or other open-flame or high-heat-producing devices unless such use is determined safe by the Postal Service building manager.

7. MOVABLE PARTITIONS

a. All newly installed or relocated movable partitions, including partial-height (bank-type), shall be noncombustible.

b. Installed movable partitions which contain combustible components do not require immediate replacement except where serious hazard to life exists from smoke or fire.

c. Replacement of movable partitions or combustible components, including translucent plastic panels in bank-type partitions, is the responsibility of the user. A long-range program for minimizing fire hazards shall be instituted in locations where such partitions or components exist, in the following order of priority:

(1) Along egress paths in nonsprinkler-protected occupancies.

(2) Along egress paths in sprinkler-protected occupancies.

(3) In offices having floor areas of more than 1,000 square feet located on or below the middle story of buildings 10 stories or more in height where the occupancies are not sprinkler protected.

(4) In other offices having floor areas of more than 1,000 square feet which are not sprinkler protected.

(5) In offices having floor areas of 1,000 square feet or less located on or below the middle story of buildings 10 stories or more in height where the occupancies are not sprinkler protected.

(6) In offices having floor areas of more than 1,000 square feet which are sprinkler protected.

(7) In offices having floor areas of more than 1,000 square feet or less which are sprinkler protected.

8. REGULATION OF SMOKING

Each agency shall post and enforce "no smoking" rules in any location involving flammable liquids, flammable gases, or flammable vapors, or in other locations where there is a collection of readily ignitable combustible materials. Adequate noncombustible ash trays or receptacles shall be provided in locations where smoking is permitted.

Figure 3-2 (p. 2)

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

installed at the time of construction. In other USPS-owned, -leased, and -operated buildings, such boards as are needed will be provided.

3-501.3 Information Contained

Directory boards should contain the names of organization subdivisions and principal officials of the tenants. This information should be displayed according to the wishes of the tenants, subject to the approval of the building manager and the limitations of the boards.

3-501.4 Changing Information

The building manager directs the placement of the information on the directory boards in a building and makes necessary changes and modifications.

3-501.5 Service by Lessor

Directory boards in a rented building in which only a part of the space is under the jurisdiction of the USPS are under the control of the lessor. Appropriate material for insertion in such boards may be transmitted to the building manager who has jurisdiction over the space, and who arranges with the lessor to have it displayed.

3-502 BULLETIN BOARDS

3-502.1 In USPS Space

The provision of and posting on bulletin boards is covered in ASM 340 and Article XXII of the current National Agreement.

3-502.2 In Tenant Space

Bulletin boards in tenant space should be provided at the tenant's request. Such boards are usually the open type, wall-mounted or free-standing, and of simple design and color to harmonize with the location. The costs of such installations are generally reimbursable by the tenants. These boards are under the tenants' jurisdiction, but material for posting should, in general, conform to the requirements stated in POM 221.5, and to the following:

a. It must be posted in a neat and orderly manner.

b. It must be removed after being displayed for a reasonable length of time.

c. It is subject to periodic review by the USPS building manager. If any of the posted material is found not to comply with the above or is deemed to be objectionable in any other respect, the building manager must request the tenant to remove the offending material promptly.

3-503 DOOR TITLE CARDS AND HOLDERS

3-503.1 Provision of Cards

Identification cards and door titles are provided by the USPS at no cost to the tenant when the building is operated by the USPS. The holder is also supplied free of charge. The present door card system for room and occupant identification will continue except as provided in Section 6.

3-503.2 Tenant's Requests

Tenant's contacts requiring room identification must submit their requests to the building manager for that building on their letterhead stationery showing the exact lettering desired. The name of the operational unit which is occupying the room is usually sufficient. Occasionally, it may be desirable to list the name of the chief of the unit also. Avoid lettering painted on doors.

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) All appliances will be installed on a noncombustible base composed of, or covered by, sheet metal of a thickness of not less than 24 U.S. gauge.

(4) Automatic coffee makers bearing the label of Underwriters' Laboratories or another approved testing laboratory may be plugged directly into existing convenience outlets, if the circuit has sufficient capacity.

d. Sanitary Requirements - The building manager specifies how to dispose of coffee grounds. No objectionable food odors or accumulation of dirty dishes is permitted. All equipment must be kept clean and in reasonable repair. Stores of sugar, cream, and similar items must be kept in tightly closed containers.

e. Reporting Violations - USPS employees must report any observed violation of these requirements to the building manager.

3-505 EQUIPMENT LOANED BY USPS

3-505.1 Loaning Equipment

As a general rule, the building manager may not loan any equipment to tenants. Loans are made only by written request, when it is clearly in the interest of the Government and/or essential to the safety and welfare of employees or the public.

3-505.2 Documentation

Whenever equipment is loaned to tenants, the acquisition and control unit must document the transaction to show receipt for the property and make the proper accounting entries. Records of equipment loaned to tenants must be maintained on Form 1590, Supplies and Equipment Receipt, and segregated in a separate file titled "Equipment on Loan to Tenants." The name of the borrowing tenant is designated as the accountable officer.

3-6 MISCELLANEOUS

3-601 FURNISHING ASSISTANCE TO TENANTS

When tenants request technical advice on building operation or service arising in connection with their own operations and not related to USPS responsibilities, furnish such advice under the following conditions:

a. Nonreimbursable - The service is provided without charge if the time required is only a few hours and the service is principally giving advice.

b. Reimbursable - In most instances reimbursable services to tenants such as space alterations, preparation of special equipment, and furniture repair should be furnished by GSA in accordance with Section 3-202. However, such services may be furnished by the USPS on a reimbursable basis when the following conditions are met.

(1) The furnishing of such services is clearly in the best interest of the USPS.

(2) USPS resources are available to provide the services without adversely affecting postal activities.

(3) Any alterations which may affect the rental rate agreement with GSA must be fully coordinated with GSA before proceeding.

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

maintained. Those readings are the basis for tenant reimbursement to the USPS for additional utility cost. The tenant bears the cost of the submeters as part of the special equipment installation cost. This requirement may be waived if the additional utility cost can be estimated and the rental rate adjusted to reflect this additional operating cost.

3-604 KEYS

Procedures for key control and issue are in the ASM 273.5.

3-605 LOSSES, THEFTS, AND ARTICLES FOUND

Building security and other USPS representatives must assist building occupants in matters pertaining to losses, thefts, and articles found. Every effort must be made to return found articles to their rightful owners, or to safeguard them for a reasonable time pending claims by the losers. In handling such articles, follow the procedures in ASM 220 to assure accountability and proper identification.

3-606 MOVING

3-606.1 Nonreimbursable

Office equipment, furniture, furnishings, and other personal property will be moved when required as a result of moves ordered by the USPS in the assignment, reassignment, and control of space.

3-606.2 Reimbursable

Moving services required by a tenant for its convenience are funded and accomplished by GSA or the benefiting tenant. The USPS will not provide the work force for this even on a reimbursable basis.

3-607 OFFICE MACHINE REPAIRS

3-607.1 USPS Machines

Office machines, typewriters, calculators, adding machines, reproducing equipment, etc. used in USPS offices must be repaired as prescribed locally, either by contract or by USPS personnel.

3-607.2 Tenant Machines

Tenants are responsible for arranging for repair of their own machines.

3-608 NONPOSTAL DISPLAYS

3-608.1 USPS Buildings and Grounds

The use of USPS buildings and grounds for displays for other than official purposes is not permitted.

3-608.2 Nationally Recognized Holidays

Employee groups are permitted to erect holiday displays within their assigned office areas. All such displays must be erected at no cost to the government, in a way that will not interfere with postal business, and that meets the fire and safety requirements of 3-3.

3-608.3 Displays in Postal Lobbies

Regulations governing use of lobby space, including space for displays sponsored by other government agencies are found in POM 221.5.

3-608.4 Recruiting Signs

a. Provide for directory service and for the display of signs advertising the presence of Armed Forces recruiting office(s) within the building.

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.

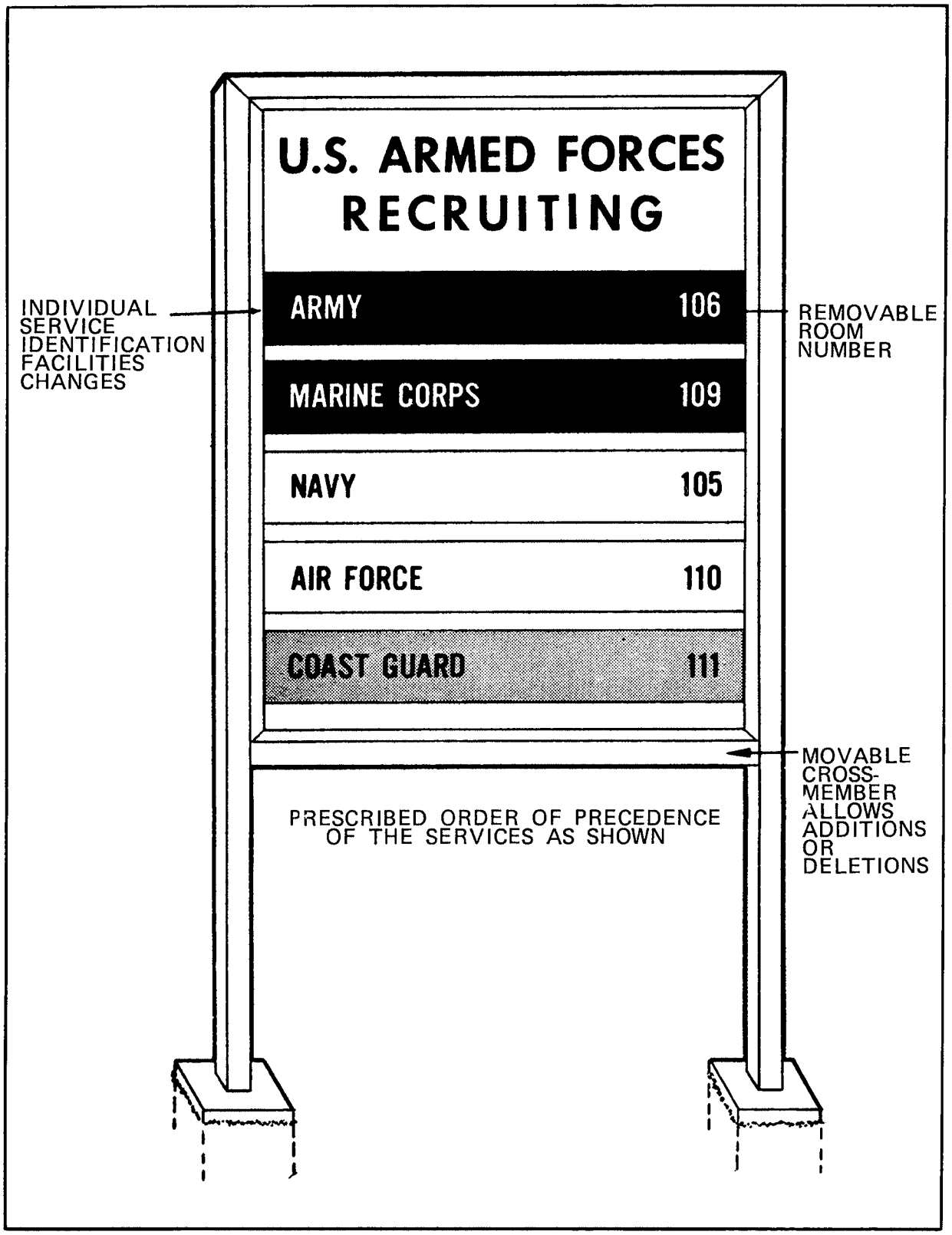

Figure 3-3. STANDARD ARMED FORCES RECRUITING SIGN

Figure 3-4. ALTERNATIVE ARMED FORCES RECRUITING SIGN

3-609.2 Existing Facilities

Existing private toilet and/or shower facilities, for officials who would not qualify under the above criteria, should not be removed unless it becomes necessary in the reassignment of space.

3-610 PROPERTY PASS

3-610.1 Optional Form 7, Property Pass, Figure 3-5, is prescribed for use by all agencies requiring a pass for the removal of tenant-agency-controlled Government property from USPS buildings. The form may be used for the removal of personally owned property when under security regulations. It is to be filled in and signed by the person authorizing the removal of the property. The person authorized to remove the property is to surrender the pass to security when leaving the buildings.

3-610.2 The disposition of the pass after collection by security is a matter of administrative determination to be made by the using agency.

OPTIONAL FORM 7
NOVEMBER 1950
PRESCRIBED BY GSA
FPMR (41 CFR) 101-19.108

PROPERTY PASS

1. DATE ISSUED

This pass is to be used whenever property is removed from the building. It is to be properly filled in and signed and handed to the guard when leaving the building.

2. NAME
3. BUILDING
4. DESCRIPTION OF PROPERTY BEING REMOVED
5. PROPERTY BELONGS TO
6. DEPARTMENT OR AGENCY
7. SIGNATURE OF PERSON AUTHORIZING REMOVAL OF PROPERTY
8. TITLE
9. PASS GOOD UNTIL

Figure 3-5. PROPERTY PASS

3-611 EMERGENCY PREPAREDNESS

The requirements for contingency planning are found in ASM 280-285. Additional guidelines are in ELM 519.22.

3-612 RESTROOM FACILITIES

Restrooms off public corridors are normally kept open during regular hours of business for the benefit of the public. Where vandalism or loitering cannot be controlled, postmasters may lock restrooms, furnishing keys for employees of those agencies served by the restrooms. This must not be construed to permit access by nonpostal personnel to restrooms in restricted postal areas.

3-613 VOTING IN USPS FACILITIES (BUILDINGS, SPACES, AND GROUNDS, BOTH LEASED AND OWNED)

3-613.1 Requests to use USPS facilities for voting purposes in a primary or general election may be considered under the following guidelines:

a. The USPS facility must be the only place in the area that is reasonably available for voting.

b. The USPS facility must be used "as is" and must not be materially altered to accommodate voting equipment, voters, or workers.

c. The Postal Service must not be required to provide any assistance in the installation or removal of items needed for voting.

d. Voting must be conducted in a manner that does not interfere with USPS business.

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.

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SECTION 5

GROUNDS AND APPROACHES

5-1 RESPONSIBILITY

5-101 SCOPE

5-101.1 This section deals with the topics that are typical of those encountered by personnel concerned with keeping the ground, approaches, roads, and parking areas around USPS buildings attractive and in an acceptable state of maintenance and repair.

5-101.2 The building manager shall regularly inspect these areas to assure that the required level of maintenance is being accomplished and to identify needed repairs. The frequency of inspection will vary with climatic, soil, and other local conditions, and shall be determined by qualified personnel.

5-101.3 Needed repairs beyond the capability of the local office shall be included in the repair and improvement program upon recognition of the need. The degree of urgency shall be noted to assure proper priority in the program.

5-102 LOCAL ORDINANCES

USPS management personnel must be fully familiar with all local ordinances which affect approaches, roads, sidewalks, and parking areas. The responsibility for maintenance and repairs should be resolved with local road and highway officials and documented to preclude future conflict of opinion concerning the scope of responsibility.

5-103 REPAIR RESPONSIBILITY

In most locations, the USPS is not responsible for the repair or replacement of public improvements such as curbing, gutters, and streets adjacent to USPS-owned property. In these locations the expenditure of funds for this purpose is not authorized. When repair or replacement is required, the appropriate local government officials should be notified. In locations where the USPS has these responsibilities, these areas shall be inspected at least once a year by the building manager or designee. If deficiencies are identified and the cost of making repair or replacement is within the Postmaster's spending authority, the Postmaster should arrange for the repairs to be made locally. If the cost is beyond the Postmaster's spending authority, the Postmaster should request assistance from the next level of authority.

5-2 GROUNDS

5-201 GENERAL

5-201.1 The building grounds shall be maintained, preserved, and upgraded as necessary. Work will include, but is not limited to, the planting of lawns, shrubs, and trees, and the continuation of an effective maintenance program of watering, fertilizing, mowing, and pruning. Screening of unsightly equipment and parking areas with trees, shrubs, hedges, or walls will be continued. Coordination of grounds upgrading plans with other agencies, local governments, and civic clubs is encouraged.

5-201.2 Method for establishing and maintaining such areas, whether performed by the local office or by

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

local government is unable to fund the repairs or replacement, the USPS may:

a. Reimburse the State or political subdivision.

b. Undertake the installation, repair, or replacement.

5-4 SNOW REMOVAL

5-401 In the areas where snow removal presents a problem, a snow-removal plan shall be established. Usually, it is advantageous to have a working agreement with local road and highway officials. In addition to practical advice, local highway officials may authorize the use of highway equipment to assist in snow removal under some conditions. The snow-removal plan shall specify areas to receive priority treatment, such as pedestrian loading zones, walks, main entrances, approaches, maneuvering areas, and parking lots.

5-402 Where snow removal has been assigned to postal employees, operating plans, organization of forces, and required instructions and training must be accomplished well in advance of the winter season.

5-403 All equipment must be repaired and ready for operation well in advance of the winter season. De-icing materials, tools, etc. must be ordered and available in amounts required for the full season.

5-5 SIGNS

5-501 GENERAL

Postmasters are responsible for establishing and maintaining the necessary signs within their areas. All signs serving the same purpose must be of the same design, color, and construction. Traffic signs, such as STOP, CAUTION, or DO NOT ENTER must conform to standards set by the Bureau of Public Roads for nationwide use. NO TRESPASSING signs are available from the FSS Catalog, National Stock Number 9905-00-559-2971. Be careful to properly position all signs to most effectively serve the purpose for which they are intended. Lighted signs or other signs not specifically authorized by this handbook or other directives are not permitted on or near the building. Signs must be inspected for required maintenance during the regularly scheduled inspections of grounds.

5-502 STRIPING OF PARKING AREAS

Parking areas should be striped to facilitate the orderly parking of vehicles and to accommodate the maximum number of vehicles. Each parking space, except for handicapped parking, should be 9' by 20'. Handicapped parking should be 13' wide, located convenient to the customer and employee entrances, and identified for use by the handicapped only. Reduced size spaces 8' by 15' should be used for compact cars to improve parking area utilization. Paint should be traffic grade, either white or yellow in color.

5-6 FENCES

Fencing requirements are determined at the division office level or above. The indiscriminate use of fences is not permitted. Fencing must be kept to the minimum necessary to provide adequate protection of USPS property and for the protection of the public from safety hazards.

5-7 PARKING AREA LIGHTING

All parking areas shall be adequately lighted. The level of lighting shall be in accordance with the lighting guidelines established by the USPS. (See HBK MS-49.)

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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

instances this information may be obtained from GSA for buildings it constructed or previously operated. Any plan for the placement of large concentrated loads (safes, large machines, stacks of paper, heavy files, mail handling equipment, nutting trucks, storage areas, etc.) shall be reviewed and approved by the building manager so that accidental floor overloading does not occur. Take advantage of the increased floor strength over a beam, close to a column, or near a load-bearing wall. If, in the layout of a space, heavy objects are involved and there is a question about floor loading, a structural engineer should be consulted before approving the arrangement.

6-303 ASHTRAYS AND SAND URNS

Wall-mounted ashtrays shall be provided in all elevator lobbies, entrance lobbies, and in the corridor immediately outside cafeterias, snack bars, courtrooms, and other similar high-usage areas. Units will have a closing cover that closes by spring or weighted hinge action. Units must be of stainless steel or of equally durable material in keeping with the interior decor of the building. Construction and finish must permit easy cleaning. All units will be mounted at a standard height of 40 inches from the floor to the top face of the tray. Sand-filled urns will not be purchased for use as ash receptacles and must be replaced with wall-mounted ashtrays on a practical schedule.

6-304 ROOM AND OCCUPANT IDENTIFICATION

6-304.1 Standardization

New buildings and buildings that undergo major renovations must be equipped with the types of signs described in HBK MS-54A, Graphics Handbook. Postmasters must be sure that this standard is met in all buildings for which they are responsible. Other types of nameplate holders now in use must be replaced with standard holders the next time the space undergoes renovation.

6-304.2 Numbering Interior Spaces

a. Space numbers are assigned to each separate subdivision of space on each floor. The first digit or letter denotes the floor. Use the following system:

   (1) B-1, B-2, etc., for basement spaces.
   (2) G-1, G-2, etc., for ground floor spaces.
   (3) 101, 102, etc., for first floor spaces.
   (4) M-101, M-102, etc., for mezzanine spaces above first floor.
   (5) P-901, P-902, etc., for penthouse spaces in 8-story buildings.
   (6) P-1001, P-1002, etc., for penthouse spaces in 9-story buildings.

b. Space numbers are assigned to stairways, elevators, and escalators. Use the following system:

   (1) Stair No. 1, 2, 3, etc.
   (2) Elevator No. 1, 2, 3, etc.
   (3) Escalator No. A, B, C, etc.

6-304.3 Occupant Identification

Occupant identification is normally restricted to the major organizational element occupying a room or suite of rooms. It is appropriate for the first line to contain an agency's major identification symbol or short title.

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.

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SECTION 7

CLEANING PROGRAM

7-1 INTRODUCTION

USPS cleaning standards and methods are specified in HBK MS-47, Housekeeping - Postal Facilities.

7-2 SERVICES PERFORMED BY CONTRACT

Contracts should not be entered into for cleaning space occupied by postal workrooms or areas occupied by other agencies which have high-level security requirements, unless approval is obtained on a case-by-case basis from an authorized official of the agency involved. The employment of an outside contractor to perform buildings services must be consistent with ASM 535.261. Contracting procedures are covered in Publication 41, Postal Contracting Manual. See ASM 535.26, and Management Instruction AS 530-81-17 for additional information on contracting cleaning services.

7-3 SPECIAL CLEANING PROBLEMS

7-301 DISPOSAL OF WASTE, SCRAP, AND REFUSE MATERIAL

7-301.1 Responsibility

Disposal of waste, scrap, and refuse material is normally the responsibility of the building manager. The responsibility for disposal of refuse in leased buildings depends upon the lease agreement. In connection with the operation of concessions facilities in buildings, refuse disposal is the responsibility of the concessionaire. However, the USPS will be responsible for removing trash generated by vending stands operated under the provisions of the Randolph-Sheppard Act. (See section 15.)

7-301.2 Salable Waste and Scrap

Scrap is sold in accordance with instructions contained in Handbook AS-701, Supply Management, part 782. However, the Postal Service may request GSA to dispose of salable waste, scrap, or personal property. If GSA agrees to this request, GSA may dispose of such property without charge to the Postal Service. GSA may not dispose of such property except by sale or transfer for the fair market value. The proceeds of such disposition are remitted to the Postal Service.

7-301.3 Refuse Removal

In USPS-operated buildings, refuse (trash or garbage) removal will normally be accomplished by contract. Where unusual operating requirements or local conditions suggest that this be handled by USPS employees, a thorough economical analysis must be made.

7-301.4 Incinerators

Where incinerators are installed, they must be operated and maintained to meet the State and local air pollution abatement standards. If the incinerators need modification to meet the standards, the divisional office must be advised so that the modifications can be made or the use of the incinerators discontinued. USPS employees are responsible for operation of incinerators. However, tenants may be required to furnish qualified personnel to destroy trash when the high security classification of the material warrants. Incinerators are

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

cleaned by scrubbing or hosing, and permitted to drain. The mats are available from commercial supply channels.

7-305 CLEANING SUPPLIES AND EQUIPMENT

7-305.1 General

Order cleaning supplies and equipment according to the instructions in Publication 24, Supply Catalog. A list of approved custodial products and equipment which have been tested and may be purchased locally is published periodically in the POSTAL BULLETIN.

7-305.2 Defective Supplies and Equipment

7-305.2.1 When defective or unsatisfactory supplies or equipment are received from GSA, the GSA Regional Federal Supply Service must be notified at the address shown on the catalog. If the supplies are received from the area supply center, notify the center. Include the following information:

a. A statement of why the merchandise is unsatisfactory
b. MILSTRIP/FEDSTRIP agency requisition number
c. National stock number
d. Merchandise description
e. Quantity received
f. Quantity on hand
g. Quantity defective
h. Contract number
i. Name of contractor
j. Purchase order number
k. Manufacturer's lot or batch number
l. Date material was received
m. Location of material
n. Supply point from which shipment was made
o. Name and telephone number of person to contact who is familiar with the problem

7-305.2.2 A GSA inspector should follow up to determine if the merchandise meets specification, and if not, the inspector should take corrective action.

7-305.3 Specification Changes

If the merchandise is found to meet the purchase specifications requirements but does not give satisfactory performance, or if the followup action by GSA is considered inadequate, notify MTSC, P.O. Box 1600, Norman, OK 73070-6706, so that the reason for unsatisfactory material can be evaluated and corrective action taken.

7-4 CLEANING EQUIPMENT

7-401 GENERAL

The trends to higher wages and more restricted cleaning staff make it imperative that adequate mechanical equipment be available. All cleaning activities must be mechanized to the maximum extent economically practicable.

7-402 MAINTENANCE

It is important that power equipment used in the cleaning program receive regular maintenance, both for preservation of the equipment and to assure that it is available for use when needed. Power cleaning equipment will be included in the Maintenance Management Program as described in HBK MS-63 and HBK MS-65. Preventive maintenance guidelines for select equipment is included in Chapter 13, Appendix B of this handbook. Because this type of equipment is usually procured, there is little standardization and little national maintenance documentation developed for the equipment. Manufacturer's literature containing recommended periodic maintenance practice, repair methods, and parts

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.

SECTION 8

ELEVATORS, ESCALATORS, AND DUMBWAITERS

8-1 OPERATIONAL REQUIREMENTS

8-101 HOURS OF SERVICE FOR ELEVATORS AND ESCALATORS

Automatic elevators which are equipped to shut down automatically during light traffic shall not be manually shut down at night or over the weekend unless a specific operating problem exists. Automatic cars without this shutdown feature, manually operated cars, and escalators shall be scheduled to provide service 30 minutes prior to the beginning of normal building hours, 30 minutes past normal quitting time for the occupants, and otherwise as might be required under special circumstances.

8-102 TYPICAL SERVICE REQUIREMENTS FOR ELEVATORS

Generally, the service in a building with a bank of three or more elevators can be considered adequate if the average waiting time at the terminal floor is not more than 20 seconds and if the longest waiting time at any floor does not exceed 60 seconds for more than 1% of the passenger trips. The service in three- or four-story buildings, with approximately 100,000 gross square feet or less, will usually be somewhat slower than that specified above since the cost of the installation usually precludes the installation of more than a single car or a two-car bank. See HBK RE-4, Standards for Facility Accessibility by the Physically Handicapped.

8-103 QUALIFICATIONS OF ELEVATOR OPERATORS

Where manually operated elevators are in use, the building manager is responsible for assuring that all full-time operators are sufficiently familiar with the operation of elevators to provide safe and efficient transportation of passengers (or freight). New employees or newly assigned operators must be given training or refresher courses as required for them to demonstrate proficiency in the work. Part-time operators (laborers, guards, etc.) and contract personnel where required, must also be given sufficient training to qualify them for operating an elevator. The criteria for determining the workhour requirements for elevator operators is found in HBK MS-63, Maintenance Management - Class A Offices, part 752 and HBK MS-65, Maintenance Management - Class B Offices, Section 616.2.

8-104 VERTICAL TRANSPORTATION EQUIPMENT IN LEASED SPACE

Responsibility for operation and maintenance of elevators and escalators in leased buildings is designated in the lease. When the USPS accepts the responsibility of the operation and maintenance of this equipment, all provisions of this section apply. Vertical transportation equipment in a leased building should satisfy required standards of operation and safety before the space is leased or an existing lease is renewed. If a building is under a long-term lease, efforts should be made to correct substandard conditions when they are discovered, rather than wait until the lease is due for renewal.

8-105 ADHERENCE TO CODES

All operation, maintenance, repair, testing, and inspection of elevators, dumbwaiters, and escalators must conform to the applicable sections of the

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

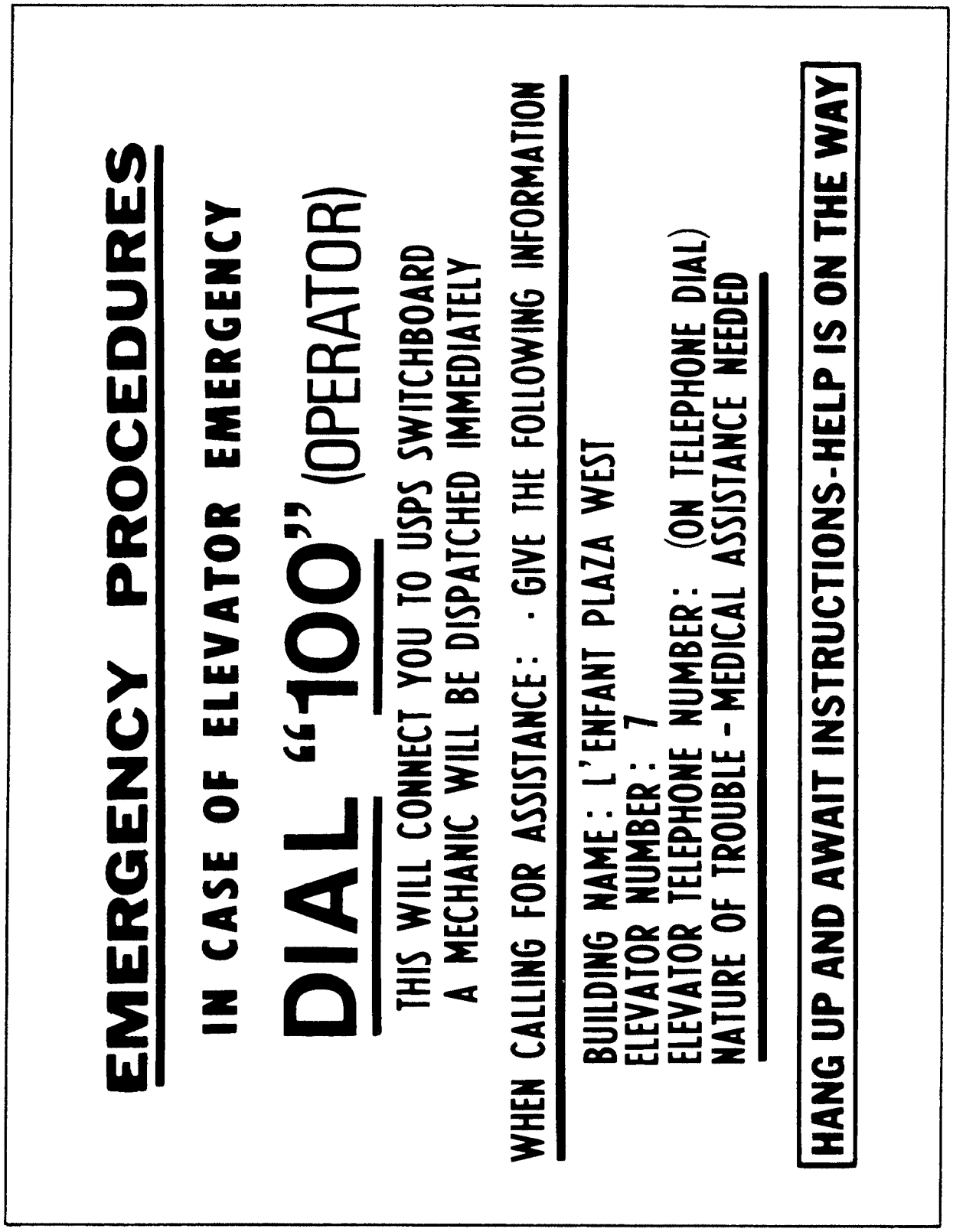


Figure 8-1. TYPICAL EMERGENCY INSTRUCTION

U. S. POSTAL SERVICE
ELEVATOR DATA CARD

INSTRUCTIONS: A separate card shall be maintained for each elevator. The card should be completed for each new elevator at the time of initial inspection.

DATE	REGION	ELEVATOR NO.	BUILDING	STREET ADDRESS	CITY, STATE AND ZIP CODE

TYPE OF ELEVATOR ☐PASS. ☐FRT. ☐SERV. ☐ESC. ☐D.W.	MANUFACTURER	LOCATION OF MACHINE	INSTALLATION DATE

TYPE OF POWER SUPPLY	CAPACITY LBS. PERSONS	SPEED (FPM)	SALES NUMBER	TYPE OF MACHINE

TYPE OF CONTROL	TYPE OF OPERATION	METHOD OF ROPING

TYPE OF CAR DOOR	TYPE OF HOISTWAY DOORS	INSIDE FLOOR DIMENSIONS	NO. OF FLOORS	NO. OF OPENINGS

MACHINE	MAKE	STYLE	SERIAL NO.	H.P. OR K.W.	SPEED	VOLTS	PHASE	CYCLES	AMPS	
HOIST MOTOR										
M. G. MOTOR										
M. G. GENERATOR										
EXCITER										

EQUIPMENT	MANUFACTURER	STYLE	SERIAL NO.	TYPE		
CONTROLLER						
SELECTOR						
BRAKE						
DOOR OPERATOR						
INTERLOCKS						
GOVERNOR–CAR					TRIPPING SPEED	FPM
GOVERNOR–CWT.					TRIPPING SPEED	FPM
SAFETY–CAR						
SAFETY–CWT.						
BUFFER–CAR					STROKE	FT.
BUFFER–CWT.					STROKE	FT.

PS Form 4813 - May 1974 *(Continue on reverse)*

WIRE ROPE

KIND	MATERIALS	NUMBER	SIZE AND CONSTRUCTION	INSTALLATION DATES					
HOIST									
GOVERNOR–CAR									
GOVERNOR–CWT.									
CAR–CWT.									
DRUM–CWT.									
COMPENSATING									

MAJOR REPAIRS OR ALTERATIONS

DATE	DESCRIPTION OF WORK	WORK PERFORMED BY

Reverse of Form 4813
Revised June 1986

Figure 8-2. ELEVATOR DATA CARD

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.

(2) Hoistway entrances and car doors or gates must conform to the requirements of the following rules of ANSI A17.1.

(a) Hoistway entrances, Section 110.
(b) Car doors and gates, Rules 204.6c and 204.6d.
(c) The brake can stop and hold the car with 125% of rated load (See Rule 207.8).

b. The following sign must be placed in those elevators that meet the requirements in a. above: "NO PASSENGERS EXCEPT EMPLOYEES PERMITTED."

c. The following sign must be placed in elevators that do not meet the requirements in a. above: "THIS IS NOT A PASSENGER ELEVATOR: NO PERSONS OTHER THAN THE OPERATOR AND FREIGHT HANDLERS ARE PERMITTED TO RIDE ON THIS ELEVATOR."

d. If freight elevators have not been previously certified to carry employees, granting permission to use them to transport employees is considered a major alteration and must meet the requirements of Rule 1200.2h of ANSI A17.1.

8-110 REQUIRED WORKHOURS FOR ELEVATOR OPERATION

Where maintenance personnel are required to operate manual elevators (not automatic) they must be as specified in part 752 of HBK MS-63.

8-111 USE OF ELEVATORS DURING EMERGENCY

Elevators must not be used during a fire, earthquake, or other emergency. This is necessary because of the high risk of elevator failure, stoppage, or power failure during emergencies, trapping persons in elevators and resulting in death or serious injury. Emergency contingency plans must not include use of elevators for evacuation of handicapped personnel or for other purposes. Automatic elevators equipped with emergency control as defined in ANSI A17.1 rule 211.3 must be operated by fire department only. The keys must be maintained by building maintenance personnel so that they will be readily accessible to fire department personnel but not available to the public. Instruct elevator operators in the following procedures:

a. Fire Emergency - Return nonstop to main floor (lobby) or other approved level and lock the elevator out of service.

b. Earthquake or Bomb Scare - Stop at nearest landing and lock elevator out of service.

8-2 MAINTENANCE AND REPAIR

8-201 MAINTENANCE

Vertical transportation equipment must be maintained and serviced according to this handbook and HBK MS-21, Elevator Maintenance. The preventive maintenance guides in Section 13, and the manufacturer's instructions can be used to develop the maintenance checklist. All maintenance supervisors and mechanics must be instructed in the following procedures:

a. All elevator maintenance, repairs, and alterations must comply with the Safety Code for Elevators, ASME/ANSI A17.1, and the National Fire Protection Association Code (NFPA) including NFPA 70 (National Electric Code) and those portions of NFPA related to fire-resistance ratings. All elevator mechanics must be fully aware of these codes,

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.

8-203 CONTRACT MAINTENANCE AND REPAIR

8-203.1 Contract or In-House Policy Guidelines

Whether to perform elevator maintenance with in-house personnel or by contract must be decided on a case-by-case basis. Various factors, including economics and capability of onboard personnel, must be considered. In-house maintenance cannot be implemented unless there is at least one fully qualified elevator mechanic available at each location to train other less experienced elevator mechanics for that location.

8-203.2 Elevator Maintenance and Repair Contracts

A standard elevator maintenance contract is available from the procurement office, see Regional Instruction 1035-PM-108, Filing No. 641, Solicitation Format and Specification for Elevator Maintenance Service. The building manager furnishes the physical data on elevators and other information such as dates of tests and special use of equipment. The building manager must have a thorough knowledge of the contract requirements necessary to exercise good contract surveillance as required by 8.203.4.

8-203.3 Special Contracts

Where unusual conditions warrant departure from the standard contract, the assistance of MTSC in revising specifications should be requested.

8-203.4 Contract Surveillance

The awarding of a contract for elevator maintenance does not relieve the USPS of the responsibility for safe, efficient elevator service. In fact, the additional responsibility of assuring that contractors perform the work for which they are paid is incurred. Therefore, a schedule of inspection and review of contractors' work must be established at each location. This surveillance is performed by maintenance supervisors who must receive special training in elevator maintenance to enable them to recognize deficiencies in contractor performance.

8-204 ELEVATOR MACHINE ROOM TEMPERATURE

Each machine room must be provided with ventilation, as required by ASME/ANSI A17.1. Special consideration may be necessary in machine rooms housing electronic elevator control equipment.

8-205 MACHINE ROOM HOIST

Machine rooms for two or more elevators should be provided with an overhead trolley hoist which terminates over the trap door to facilitate servicing heavy items of equipment.

8-206 MILEAGE INDICATORS

Mileage indicators are no longer required on elevators. Where indicators are installed, they should be used to aid in determining maintenance and inspection requirements.

8-207 MACHINERY LIGHTING

Machinery rooms and machinery space must be lighted to not less than 10 foot-candles at the floor. Elevator pits must be lighted to not less than 5 foot-candles.

8-3 INSPECTION AND TESTS

8-301 GENERAL

Elevators, dumbwaiters, and escalators must be inspected and tested as recommended in the American Standard Safety Code for Elevators, Dumbwaiters and Escalators, ASME/ANSI A.17.1. A certificate of inspection is issued or

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:

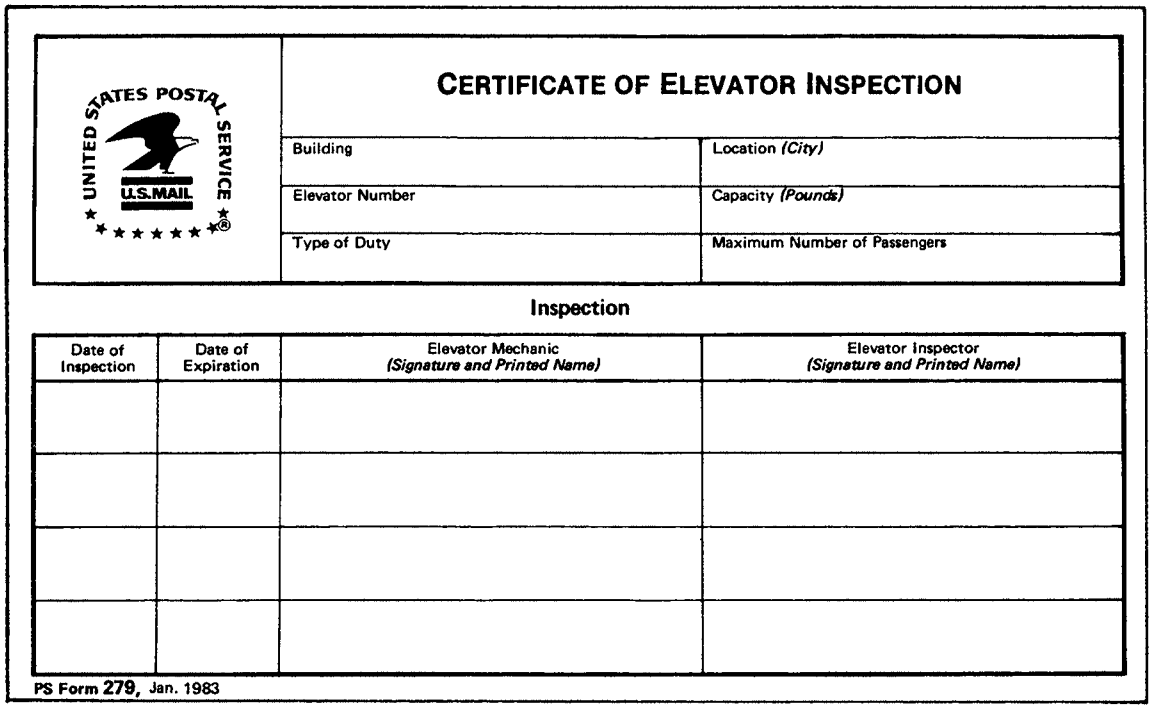
a. USPS personnel, GSA, or other Federal agency which has qualified elevator inspectors who regularly perform inspections of their own elevators. Names and locations of USPS elevator inspectors are identified in maintenance bulletins which are updated when necessary.

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.



UNITED STATES POSTAL SERVICE
U.S.MAIL

CERTIFICATE OF ELEVATOR INSPECTION

Building	Location *(City)*
Elevator Number	Capacity *(Pounds)*
Type of Duty	Maximum Number of Passengers

Inspection

Date of Inspection	Date of Expiration	Elevator Mechanic *(Signature and Printed Name)*	Elevator Inspector *(Signature and Printed Name)*

PS Form 279, Jan. 1983

Figure 8-3. CERTIFICATE OF INSPECTION

8-304.2 Dumbwaiters must be inspected once every year.

8-304.3 Periodic tests must be performed concurrently with inspections in accordance with ASME/ANSI A17.1.

8-305 SPECIAL INSPECTIONS

Special inspections must be made:

a. Immediately following a major repair, whether by contractor or by USPS employees.

b. After repeated service interruptions on the equipment.

c. Immediately after an accident or fire resulting in injury to persons or damage to equipment. See Supervisor's Safety Handbook, HBK EL-801, for reporting requirements.

8-306 INSPECTION CHECKLISTS

The following USPS checklists have been developed to assure adequate inspection. They must be completed by the inspector as indicated below.

a. Form 4086, Electric Traction Elevator Six-Month Test and Inspection Checklist.

b. Form 4087, Annual Test and Inspection Checklist Electric Traction Elevator.

c. Form 4088, Five-Year Test and Inspection Checklist Electric Traction Elevator.

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

the proper precautions are not taken. Therefore, the requirements of Appendix 8-A must be met.

8-402 TELEPHONES

Each elevator machine room and each car shall have a telephone connected to a central telephone exchange system if the elevator serves more than three floors. Telephone numbers will be included in the emergency instructions posted as required by 8-106g and Figure 8-1. If the installation of a telephone in elevator cars is impractical, other emergency signal devices meeting the requirements of Section 211.1 of ASME/ANSI A17.1 shall be installed and maintained.

8-403 AUXILIARY EMERGENCY STOP SWITCHES

Two auxiliary emergency stop switches shall be installed for every elevator; one on top of the car, and the other on the wall in the elevator pit. These switches provide emergency protection for a mechanic if the car moves when he is working on top of the car or in the pit. Therefore, these switches must be installed in accordance with the current edition of ASME/ANSI A17.1.

8-404 ELEVATOR AND HOISTWAY DOOR EMERGENCY KEYS

8-404.1 Hoistway Door Unlocking Devices and Access Keys

During normal operation, elevator hoistway doors are unlocked by a mechanism that is activated by the elevator car as it reaches the floor. Keys for manually unlocking hoistway doors are provided for some elevators to permit access to the hoistway for maintenance when the elevator car is not at the floor. The emergency doors in the car of an elevator are used only to permit departure of passengers from the car when exit through the conventional door is impossible. Keys for the hoistway doors and emergency doors serve only special purposes and have no function in the normal operation of the elevator. Serious consequences could result from improper or careless handling of these special-use keys. The manager shall safeguard them and limit their use strictly to the purpose for which they are intended. The keys shall be prominently labeled by attaching Form 4707, Out of Order, completed as shown in Figure 8-4. They must be kept in a "break glass" receptacle that is mounted in the security office, building manager's office, or postmaster's office. Qualified elevator mechanics responsible for elevator maintenance may be issued a set of these keys to be used in servicing the elevator. No other locations for these keys are permitted. Under no circumstances shall the keys be removed from their prescribed place, or used without the knowledge and consent of the building manager or his authorized representative.

8-404.2 Emergency Operation Keys

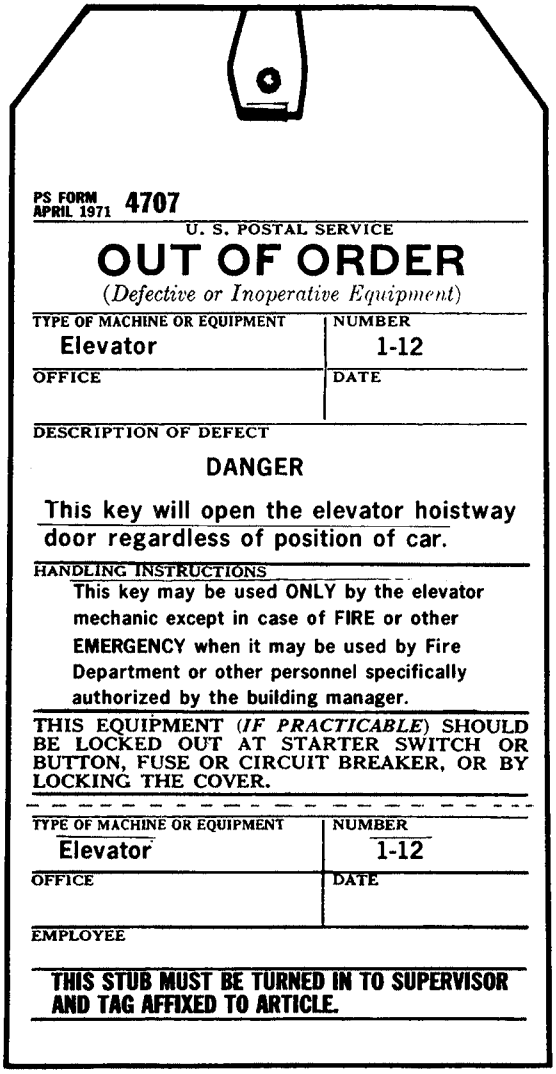
Where elevators are equipped with emergency service operations in accordance with Rule 211.3 of ASME/ANSI A17.1, the key(s) for this service must be safeguarded in the same manner.

8-404.3 Parking Device Key

If an elevator door is closed and locked when the car is at the landing, it must be equipped with a parking device that allows opening the door when the car is within the landing zone. Keys to such devices may be issued to custodians or other persons that have a need since they will unlock the door only when the car is in the landing zone.

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 4707
APRIL 1971
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

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APPENDIX 8-A

RELEASING PASSENGERS FROM STALLED ELEVATORS

1. GENERAL

This procedure for releasing passengers from stalled elevators shall be a part of the emergency contingency planning and training required by Section 540 of HBK MS-49, Energy Conservation and Maintenance Contingency Planning. Release of trapped passengers shall be accomplished only by qualified elevator mechanics or persons specifically trained in emergency procedures for elevators.

2. RELEASING PASSENGERS FROM A STALLED ELEVATOR

Elevators may stall as a result of power failure or malfunction of equipment. When this occurs, the following steps must be taken immediately.

a. Establish communication with the occupants of the car and assure them that:

   (1) Steps are being taken for their release.
   (2) They are safe.
   (3) They should stand clear of the door when it is opened.
   (4) They must not smoke.
   (5) They must NOT try to leave the car unaided.

b. Find out the following:

   (1) Number of persons in the car
   (2) Are any occupants in the car ill, injured or otherwise handicapped?
   (3) Are lights on?
   (4) The location of the car in the hoistway

c. Continue Contact

   Maintain communication while rescue is underway to keep the trapped occupants informed and reassured of their safety.

3. RESCUE PERSONNEL

Only experienced maintenance personnel who are specifically designated and trained shall attempt to release trapped passengers. The person in charge of the facility shall:

a. Designate persons to perform rescue duties on each tour.

b. Specify the responsibility of the designated persons.

c. Train the selected personnel in the rescue procedures to be followed under various situations for the particular building and equipment.

4. INSTRUCTIONS

Written instructions containing steps to be taken shall be furnished all persons designated to perform rescue duties. Telephone numbers of elevator maintenance personnel shall be included in these instructions.

5. RESCUE PROCEDURE

The preferred method for safe rescue of passengers from stalled elevators is to move the elevator to a landing. However, only a skilled elevator mechanic who is familiar with the equipment should attempt to move a stalled car by

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

APPENDIX 8-B

FORMAT FOR WRITTEN PROCEDURE ON REMOVAL OF PASSENGERS FROM STALLED ELEVATORS

(This is intended to be only a format. Exact procedures for each elevator or group of similar elevators must be prepared considering unique conditions.)

1. LOCATION: _____

2. APPLICATION: This procedure applies to elevator number(s) _____

_____ _____ _____ located in _____.

3. DESCRIPTION OF ELEVATORS:

a. Type _____ (passenger or freight)

b. Hoist machine _____ (electric traction or hydraulic)

c. Number of stops _____

d. Hoistway access _____ (indicate means of opening hoistway door; i.e., hoistway door unlocking device at each landing, etc.)

e. Emergency exits _____ (indicate side and top exit if they exist)

f. Type of emergency communication _____ (telephone or intercom)

g. Persons responsible for elevator maintenance _____

Telephone: _____

4. PERSONS TRAINED IN PROCEDURE BY SHIFT:

	Team Leader	Telephone Number	1st Alternate	Telephone Number	2nd Alternate	Telephone Number
Tour 1						
Tour 2						
Tour 3						

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.

REMOVAL OF PASSENGERS FROM STALLED ELEVATOR

PROCEDURES FOR ELECTRIC TRACTION 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. Contact with persons in the car must be continuously maintained. If this cannot be accomplished in approximately 30 minutes, proceed to Procedure II, III, or IV as appropriate.

Procedure II.

(Two-person Rescue Team.)

Application: The elevator is within 3-1/2 feet of landing and the hoistway door can be opened.

1. Open and lock main 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.)
4. If car is above the landing, protect the opening to the hoistway under the car with a board or a ladder. There have been instances where a person jumped from the car only to fall to his/her death under the car.
5. After the doors are propped open, verify that the stop switch is in the stop position.
6. Two persons should be at the landing and assist removal of the passengers one at a time.

Procedure III.

Side Emergency Exit (Three-person Rescue Team)

Application: The car is not near a landing and there is an adjacent operating elevator with side emergency exit.

1. Open and lock disconnect to the stalled elevator.
2. Have persons in the stalled elevator place the stop switch in the stop position.
3. Advise persons in the stalled elevator of rescue procedure.
4. Station person in machine room.
5. Put portable evacuation bridge in adjacent rescue car; two members of rescue team move rescue car even with stalled car.
6. Place stop switch in the rescue car in the stop position and have person in machine room open and lock disconnect to the rescue car.
7. Open both side emergency exits, install portable rescue bridge between cars; one member of the rescue party enters the stalled car with a safety belt.

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.)

4. If car is above the landing, protect the opening to the hoistway under the car with a board or a ladder. There have been instances where a person jumped from the car only to fall to his/her death under the car.

5. After the doors are propped open, verify that the stop switch is in the stop position.

6. Two persons should be at the landing and assist removal of the passengers one at a time.

Procedure III.

Manual Lowering Valve.

1. Open and lock electric disconnect to elevator machinery.

2. Maintain contact with persons in car and advise them that the car will move down, and they must stay away from the door.

3. Station rescue team member at the floor to which the car will be lowered.

4. Slowly open manual lowering valve allowing car to lower to the designated landing. (Lowering valve must be identified with a tag showing its purpose and method of operation.)

5. Person at rescue landing must open hoistway and car door, and provide or obtain any needed assistance.

Procedure IV.

Top Emergency Exit (Three-person Rescue Team)

Application: Procedures I, II, and 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 3 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 passenger from the car to the landing one at a time. Give priority to passengers who may need medical attention.

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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

provisions of the specification are applicable.

9-204 WORK ON SYSTEMS AND EQUIPMENT

Unless specifically authorized in writing by the Office of Maintenance Management, no USPS employee shall perform work on any energized power circuit where the voltage-to-ground exceeds 50V. This does not preclude testing performed by qualified electricians. If special conditions prohibit the deenergizing of the lines or equipment, the job shall be contracted. (See Appendix 9-A for minor exceptions.) Before working on deenergized lines and equipment, the electricians shall padlock the switch in an open position and personally attach to the opened switch Form 4811, Low Voltage Equipment Lockout Tag, or Form 4812, High Voltage Equipment Lockout Tag. Two or more electricians experienced in high-voltage work shall be present at all times when work is in progress if the voltage of the systems or equipment being worked on exceeds 600V. (See Appendix 9-A.)

9-205 LOCKING OF ELECTRICAL SPACES

All switchgear rooms, substations, transformer vaults, and switchboard locations shall be partitioned off and locked. Distribution panels and wire closets shall also be locked. Keys to these panels and closets may be furnished to authorized occupants if switching of lights or agency equipment must be done from these locations.

9-206 ELECTRICAL WIRE CLOSETS

No material or equipment may be stored in these closets. All panel, wire trough, trench, and junction box covers must be replaced immediately when work is completed. Cleanliness of these spaces is the responsibility of the properly trained building services and building equipment personnel.

9-207 GROUND PRACTICES

All noncurrent-carrying metal parts of the electrical system, including conduits, pull and junction boxes, switches, panelboards, switchboards, lighting fixtures, motors, generators, controllers, switchgear, and transformers, shall be properly and adequately grounded in accordance with the National Electrical Code. If equipment is not grounded or is improperly grounded, the building manager shall be notified. The purpose of an equipment ground on electrical apparatus or equipment is to minimize personnel shock hazard by restricting the voltage which may appear on noncurrent-carrying parts of electrical equipment in the event of fault.

9-208 IDENTIFICATION OF CABLES AND EQUIPMENT

Switches and circuit breakers shall be permanently marked for quick and easy identification of circuits or equipment supplied through them. All lead-covered cables, regardless of voltage, shall be marked with nonferrous metal tags stamped with the feeder or circuit number. These tags shall be placed on all cables in manholes, junction boxes, and other exposed points where they enter and leave cable shafts and cable rooms. Panelboard directories shall be typed and placed in all branch circuit panelboard cabinets, and shall identify the room and type of equipment. These directories must be kept current.

9-209 HIGH-VOLTAGE DUCT IDENTIFICATION

All underground high-voltage ducts within the building shall be marked

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

equipment in these categories on metered circuits. A monthly recording of cafeteria and kitchen power and computer systems submeter readings shall be kept. The operating engineer is responsible for keeping a monthly record of refrigeration submeter readings. The records are to be used for billing other occupants and the cafeteria operator, and in control of energy usage.

9-302 METERS, RECORDERS, INDICATORS, AND SUPERVISORY DEVICES

All devices of this type were installed to aid in the operation and maintenance of the building. They shall be kept in good operating condition.

9-303 HIGH-TENSION SYSTEMS AND EQUIPMENT

9-303.1 Responsibility

In most locations, the maintenance and servicing of the primary electrical service to buildings operated by USPS is the responsibility of the local power company. Where USPS has the responsibility, Headquarters Office of Maintenance Management should be contacted for procedures governing the operation of high-voltage equipment, the steps to be taken when clearing and restoring high-voltage units on all supply feeders and network systems, and special instructions for specific installations, as required.

9-303.2 Instructions and Procedures

Headquarters instructions on clearing and restoring high-voltage units together with one-line schematics shall be posted in each switchgear room and vault. The drawings shall be black line on white background and shall be protected to prevent vandalism or normal degradation. Two qualified people shall be present whenever maintenance or switching of high-voltage equipment is being performed, one to check the work of the other. In the event of a fire or similar emergency, necessary switching operations may be performed by one qualified person. Unqualified personnel shall not be permitted to work on high-voltage equipment. Admittance to spaces housing this equipment shall be limited to qualified personnel only. The telephone number of the utility company dispatcher shall be mounted, visible to the telephone in all switchgear rooms and transformer vaults. The service must be locked in a deenergized position and a Form 4812 placed on the disconnect device control before any work is performed.

9-304 TRANSFORMERS AND TRANSFORMER VAULTS

Liquid-cooled transformers installed inside buildings must be provided with a concrete curb not over 8 inches in height and of such size that it will contain all liquid in the transformer.

9-305 BRANCH CIRCUIT PANELBOARDS

When panelboards are installed or replaced in a building, they shall be of the automatic circuit breaker type.

9-306 FUSE-TYPE BRANCH CIRCUIT PANELBOARDS

This type of branch circuit panelboard shall not be installed in USPS-owned and -operated buildings. Fuse-type branch circuit panels are susceptible to overfusing and this creates a fire hazard. Most fuse or switch and fuse-type panels have a low interrupting current capacity.

9-307 BRANCH CIRCUITS

No branch circuit rated less than 20A shall be installed for general use. Branch lighting circuits of 120V must

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.

9-4 OPERATING EQUIPMENT AND SYSTEMS

9-401 FIRE ALARM SYSTEMS

Fire alarm systems are installed to alert occupants and responsible persons to a potentially dangerous condition and to permit evacuation of the building. Fire alarm systems are of two varieties: the manual system, which enables a person discovering a fire to call for help, and the automatic system which detects a fire and sounds the alarm. Where the fire alarm box does not signal a fire department or a continuously manned control center, a sign shall be posted adjacent to the box to instruct the person sounding the alarm to also notify the fire department. In localities where a special sign is required by code or local ordinance, it shall be posted. If the office does not have qualified personnel, preventive maintenance and repair work on the system should be contracted to firms who specialize in this kind of work. In offices having sufficient work to engage at least a major portion of one employee's time, one or more employees should be trained for it. Journeyman electrician skills should be sufficient to keep the fire alarm system in proper working condition. All parts of the system must be kept serviceable. If a fire alarm system must be taken out of service for any reason, all key personnel must be informed. Form 4707 must be displayed whenever any station is inoperative.

9-402 SECURITY SYSTEMS

Systems for security patrols are similar to fire alarm systems in that they vary from the simple key that punches a clock carried by security personnel, to the extensive system that is supervised at a central control desk. The electrical security systems are usually serviced by the same employee who services the fire alarm system. The circuits are similar and several of the principles of one apply to the other.

9-403 STORAGE BATTERIES

The care necessary for storage batteries is prescribed in HBK MS-11. Batteries used for electrical switchgear or building alarm devices shall be maintained in accordance with preventive maintenance guide numbers E-5 and E-6 in Section 13 and Form 4815, Storage Battery Monthly Record, Figure 9-3. Form 4815 is used to record the pilot cell voltage of these critical batteries.

9-5 LIGHTING

9-501 GENERAL

HBK MS-49 specifies the character of illumination, type of light source, lighting installation design, and lighting fixtures and installation criteria. Lighting projects for space not meeting the criteria should be included in the repair and improvement program. Any lighting installation by maintenance personnel must be designed and installed in accordance with the above standards. Lighting equipment will be installed to meet criteria; however, all current energy conservation instructions will be followed.

9-502 LIGHTING USE

Incandescent lights must be turned off when all room occupants leave. Fluorescent lights must be turned off if the room will be unoccupied for a period of 5 minutes or more. All room lights should be turned off by the occupants at the end of the workday. Custodians, security, and other personnel must turn lights on and off at night only in the immediate space in which they are working.

U. S. POSTAL SERVICE
STORAGE BATTERY MONTHLY RECORD

REPORT FOR *(month and year)*

INSTRUCTIONS

CELL VOLTAGE READINGS: Observe once each month, 10 to 20 minutes after starting equalizing charge. Read to hundreths as 2.29, 2.32. Use accurate voltmeter. If the difference between the highest reading and lowest reading is more than .10 volt, take a check set of readings and record in adjacent extra column.

EQUALIZING CHARGE: Give regularly once each month. One method for 60 cells is to raise bus to 140 volts for 8 to 24 hours, (preferably 24 hours). Then return to 129 volts for float.

CELL HYDROMETER READINGS: Observe all cells every three months, 15 to 30 minutes after completing equalizing charge. Record as read - do not correct for temperature.

CELL TEMPERATURE READINGS: Observe at same time as hydrometer readings but only in 2 or 3 cells in each row.

DUPLICATE BATTERIES: Where duplicate batteries are used, transfer load from one set to the other weekly. Keep record for both sets. Keep battery not in service on tricke charge where possible.

FILING REPORTS: Keep monthly record on file in group for one year.

MAKE AND TYPE	NO. OF CELLS	REGION

TYPE OF SERVICE	DATE INSTALLED	BUILDING

PILOT CELL READINGS * PILOT CELL NO. _____			INDIVIDUAL CELL READINGS *(See Instructions)*									
DAY	BUS VOLTS	HYDROMETER READING	CELL	VOLTS	HYDROMETER READING	ELECTROLYTE TEMP.		CELL	VOLTS	HYDROMETER READING	ELECTROLYTE TEMP.	
1			1					32				
2			2					33				
3			3					34				
4			4					35				
5			5					36				
6			6					37				
7			7					38				
8			8					39				
9			9					40				
10			10					41				
11			11					42				
12			12					43				
13			13					44				
14			14					45				
15			15					46				
16			16					47				
17			17					48				
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25			25					56				
26			26					57				
27			27					58				
28			28					59				
29			29					60				
30			30					61				
31			31					62				

RECORD OF WATER ADDED *(Add water before starting equalizing charge or after completing hydrometer readings)*

DATE				
TOTAL QUANTITY *(Qts)*				

DATE PREPARED	READINGS TAKEN BY *(Signature)*

PS Form 4815
May 1974

* Observe at same time daily

Figure 9-3. STORAGE BATTERY MONTHLY RECORD

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.

9-603 UTILITIES CONSERVATION

An integral part of the electric power reduction plan will be the utilization and conservation techniques contained in HBK MS-49. Particular attention should be given to the reduction of refrigeration compressor loads for air-conditioning and the maximum use of outside air to maintain reasonable interior temperatures within the building. This is especially true when the occupants are made aware of the fact that these conditions are temporary in nature and that a return to normal will be made when normal power can be restored to the building.

9-604 BASIC INFORMATION NEEDED

9-604.1 General

The electrical-mechanical equipment which can be shut down, or whose electrical requirements can be materially reduced, must be identified. This equipment includes both building and mail handling equipment under operational control of the USPS and equipment under the operational control of the tenants.

9-604.2 Building Equipment

Examples of such equipment are: refrigeration compressors; supply and exhaust fans; exterior, corridor, and general lighting.

9-604.3 Mail Handling Equipment

Equipment such as conveyors, sorters, etc., are large power users and essential to the operation. However, their operating time can often be reduced by shutting down when not actually in use or by rescheduling operations to less power-critical times. Also, lighting can be reduced in areas where no one is working.

9-604.4 Tenant Equipment

Examples of tenant equipment are: ADP equipment, copying machines, special purpose air-conditioning units, conference rooms and associated equipment such as projectors, and office lighting.

9-605 OCCUPANT COOPERATION

The head of each tenant organization, or appropriate local contact person, shall be advised of the need for such a plan, and that person's full cooperation solicited. It is most important that each tenant identify what equipment can be shut down and what equipment can have its electrical load materially reduced. Specific locations and the number of light fixtures which can be turned off are to be identified.

9-606 SUMMATION OF ELECTRICAL LOAD REDUCTION

A summary of the building and tenant equipment referenced above must be prepared, showing the approximate kilowatt rating for each item of equipment, and the total of all equipment. In this manner the total electrical load which may be reduced can be approximated. The priority or sequential order of equipment shutdown must be clearly indicated and followed when the plan is placed in action.

9-607 UTILITY COMPANY CONTACT

The USPS building manager must contact each electric company serving the buildings under the manager's administrative control and inform them of the arrangements to reduce the electrical loads therein should such reduction become necessary. Any agreements and all procedures resulting from these arrangements are to be confirmed in writing and approved by the divisional office. Electrical loads should not,

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.

APPENDIX 9-A

GENERAL GUIDE FOR ELECTRICAL EQUIPMENT MAINTENANCE

1. STANDARD WORK PRACTICES - ELECTRICAL EQUIPMENT

a. Basic Requirements

USPS employees may not work on circuits or equipment unless it has first been deenergized. If special conditions prohibit the deenergizing of the circuit or equipment, the job must be contracted to a public utility or other firms having the specially trained, experienced, and equipped personnel to perform the work safely. However, USPS employees may work on energized circuits when:

(1) Line-voltage, current, and similar tests are made by experienced electricians with proper instruments.

(2) The cutting lines are necessary in an emergency where there is no other means of disconnect, and proper emergency equipment is used.

(3) Fuses are replaced by means of proper fuse pullers in circuit of 150V or less.

(4) Low-voltage switching and disconnecting are performed, or high-voltage switching and disconnecting are performed. For purposes of electrical equipment maintenance, low voltage is less than 600V and high voltage is 600V or higher.

(5) Contract personnel are not obtainable in special situations, and it is necessary to maintain power on the system. In such situations, the building manager authorizes each job individually, and the following precautions must be observed:

(a) All work is performed by qualified personnel who are familiar with the National Electric Code and other applicable codes.

(b) All energized parts and personnel are effectively guarded by the use of protective equipment, such as rubber gloves, rubber blankets and floor mats, hotline tools, switchsticks, and testing and grounding devices to protect persons or objects from harmful contact.

(c) All protective equipment provided for use on energized lines or equipment is periodically examined, tested, and kept in a safe condition. Safety glasses must always be worn when working on energized circuits.

b. Locking and Tagging

(1) No person or crew may perform work on or close to a circuit until:

(a) The circuit is properly deenergized.

(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 lock 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.

(4) No work may be done near high-voltage lines, cables, or apparatus until specific safety instructions are obtained from the supervisor.

(5) No electrical apparatus of any kind may be cleaned until the equipment is deenergized and out of service.

2. PROTECTIVE RELAY MAINTENANCE

a. Application

Protective relays normally operate high-voltage (600 V or above) circuit breakers. The relays are designed to sense abnormal conditions and usually have a time-delay characteristic.

b. Maintenance Requirements

Preventive maintenance guides have been prepared for the types of relays that are normally found in buildings. However, because of the various types and models used, the manufacturer's instructions for each relay are absolutely essential for proper maintenance.

c. Maintenance Records

Records of relay maintenance, including test results and setting, must be maintained with the preventive maintenance records. The contractor may furnish these records on his forms.

3. CIRCUIT BREAKERS

The Preventive Maintenance Guide for the various types of breakers specifies the required maintenance and test. The manufacturer's instructions should always be referred to for specific information on each breaker. Breaker settings may not be changed from the original settings without an engineering evaluation. The curves from coordination studies should be used when available.

4. ACCOMPLISHMENT OF WORK

The cost to equip a shop to perform all of the tests specified on the electrical equipment guides would be in excess of $150,000. A very high degree of technical expertise is also essential. Consequently, most of this work is beyond the scope of the field office. Also, few offices have a work load concentration large enough to justify undertaking all of the work with postal employees. There are a number of companies that perform this type of maintenance by service contracts. Contracts should be awarded in accordance with existing requirements. The preventive maintenance guides are used as specifications and the required test records are completed by the contractor. Care must be taken to assure that the contractor has the technical competence to perform the work as specified.

5. SCHEDULING

All work must be scheduled at least 4 weeks in advance and coordinated with operating personnel so that the deenergized circuits will have the least effect on the operation. Work is scheduled on evenings and weekends when necessary.

6. RECORDS

Maintain records in a permanent file of test results for all electrical equipment.

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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,

the first step in correcting it is to check the air processing unit thoroughly. No changes should be made to the zone or room controls until all conditions are satisfactory at the air washer or handler.

10-107 VALVE SHUTOFF PRECAUTIONS

Shut off and tag all valves or controls regulating the flow of steam, condensate, refrigerants, and gas before disconnecting piping or working on equipment. Steam, gas, and refrigerant lines must be carefully examined before proceeding with the work to ensure that the valves are holding, that pressure is absent, and that the piping is properly drained or vented. Tags must be removed and service restored only by, or at the request of, the person who tagged the valves.

10-108 APPEARANCE OF MACHINERY SPACE

It is important that machinery spaces be kept clean and orderly; however, the use of manpower to maintain a highly polished, or showcase appearance, is discouraged. Each operator is responsible for cleaning an assigned space and leaving it in a presentable condition. The machinery spaces, particularly the floor, and the equipment in each space should be kept sealed or painted. Painting of this kind is performed by operating personnel as well as by regularly assigned painters. Nothing may be stored in machinery spaces without the knowledge and consent of the building manager, and even then storage in machinery spaces should be limited to those items that are used in the operation of the building. Operating supplies such as packing, lubricants, light bulbs, rags, and cleaners must be properly secured, kept in approved containers, and stored in accordance with all fire and safety requirements.

10-109 SMOKE CONTROL

State and local air pollution and smoke abatement regulations must be complied with in all cases.

10-110 CONSERVATION OF HEATING AND COOLING

Proper operating procedures will provide adequate environmental conditions with maximum economy. Criteria and techniques for conservation of utilities are found in HBK MS-49 and HBK MS-24.

10-111 CENTRAL CONTROL PANELS

Where central control panels for air-conditioning and heating systems are installed, they must be maintained in working order and fully utilized in operation of the building to reduce utility cost and operating workhours. When new control panels are being considered for facilities of 100,000 interior square feet, or larger, the installation of the USPS-designed General Monitoring System shall be given primary consideration. If commercially available central control panels are installed in major facilities, they must have the following capabilities: stop, start, scanning, recording, indicating, reset, system display, and intercom.

10-2 AIR-CONDITIONING

10-201 REFRIGERATION OPERATING RECORDS

Maintain operating logs for all refrigeration machines over 100-ton capacity. HBK MS-49 and HBK MS-24 contain instructions for maintaining these logs.

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.

10-4 VENTILATION

10-401 REQUIREMENTS FOR MECHANICAL SUPPLY VENTILATION

The following spaces must be provided with mechanical supply ventilation (using filtered air) if the space is not air-conditioned: offices having an open window area equal to less than 5% of the floor area, auditoriums, courtrooms, cafeterias, conference rooms, post office workrooms, private dining rooms, transformer and switchboard rooms with at least 300 KVA of transformer capacity, elevator machine rooms, and escalator machine spaces. See HBK MS-49.

10-402 REQUIREMENTS FOR MECHANICAL EXHAUST VENTILATION

Mechanical exhaust ventilation must be provided in the following spaces: kitchens, toilets, locker rooms, inside garages, refrigeration machine rooms, post office lookout galleries, and top stories of nonair-conditioned buildings where the design dry-bulb temperature is above 80°F.

10-403 VENTILATION AIR QUANTITIES

The following minimum air quantities in cubic feet per minute per square foot of floor area must be supplied to the areas specified in 10-401: offices 1.5, post office workrooms 2.0, auditoriums 3.5, courtrooms 2.5, cafeterias 1.5, and conference rooms 3.0.

10-404 PORTABLE ELECTRIC FANS

Portable electric fans may be provided in office space to provide air circulation only where the air-conditioning equipment cannot attain the prescribed temperature. If portable fans are used, they must either be wall-mounted at least 7 feet above the floor or be so constructed that the occupant, or clothing, cannot come into contact with the fan blade.

10-5 WATER TREATMENT

10-501 GENERAL

A water-treatment program must be established for all circulating water systems that require make-up. When basic tests, treatment, and chemical control limits have been established, benefits will result in the form of reduction of maintenance costs, uninterrupted performance, and longer life of the equipment. This type of chemical treatment, application, testing, and method of control will vary with the location, water conditions, and equipment in service.

10-502 NEW INSTALLATIONS

10-502.1 When a new circulating system is installed, it is customary for the contractor to flush the system to remove dirt, loose rust, and construction debris. It may be necessary to acid clean the system or perform a boil out to remove mill scale, oil, grease, or rust from the equipment. Initially high dosages of chemicals should be employed to form a protecting film against the attack on metal or wood surfaces.

10-502.2 Water-treatment equipment should be made a part of the construction or alteration contract whenever possible, and should require a complete raw water analysis and internal and/or external treatment of the equipment based upon the recommendations of a qualified water-treatment engineer or chemist. Whether or not this has been done, the water-treatment program must be initiated or continued as described in 10-503.

10-503 METHODS OF TREATING WATER

Water-treatment methods may take any of the following forms. All chemicals used

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

Pressure Vessel Code and bear the ASME code stamp. The provisions of this handbook apply only to such boilers and vessels. Boilers and unfired pressure vessels that do not bear an ASME stamp shall be replaced.

UNITED STATES POSTAL SERVICE
U.S.MAIL

CERTIFICATE OF PRESSURE VESSEL INSPECTION

Building		Location (City)
Pressure Vessel Type	National Board Vessel number	Maximum Operating Pressure
Type of Service ☐ Steam ☐ Hot Water ☐ Other _____		Type of Inspection

Inspection

Date of Inspection	Date of Expiration	Mechanic (Signature and Printed Name)	Boiler Inspector (Signature and Printed Name)

PS Form 279-A, May 1984 POST ON VESSEL

Figure 10-1. CERTIFICATE OF PRESSURE VESSEL INSPECTION

10-602.2 Inspection Certificate

a. Form 279-A, Certificate of Pressure Vessel Inspection, Figure 10-1, is completed in triplicate and distributed as follows:

(1) One copy posted conspicuously under glass near the unit.

(2) One copy forwarded to the divisional office.

(3) The original filed in the building manager's office.

b. Other Certificates - When the inspection is performed by a State or municipal inspector, that certificate may be used in lieu of Form 279-A.

c. Form 4772, Equipment Inventory - History Record, must be maintained for each boiler and pressure vessel. Each inspection, test, and repair shall be entered on this record.

d. Scope of Inspection - Except as noted elsewhere in this part, the inspection for a certificate must include the following:

(1) An external inspection including testing safety and control devices.

(2) An internal inspection when construction permits.

(3) A hydrostatic test after repairs have been made which

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,

when qualified USPS employees are not available:

a. GSA or other Federal agencies which have qualified pressure vessel inspectors, i.e., Coast Guard, Navy, Corps of Engineers, Department of Labor, and Bureau of Mines.

b. Municipal or State code-enforcing authority which inspects pressure vessels in private facilities. When arranging for these inspections, it must be clearly understood that the Postal Service will not relinquish sovereign immunity. The inspection is performed as a service and will not obligate the USPS to comply with local licenses or code requirements beyond the national standards.

c. Private engineering consultants, mechanical contractors, or insurance companies which have qualified pressure vessel inspectors.

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

orifice on the water supply to a fixture, failure to maintain the correct air gap on faucets to a fixture, and flexible hoses attached to the water supply piping and long enough to dangle into polluted water. Maintenance of the proper air gap on faucets supplying hot and cold water to fixtures is essential to prevent cross connections. The faucet outlet should be high enough above the flood level of the rim of the fixture so that if the pressure in the water supply line is reduced at the same time that the fixture is obstructed and floods to the rim, there is no danger of the waste water being sucked up into the potable water supply line. Reduced-pressure backflow preventers must be installed on all domestic water supply lines connected to all systems using toxic chemicals (boilers, chillers, etc.) to prevent the possibility of contaminating the domestic water supply.

11-106 VACUUM BREAKERS

Any faucet to which a hose can be attached, or fixture which has a submerged orifice shall not be installed unless it is equipped with a vacuum breaker. The vacuum breaker, when mounted in the water supply line, maintains a safeguard on the possibility of cross connection by preventing back siphonage. One type contains a movable flap-type valve which closes if there is a pressure reduction on the inlet and prevents the siphoning of water into the supply piping. A vacuum breaker should be installed on all general fixtures requiring a submerged flushing device under the flood rim of the fixture.

11-107 VALVES

Valves must be installed on cold water, hot water, and hot-water-return circulating mains, to permit a section of a building to be shut off without disturbing the services to other parts of the building. A shutoff valve located close to the main must be installed on each branch connection off the main. A valve must be installed on the supply to each toilet room where the riser supplies more than one toilet room, and on the connection to each hydrant, lawn faucet, etc. All valves should be operated to full open and closed at least once a year to prevent "frozen" valves.

11-108 DRAIN TRAPS

The water in the traps of floor drains, shower drains, etc., that are used infrequently may evaporate and allow the entrance of sewer gas. The water should be replaced occasionally to avoid this condition.

11-109 SPRINKLER SYSTEM TYPES

11-109.1 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 water-flow device or an alarm valve is incorporated in the system to sound water-flow and fire alarms.

11-109.2 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 water-flow 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.

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

11-203 WALL-HUNG TOILET FIXTURES

Wall-hung toilet fixtures should be installed, where it is practical and economically feasible to do so, when toilet rooms are modernized. Installation of wall-hung fixtures will usually require new connections to the soil and vent stacks. Siphon-jet type water closets are recommended.

11-204 TOILET PARTITIONS

Ceiling-hung partitions shall be installed where the ceiling construction will lend itself to this type of installation, when toilet rooms are modernized.

11-205 SOAP DISPENSERS

Central-feed type soap dispensers must be replaced by individual units using liquid or powdered soap or detergent whenever toilet rooms are modernized. Units requiring a special type of soap or detergent may be installed if tests prove them to be economical.

11-206 PAPER TOWEL DISPENSERS

One paper towel dispenser, of a wall-mounted type, must be provided for each two lavatories. Cloth roll towels will not be used unless a specific study shows that they are more economical. Paper towel dispensers will use common-size towels.

11-207 ELECTRIC HAND DRYERS

Electric hand dryers may not be used except where special circumstances warrant their use and they are approved by the divisional office.

11-208 TOILET PAPER HOLDERS

Multiroll toilet paper holders, of the type in which each roll must be used completely before the next roll is accessible, are available from federal supply schedule. Whenever it is necessary to replace holders or to install new holders, these holders must be provided in all toilet rooms in USPS-owned and -operated buildings which would otherwise require servicing more often than daily.

11-209 LAWN SPRINKLERS

Lawn sprinklers are provided where the area of the lawn is 12,000 square feet or more and the average rainfall during any month of the growing season is less than 1-1/4 inches.

11-210 MISCELLANEOUS

Coat hooks must be installed in each toilet room near the door entrances. Large receptacles are provided for used paper hand towels. Receptacles for feminine napkins, provided in each women's water closet enclosure, may be wall mounted using disposable plastic or wax paper liners.

11-3 OPERATIONAL REQUIREMENTS

11-301 WATER CONSUMPTION

Water consumption varies greatly in postal buildings. In small buildings, the daily consumption averages approximately 30 gallons per employee. In large buildings, with 2,000 - 3,000 employees, the average is 15 to 20 gallons per employee.

11-302 WATER SUPPLY

Two or more services from separate mains should be provided in buildings over 50,000 gross square feet. Each service connection is metered and recorded monthly. If water is purchased, the monthly consumption must be recorded as required by HBK MS-49.

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 mailbag 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.

AMERICAN NATIONAL STANDARD

SCHEME FOR THE IDENTIFICATION OF PIPING SYSTEMS

1 OBJECT AND SCOPE

1.1 This Standard is intended to establish a common system to assist in identification of hazardous materials conveyed in piping systems and their hazards when released in the environment.

1.2 This scheme concerns identification of contents of piping systems in industrial and power plants. It is also recommended for the identification of piping systems used in commercial and institutional installations, and in buildings used for public assembly. It does not apply to pipes buried in the ground nor to electrical conduits.

1.3 Existing schemes for identification shall be considered acceptable if such schemes are described in writing and implemented so that the using facility can demonstrate that the basic concerns outlined in this Standard are being met. For example, petroleum refineries and primary chemical manufacturing plants, in which hazardous work permit systems and emergency procedure manuals are utilized, wherein effective methods for the identification of pipe contents have been established, and wherein employees are trained as to the operation and hazards of the piping systems, shall be considered as meeting the requirements of this Standard.

2 DEFINITIONS

2.1 Piping Systems

For the purpose of this Standard, piping systems shall include pipes of any kind and, in addition, fittings, valves, and pipe coverings. Supports, brackets, or other accessories are specifically excluded from applications of this Standard. Pipes are defined as conduits for the transport of gases, liquids, semiliquids, or fine particulate dust.

2.2 Materials Inherently Hazardous

2.2.1 Flammable or Explosive. This classification includes materials which are easily ignited. It includes materials known as fire producers or those creating an explosive atmosphere.

2.2.2 Chemically Active or Toxic. This classification includes materials which are corrosive, or are in themselves toxic or productive of poisonous gases.

2.2.3 At Temperatures or Pressures. This classification includes materials which when released from the piping would have a potential for inflicting injury or property damage by burns, impingement, or flashing to vapor state.

2.2.4 Radioactive. This classification includes those materials which emit ionizing radiation.

2.3 Materials of Inherently Low Hazard

This classification includes all materials which are not hazardous by nature, and are near enough to ambient pressure and temperature that people working on systems carrying these materials run little risk through the release of these materials.

2.4 Fire Quenching Materials

This classification includes sprinkler systems and other piped fire fighting or fire protection equipment. This includes water (for fire fighting), foam, CO_2, Halon, etc.

3 METHOD OF IDENTIFICATION

3.1 Legend

This Standard considers legend to be primary and explicit for identification of contents. Positive identification of the contents of a piping system shall be by lettered legend giving the name of the contents in

Figure 11A-1 (p. 1)

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full 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 greatest 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.

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 100 PSIG"

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.

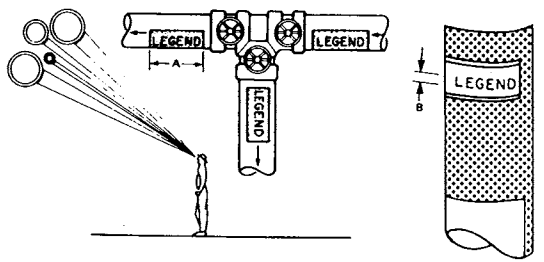
TABLE 2 CLASSIFICATION OF HAZARDS OF MATERIALS AND DESIGNATION OF COLORS[1]

Classification	Color Field	Color of Letters for Legend
Materials Inherently Hazardous		
Flammable or Explosive	Yellow	Black
Chemically Active or Toxic	Yellow	Black
Extreme Temperatures or Pressures	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, Foam, 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 markers using yellow and purple are acceptable if already installed and/or until existing supplies are depleted, subject to pertinent Federal Regulations.
(3) Markers with black letters on a green color field are acceptable if already installed 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	200	1/2	13
1-1/2 to 2	38 to 51	8	200	3/4	19
2-1/2 to 6	64 to 150	12	300	1-1/4	32
8 to 10	200 to 250	24	600	2-1/2	64
over 10	over 250	32	800	3-1/2	89



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,[1] in 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 segments 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."

[1] Sans serif gothic bold lettering provides high readability

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11-308.3 Closed-Valve Warning Tag

Form 4810, Closed-Valve Warning Tag, Figure 11-2, shall be used when any valve on a sprinkler system or standpipe system is closed.

11-308.4 Utility Cutoff Valves

All utility cutoff valves shall be identified as prescribed in Section 17.

11-4 MAINTENANCE

Maintenance and servicing of plumbing systems and equipment shall be according to preventive maintenance guides in Appendix 13-B.

U. S. POSTAL SERVICE
OFFICE OF MAINTENANCE MANAGEMENT
FIRE PROTECTION
VALVE CLOSED

ATTACH THIS TAG TO VALVE
DO NOT REMOVE UNTIL VALVE IS OPEN

VALVE NUMBER _____

CONTROLLING _____

CLOSED *(Date)* _____ *(Hour)* _____ M

BY _____

APPROVED BY _____

REASON FOR CLOSING _____

TO BE OPENED *(Date)* _____

OPENED AND SEALED *(Date)* _____

BY _____

CHECKED BY _____

INSTRUCTIONS

WHENEVER VALVE SEAL IS BROKEN AND THE VALVE IS CLOSED, THIS TAG MUST BE FILLED IN AND ATTACHED TO THE VALVE. BE SURE THAT THE VALVE IS WIDE OPEN, SEALED AND CHECKED BY ANOTHER PERSON BEFORE THIS TAG IS REMOVED FROM THE VALVE.

AFTER THE VALVE HAS BEEN OPENED AND SEALED, RETURN TAG TO SUPERVISOR WHO ORDERED VALVE CLOSED.

PS Form 4810, May 1974

U. S. POSTAL SERVICE
OFFICE OF MAINTENANCE MANAGEMENT
REMINDER

FIRE PROTECTION
VALVE CLOSED

VALVE NUMBER _____

CONTROLLING _____

CLOSED *(Date)* _____ *(Hour)* _____ M

BY _____

APPROVED BY _____

REASON FOR CLOSING _____

TO BE OPENED *(Date)* _____

INSTRUCTIONS

WHEN THE VALVE TAG HAS BEEN FILLED IN AND ATTACHED TO THE CLOSED VALVE, THIS TAG MUST BE DETACHED, FILLED IN AND RETURNED TO THE BUILDING MANAGER'S OFFICE SO THAT IT CAN BE POSTED IN ACCORDANCE WITH NOTE BELOW.

NOTE

THIS TAG IS TO BE HUNG AT A PLACE IN THE BUILDING MANAGER'S OFFICE WHERE IT WILL NOT BE OVERLOOKED. IT MAY BE DESTROYED WHEN ITS CORRESPONDING TAG HAS BEEN REMOVED FROM THE VALVE, CHECKED AND FILED IN THE BUILDING SUPERINTENDENT'S OFFICE.

PS Form 4810, May 1974

Figure 11-2. CLOSED-VALVE WARNING TAG

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

instruction and supervision as would a USPS operator. All safety precautions shall be observed when equipment is operated by USPS employees, or contractors, on USPS property.

12-303 MAINTENANCE

The building manager shall provide for the maintenance and repair of power-operated scaffolds in those USPS-operated buildings where this equipment is installed. Maintenance of this equipment shall be according to the procedures in the Preventive Maintenance Guide in Appendix 13-B. This maintenance should be performed by a qualified elevator mechanic.

12-4 BUILDING MAINTENANCE EQUIPMENT

12-401 GENERAL

There are various types and kinds of equipment, such as lawnmowers, power sweepers, and buffers, which are essential to the economic operation and maintenance of buildings. The methods and procedures identified in this and other maintenance handbooks indicate the need for equipment to improve operation and save labor cost. The building manager shall evaluate the need for, and adequacy of, building maintenance equipment, and when required, shall provide justification for new or additional equipment.

12-402 OPERATION

Employees must receive on-the-job training in the operation of building maintenance equipment they will be using. The employee operating the equipment shall be responsible for cleaning it and performing minor maintenance associated with its operation. Needed repairs and safety hazards shall be reported to the supervisor.

12-403 MAINTENANCE

Preventive maintenance guides for the most common building maintenance equipment are included in Appendix 13-B. Preventive maintenance checklists can be prepared from these guides and from the manufacturer's instructions for each type of equipment. The proper maintenance of equipment is important to prevent loss of time due to equipment failure. However, care must be taken to assure that the cost of preventive maintenance is not excessive in relation to the replacement cost of the equipment. For example, if a lawnmower cost $200, annual maintenance of 13 to 15 workhours would cost as much as a new mower. Therefore, it would be better to perform minimum maintenance of 2 or 3 hours and replace the mower every 2 years, or when it fails.

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

checklists and routes, the annual work load and staffing needs are determined by completing the following forms:

a. PS 4897, Building Equipment Inventory

b. PS 4896-A, Annual Standard Workhour Requirement for Building Equipment Preventive Maintenance

c. PS 4894, Annual Standard Workhour Requirement-Traveling Operating Routes

d. PS 4895, Annual Standard Workhour Requirement-Stationary Operating Routes

e. PS 4896, Annual Local Workhour Requirement for Building Equipment Preventive Maintenance and Operation

f. PS 4893, Annual Building Equipment Operating and Maintenance Workhour Summary

13-202 EQUIPMENT MAINTENANCE AND OPERATING STANDARDS

Forms 4896-A, 4894, and 4895 list the most common items of building equipment requiring preventive maintenance and operating functions, and includes standard frequencies and workhours for those activities listed in Appendices 13-B and 13-C. Form 4896-A must be completed for all facilities in which USPS has maintenance responsibility. Forms 4894 and 4895 should be completed by all maintenance capable offices, but only for those facilities having onsite maintenance personnel qualified to perform the operating functions described herein. These forms and the standard allowances given thereon serve as the basis for staffing of the facility's building maintenance force. Because of unusual or additional local conditions, exceptions may be needed to the minimum frequencies. These exceptions must be justified and approved as in 13-203.

13-203 LOCAL REQUIREMENTS

Form 4896 is to be used for the entry of locally determined preventive maintenance and operating requirements with a significant variance in either, or both, the standard frequency and/or standard workhour allowance. This form is also to be used for listing maintenance or operating requirements on equipment for which no guidelines or standards are given in this handbook. New or revised maintenance requirements issued in Maintenance Bulletins or other temporary directives should also be listed on Form 4896.

Appropriate local checklists and route sheets must be developed and validated to determine the actual work load. However, serious consideration must be given by local maintenance officials where significant variances from the standards or maintenance of other equipment is thought necessary.

Justification for variances from the standards, or maintenance requirements on other equipment for which no standards exist, must include:

a. a sound engineering evaluation;

b. the expected benefits to be gained therefrom; and

c. the history and/or expected effects of equipment failure without performance of such maintenance or operational activities.

Justifications must be provided by the senior maintenance official and approved by the Field Division General Manager/Postmaster on the reverse of Form 4896. Detailed instructions for completion of Form 4896 are in Section 13-501.21.

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

U. S. POSTAL SERVICE
BUILDING EQUIPMENT INVENTORY

PAGE NO.	NO. OF PAGES

BUILDING	CITY	STATE	GROSS AREA

PRINTED NAME	SIGNATURE	DATE PREPARED

EQUIPMENT	EQP NUMBER	LOCATION	DESCRIPTION AND REMARKS

PS Form 4897
June 1974

(OVER)

Figure 13-1 (p. 1). BUILDING EQUIPMENT INVENTORY

BUILDING EQUIPMENT INVENTORY *(Continued)*		PAGE NO.	NO. OF PAGES
EQUIPMENT	EQP NUMBER	LOCATION	DESCRIPTION AND REMARKS

PS Form 4897
June 1974

Figure 13-1 (p. 2). BUILDING EQUIPMENT INVENTORY

to the safety of all employees. Any equipment that is to receive preventive maintenance by contract must be identified by entering "contract" on the line where such equipment is listed on Form 4896-A.

13-402 EQUIPMENT OPERATION

13-402.1 Objective

Maintenance personnel are responsible for both operation and maintenance of building equipment. Operating checklists and routes are necessary to identify essential functions to start up or shut down certain equipment, to monitor equipment during operation, to assure that certain equipment will operate if called upon, to maintain appropriate logs and records, and to perform minor maintenance, adjustments, etc. General procedures for developing local equipment operating checklists and routes are given in 13.403. Standards and criteria for building equipment operation are provided in Appendix 13-C.

13-403 DEVELOPMENT OF BUILDING EQUIPMENT CHECKLISTS AND ROUTES

13-403.1 PM and Equipment Operation Guidelines

The guidelines provided in Appendices 13-B and 13-C define specific activities to be performed on various components of equipment.

Because the guidelines are designed to cover most maintenance and operational activities for general types of equipment, it will be necessary to select from among the activities listed those items which specifically apply to local equipment and, in some cases, add other appropriate activities not listed.

13-403.2 Types of Checklists

The PM guides in Appendix 13-B may be used for development of Inspection, Clean and Lubrication, and Routine checklists for equipment preventive maintenance. The guide numbers indicate the type of equipment or work as follows:

Preventive Maintenance Guides Beginning With	Type of Work
A	Air-conditioning, Heating and Ventilating
E	Electrical
L	Elevator-Escalator
M	Miscellaneous Equipment
P	Plumbing

Guides for development of operating checklists are provided in Appendix 13-C.

13-403.3 Preparing Local Checklists

Sets of Inspection, Cleaning and Lubrication, Routine, and Operation checklists must be developed by local maintenance management personnel familiar with the building, building equipment maintenance, and facility operational needs. It may not always be necessary to develop separate types of PM checklists unless it is locally advantageous for more efficient utilization of craft personnel. To hold checklists to a reasonable length and simplify instructions, it may also be desirable to develop several sets of checklists for more complex equipment or systems, each set tailored to particular equipment components or parts of a system.

13-403.4 Conducting Equipment Survey

The first step in preparing checklists is to be completely familiar with the

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.

13-403.10 Travel Time

Travel time is the actual time to the various work locations on the route and is determined by using the most expedient and feasible means of completing the route at a normal pace from beginning to end without stopping or unusual delay.

The preventive maintenance time standards on Form 4896-A include allowances for normal travel within a facility. Travel time for preventive maintenance routes at outlying facilities should be minimized by performance of preventive maintenance on other trips when possible. Reasonable travel time for outlying facilities may be listed on Form 4896 which must be approved by the Field Director General Manager/ Postmaster.

To establish an operating route travel time requirement, the door or entrance of each room or area on the route that contains equipment to be serviced will be passed. The entire route must be covered taking into consideration waiting for elevators, use of stairs, etc., that are on the route. This time is then multiplied by the number of times per year the route is performed to determine the annual travel time to be entered on Forms 4896 or 4894. (Note: Travel time is not authorized for stationary operating routes.)

13-403.11 Minor Adjustments on Operating Routes

Occasionally, the need for unplanned minor maintenance is observed during performance of an operating route. If adjustments or other remedial measures can be completed within 15 minutes, they should be performed by the route operator. If the needed work is expected to take longer, or if the delay in the operating route will be adverse, operators should report the requirement to their supervisor. If the work is of an emergency nature, operators should proceed with corrective action regardless of the time required, and report it to their supervisors as soon as possible. Additional time for making such minor adjustments is allowed on Form 4894 for staffing purposes only. No minor adjustment time allowance is to be included on individual route sheets.

13-5 STAFFING PROCEDURES

13-501 PREVENTIVE MAINTENANCE

13-501.10 Standard Requirements

Standard frequencies and times for performing preventive maintenance activities listed in Appendix 13-B are preprinted on Form 4896-A. Because of the local variations in size, complexity, and use of some equipment, a range of standard frequencies and/or times has been established. In these instances, preventive maintenance requirements should be developed locally within the range indicated for each item.

NOTE

Complete this form only for the equipment preprinted thereon and only when local PM frequencies and workhours are within the standards preprinted thereon. Do not change the frequency or workhours preprinted on the form. If frequencies or times in excess of the standards are required due to local conditions, or other local equipment exists for which there are no USPS standards, list such equipment on Form 4896 (See 13-501.20).

For those small facilities where only a few items of equipment exist, Form 4896 may be used in lieu of 4896-A to reduce the amount of paperwork required.

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.

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U.S. POSTAL SERVICE

ANNUAL STANDARD WORKHOUR REQUIREMENT FOR BUILDING PREVENTIVE MAINTENANCE

BUILDING	CITY	STATE
PREPARED BY (Printed Name and Signature)		DATE PREPARED

PREVENTIVE MAINTENANCE WORKHOUR REQUIREMENT-HVAC

GUIDE NO	ITEM	QUANTITY	FREQUENCY (Times Per Year)	WH PER FREQUENCY	TOTAL WORKHOURS
A-1	A/C MACHINE PKGE UNITS				
	7½ TON AND UNDER		1	8.75	
	7½ TO 15 TON		1	9.25	
	OVER 15 TON		1	10.00	
A-2	A/C WINDOW UNITS		1	1.00	
A-3	AIR COOLED CONDENSERS				
	10 TON AND UNDER		1	0.75	
	10 TO 30 TON		1	1.00	
	OVER 30 TON		1	1.75	
A-4	AIR HANDLERS				
	UP TO 4 HP		1	2.00	
	4 HP TO 15 HP		1	2.75	
	OVER 15 HP		1	4.75	
A-5	BOILERS, OIL FIRED (Cleaning fire side only)				
			(1 to 5)	(5 to 16)	
			(1 to 5)	(5 to 16)	
A-6	BOILERS, CAST IRON AND STEEL				
	OIL FIRED		1	(10 to 50)	
	GAS FIRED		1	(10 to 50)	
A-7	BURNER, GAS		1	(5 to 16)	
A-8	BURNER, OIL		1	(5 to 20)	
A-9	COILS, PREHEAT, REHEAT, ETC. (Remote from air handler)				
	UP TO 2 SQ FT FRONT SURFACE		1	0.50	
A-9	COILS, PREHEAT, REHEAT, ETC (Continued) (Remote from air handler)				
	2 to 5 SQ FT FRONT SURFACE		1	0.75	
	5 TO 10 SQ FT FRONT SURFACE		1	1.00	
	OVER 10 SQ FT FRONT SURFACE		1	1.75	
A-10	CONTROLS, CENTRAL SYSTEM, HEATING AND AIRCONDITIONING		1	.16 HR PLUS 0.25 HR PER STA	
A-11	CONDENSATE OR VACUUM PUMPS (On steam return systems)		1	(2 to 20)	
A-12	COOLING TOWER (Per Cell)				
	UP TO 50 TON		1	7.00	
	50 TO 500 TON		1	14.50	
	500 TO 1000 TON		1	29.00	
	OVER 1000 TON		1	38.50	
A-13	COOLING TOWER		(1 to 6)	(2 to 6)	
A-14	EVAPORATIVE CONDENSERS				
	UP TO 50 TON		1	7.50	
	OVER 50 TON		1	11.75	
A-15	FANS, CENTRIFUGAL				
	UP TO 1 HP		1	1.00	
	1 TO 2 HP		1	1.50	
	2 TO 7 HP		1	2.00	
	OVER 7 HP		1	2.75	
A-16	FILTERS, MOVABLE CURTAIN, OIL COATED		(1 to 4)	1.75	
A-17	FILTERS, ROLL TYPE, DISPOSABLE MEDIA		(1 to 4)	1.75	
A-18	FILTERS, VISCOUS TYPE (Washable)		(4 to 52)	0.50	

PS Form 4896-A
July 1974
Revised March 1986

Figure 13-2 (p. 1)
ANNUAL STANDARD WORKHOUR REQUIREMENT
FOR BUILDING PREVENTIVE MAINTENANCE

PREVENTIVE MAINTENANCE WORKHOUR REQUIREMENT

HVAC

GUIDE NO.	ITEM	QUANTITY	FREQUENCY (Times Per Year)	WH PER FREQUENCY	TOTAL WORKHOURS
A-19	CONTROLS AND MECHANISMS ROLL TYPE FILTER		1	1.5	
A-20	FILTERS, THROW AWAY (includes pkg & window units etc.)		(4 to 52)	0.10	
A-21	FILTERS ELECTROSTATIC		(4 to 26)	2.50	
A-22	FANS, PROPELLER, 24 IN. DIAMETER OR LARGER		1	1.00	
A-23	FANS, PROPELLER, PEDESTAL, AND WALL MOUNTED		1	0.50	
A-24	FAN/COIL UNITS (Under window type)		(1 to 4)	0.30	
A-25	HEATING-COOLING UNIT, ROOFTOP (Up to 15 tons)		2	8.50	
A-26	REFRIGERATION MACHINES (Absorption Type)				
	UP TO 40 TON		1	15.25	
	40 TO 100 TON		1	19.25	
	100 to 400 TON		1	23.00	
	OVER 400 TON		1	30.75	
A-27	REFRIGERATION MACHINES (Centrifugal and Reciprocating)				
	UP TO 40 TON		1	23.00	
	40 TO 100 TON		1	31.00	
	100 TO 350 TON		1	39.00	
	350 TO 500 TON		1	59.00	
	500 TO 750 TON		1	66.00	
	750 TO 1,000 TON		1	77.00	
	OVER 1,000 TON		1	96.00	
	ADD 13.00 WORKHOURS FOR EACH ADDITIONAL 250 TON INCREMENT OVER 1,000				
A-28	HEATER ELECTRIC IN DUCT (Per sq. ft. surface)		1	.25	
A-29	HEATER ELECTRIC, BASEBOARD (Per linear ft.)		1	.05	
A-30	UNIT HEATERS (Steam and hot water)		1	1.00	

HVAC – (Continued)

GUIDE NO.	ITEM	QUANTITY	FREQUENCY (Times Per Year)	WH PER FREQUENCY	TOTAL WORKHOURS
A-31	UNIT HEATERS (Gas fired)		1	1.50	
A-32	FIRE DAMPERS (In duct)		1	0.20	
A-33	GENERAL MONITORING SYSTEM (See current MM) for Requirements)				
	CPU, CRT, KEYBOARD, DISK DRIVE, PRINTER		1	19.80	
A-34	PIP		1	4.20	
	RESERVED				
	RESERVED				
	TOTAL "A" GUIDES →				
	ELECTRICAL				
E-1	ALARMS, MISC., BURGLAR, CIVIL DEFENSE, TRESPASS		4	0.25	
E-2	BATTERY CHARGERS (For Bldg Equipment)		4	0.25	
E-3	CLOCKS, ELECTRIC, CENTRAL SYSTEM		2	7.25	
E-4	EMERGENCY LIGHTS		1	(-1 to -25)	
E-5	LEAD ACID BATTERIES (Per Cell) (For Bldg Equipment)		4	0.03	
E-6	EDISON, NICKEL-IRON-ALKALINE BATTERIES (Per Cell) (For Bldg Equip.)		4	0.02	
E-7	LIGHTING, OUTSIDE		(0.50 to 2)	(0.25 to 1.50)	
E-8 THRU E-11	RESERVED				
E-12	LIGHTNING PROTECTION (Per Down Conductor)		1	0.50	
E-13 THRU E-28	RESERVED				
	RESERVED				
	RESERVED				
	RESERVED				
	RESERVED				
E-29	MOTORS				
	5 TO 100 HP		1	1.00	
	OVER 100 HP		1	2.00	

PS Form 4896-A
July 1974
Revised March 1986

2

Figure 13-2 (p. 2)

PREVENTIVE MAINTENANCE WORKHOUR REQUIREMENT

ELECTRICAL (Continued)

GUIDE NO.	ITEM	QUANTITY	FREQUENCY (Times Per Year)	WH PER FREQUENCY	TOTAL WORKHOURS
E-30	RESERVED				
E-31	EMERGENCY GENERATORS, GASOLINE OR NATURAL GAS ENG.		1	(2 to 6)	
E-32	EMERGENCY GENERATORS, DIESEL POWER		1	(3 to 8)	
E-33	EMERGENCY GENERATORS, ALL TYPES OF ENGINES		12	(1 to 2)	
E-34	FIRE SUPERVISORY SIGNALS-TESTING		4	0.30	
E-35	AUTOMATIC FIRE DETECTION OR ALARM DEVICES		2	0.30	
E-36	FIRE ALARM SYSTEM-CONTROL BOARDS		365	0.20	
E-37	FIRE ALARM SYSTEM-RECORDERS		52	0.10	
E-38	FIRE ALARM BOXES *(Manual)*		(4 to 6)	0.10	
	TOTAL "E" GUIDES →				

ELEVATOR

L-1 thru L-12	ELEVATORS, ELECTRIC		12	18.50	
L-1 thru L-12	NO. ELEVATOR LANDINGS IN EXCESS OF 6 PER ELEVATOR *(i.e., if there are 2 elevators with, 8 landings each, the entry under qty would be 4 & WH would be 24)*		12	0.50	
L-13	ELEVATORS, HYDRAULIC		12	6.75	
L-14	ELEVATORS, HYDRAULIC		1	15.25	
L-15	ESCALATORS		52	1.00	
L-16	ESCALATORS		1	97.00	
L-17	ELEVATORS, SIDEWALK		12	3.75	
L-18	WINDOW WASHING SCAFFOLDS, POWER OPERATED		4	(10 to 30)	
L-19	DUMBWAITERS		4	3.75	
	RESERVED				
	RESERVED				
	RESERVED				
	RESERVED				
	TOTAL "L" GUIDES →				

MISCELLANEOUS

GUIDE NO.	ITEM	QUANTITY	FREQUENCY (Times Per Year)	WH PER FREQUENCY	TOTAL WORKHOURS
M-1	AIR COMPRESSORS				
	1 HP AND UNDER		1	0.75	
	1 HP TO 20 HP		1	1.75	
	OVER 20 HP		1	2.00	
M-2	LAWN MOWERS AND EDGERS		(2 to 6)	1.00	
M-3	SWEEPERS		(2 to 12)	2.00	
M-4	TANKS, FUEL OIL STORAGE		0.25	6.25	
M-5	PAPER BALERS		1	3.00	
M-6	INCINERATORS		1	15.25	
M-7	DOORS, POWER OPERATED		2	2.00	
M-8	DOORS, POWER OPERATED MAIN ENTRANCE AND DOCK		4	1.00	
M-9	DOORS, MAIN ENTRANCE		2	1.00	
M-10	LOADING RAMPS, ADJUSTABLE		4	1.25	
M-11	FIRE DOORS-STAIRWELLS AND EXITWAYS *(Swinging)*		4	0.10	
M-12	FIRE DOORS-SLIDING TYPE		4	0.20	
M-13	STATIONARY PACKERS		52	1.00	
M-14	STATIONARY PACKERS		12	1.00	
M-15	STATIONARY PACKERS		4	2.00	
M-16	POWER SWEEPERS, ELECTRIC *(Battery)*		12	1.50	
M-17	POWER LIFTS		12	1.00	
M-18	AUTOMATIC FLOOR SCRUBBERS, *(Battery powered scrubber vacuum)*		12	1.50	
M-19	SNOW BLOWER *(Walking Type)*		(2 to 5)	1.00	
M-20	LOAD LEVELERS		4	2.00	
M-21	DOCK BOARDS		12	0.50	
	RESERVED				
	RESERVED				

PS Form 4896-A
July 1974
Revised March 1986

3

Figure 13-2 (p. 3)

PREVENTIVE MAINTENANCE WORKHOUR REQUIREMENT

MISCELLANEOUS (Continued)

GUIDE NO.	ITEM	QUANTITY	FREQUENCY (Times per year)	WH PER FREQUENCY	TOTAL WORKHOURS HOURS
	RESERVED				
	RESERVED				
	RESERVED				
	RESERVED				
	RESERVED				
	TOTAL "M" GUIDES →				
	PLUMBING				
P-1	RESERVED				
P-2	FIRE CONTROL VALVES FOR WATER DISTRIBUTION SYSTEMS		1	0.20	
P-3	FIRE EXTINGUISHER—STORED PRESSURE TYPE		1	0.10	
P-4	FIRE EXTINGUISHER—GAS CARTRIDGE TYPE		1	0.30	
P-5	FIRE EXTINGUISHER—HYDROSTATIC TESTING		(.2 to .8)	1.00	
P-6	FIRE EXTINGUISHING SYSTEM—FIXED		1	3.50	
P-7	GREASE TRAPS		12	0.75	
P-8	RESERVED				
P-9	MANHOLES, SEWER		4	2.00	
P-10	SEWER EJECTORS (Pneumatic tank type)		1	2.50	
P-11	SUMP PUMPS		1	3.75	
P-12	TANKS, WATER (All types)		0.33	6.25	
P-13	VALVES, REGULATING (Steam at pressure reducing station)		1	(1 to 4)	
P-14	VALVES, MANUALLY OPERATED				
	MAIN LINE OR CRITICAL		1	1.00	
	OTHERS OVER 2 IN.		0.20	0.50	
P-15	VALVES, MOTOR OPERATED		1	1.50	
P-16	BACKFLOW PREVENTERS		1	2.00	
P-17	STEAM TRAPS (All types)		1	0.50	

PLUMBING (Continued)

GUIDE NO.	ITEM	QUANTITY	FREQUENCY (Times Per Year)	WH PER FREQUENCY	TOTAL WORKHOURS HOURS
P-18	PUMPS, CENTRIFUGAL				
	1 to 5 HP		1	1.75	
	5 to 25 HP		1	4.00	
	25 to 100 HP		1	6.00	
P-19	RADIATORS, HEATING		0.20	0.25	
P-20	ROOF, BUILT-UP (See guide for WH)		2		
P-21	DRAINS, AREA-WAY, DRIVEWAY, STORM		2	0.50	
P-22	EXPANSION JOINTS IN PIPING (Slip type joint only)		1	1.25	
P-23	ALARM CHECK VALVES AND ACCESSORIES		1	1.25	
P-24	DRY PIPE, DELUGE AND PREACTION VALVES		1	2.75	
P-25	FIRE HOSE (1½" racked in buildings)		1	0.25	
P-26	FIRE DEPARTMENT HOSE CONNECTIONS (Standpipe outlets)		1	0.15	
P-27	FIRE DEPARTMENT PUMPER CONNECTIONS (Standpipe or Sprinkler)		1	0.50	
P-28	FIRE HYDRANTS (Dry barrel or wet barrel)		1	1.00	
P-29	SPRINKLER HEADS-SPRINKLERED AREAS (per 1,000 sq. ft.)		1	0.10	
P-30	HOT WATER HEATERS AND CONVERTERS		1	4.50	
P-31	HOT WATER HEATERS (Domestic type)		1	1.50	
P-32	DRINKING WATER COOLERS		1	1.00	
P-33	FIRE PUMPS (Elec Mtr Driven)		1	0.75	
P-34	FIRE PUMPS (Int Comb Eng Dr.)		1	(.75 to 1.5)	
	RESERVED				
	RESERVED				
	RESERVED				
	RESERVED				
	TOTAL "P" GUIDES →				
	GRAND TOTAL (Guides A, E, L, M and P) →				

PS Form 4896-A
July 1974
Revised March 1986

4

Figure 13-2 (p. 4)

☐ Supplement to Form No(s)__________

☐ In lieu of Form No(s)__________

U.S. POSTAL SERVICE

ANNUAL LOCAL WORKHOUR REQUIREMENT FOR BUILDING EQUIPT. PREVENTIVE MAINTENANCE AND OPERATION

☐ PREVENTIVE MAINTENANCE

☐ BLDG. EQUIPT. OPERATION

PAGE NØ. __ OF __

BUILDING	CITY	STATE	PREPARED BY (PRINTED NAME, TITLE AND SIGNATURE)	DATE PREPARED

PART I			STANDARD ALLOWANCE			PART II LOCAL REQUIREMENT					
A	B	C	D	E	F	G	H	I	J	K	
PM GUIDE NO. or OPER. RT. ITEM NO.	ITEM	QTY.	FRE-QUENCY (TIMES PER YEAR)	WH PER FRE-QUENCY	TOTAL HOURS C x D x E	FRE-QUENCY (TIMES PER YEAR)	WH PER FRE-QUENCY	ANNUAL TRAVEL HOURS	TOTAL HOURS (C x G x H) + I	ANNUAL HOURS VARIANCE (J-F) −	+

Revised March 1986
PS FORM 4896 (p. 1)

(OVER)

Figure 13-3 (p. 1)
ANNUAL LOCAL WORKHOUR REQUIREMENT FOR BUILDING EQUIPMENT PREVENTIVE MAINTENANCE AND OPERATION

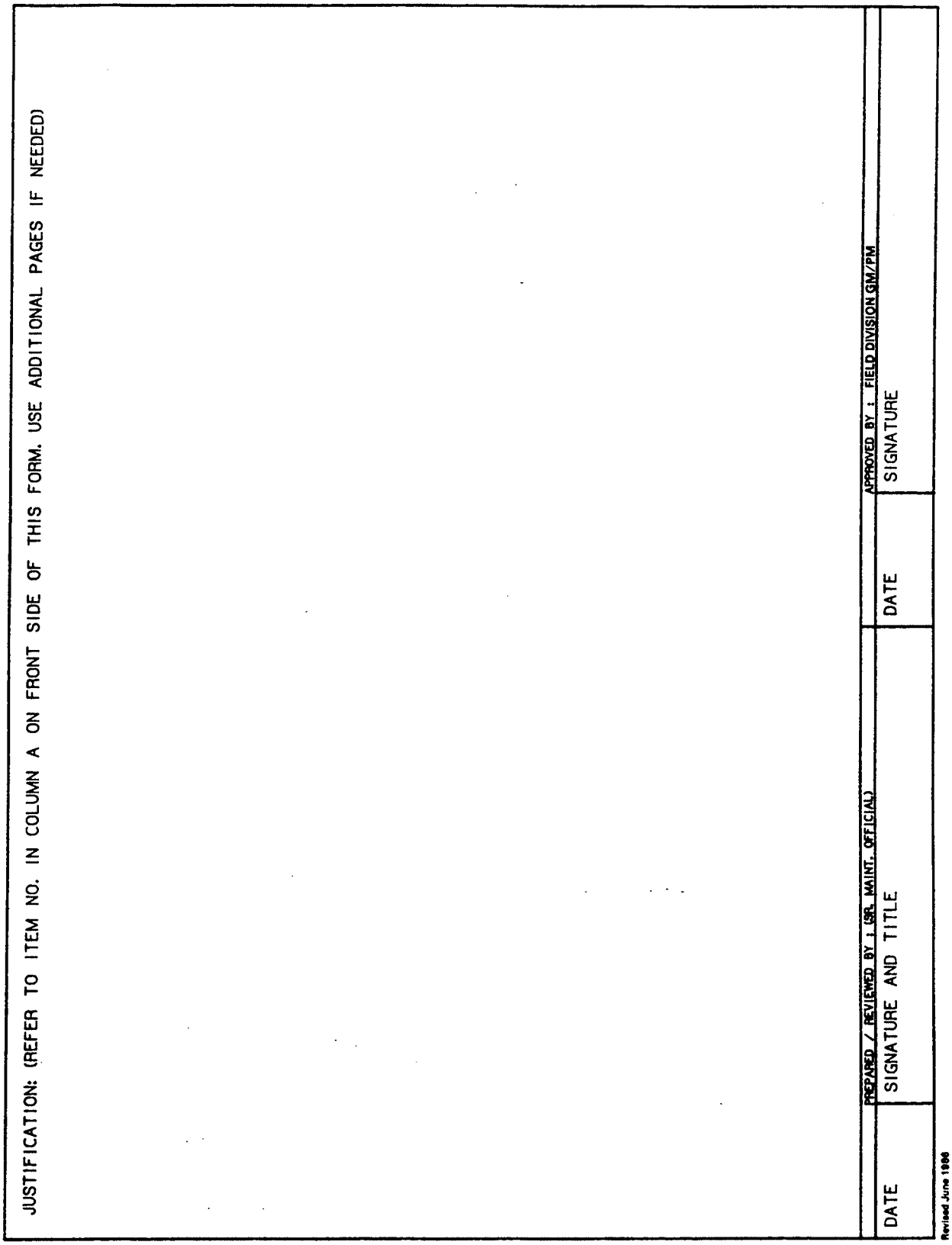

Figure 13-3 (p. 2)

Obtain the standard frequency and workhours per frequency from Forms 4896-A, 4894, or Appendix C, Part 3, and enter in Columns D and E. Where a range is given, enter either the maximum if the locally developed requirement is more than the standard allowance, or the minimum if the local requirement is less than the standard allowance. Multiply Column C by Column D by Column E and enter the results in Column F. For local equipment without preventive maintenance/operational guides or standards, leave these columns blank and complete Part II, Columns G through J only.

Part II - Local Requirement:

Column G, Frequency: Enter the number of times per year that the locally developed checklist for this equipment is to be performed.

Column H, Workhours per Frequency: Enter the hours to perform the locally developed checklist one time. This time should also include job preparation (acquiring necessary equipment and materials), access to equipment, return of equipment and remaining materials, compliance with applicable safety standards, site cleanup, and necessary paperwork.

Column I, Annual Travel Hours: Multiply the local route sheet travel time (one time) by the frequency in Column G and enter the results here.

NOTE

Ensure that the total quantity of equipment listed in Column C is considered when computing annual travel hours.

Column J, Total Hours: Multiply Column C by Column G by Column H, then add Column I, and enter the results here.

Column K, Annual Hours Variance: Complete this column ONLY when the locally required annual workhours (Column J) exceed or are less than the standard annual workhours (Column F). Subtract Column F from Column J and enter the results in the appropriate column as either more (+) or less (-) than the standard allowance.

Grand Totals:

a. Part I, Standard: Subtotal Column F for each general type of equipment, i.e., "A," "E," "L," "M," and "P" guides. Add the subtotals and enter as the grand total at the bottom of the last page utilized. (Note: Subtotal line must be created.)

b. Part II, Local: Subtotal Column I and Column J for each general type of equipment. Add the subtotals and enter as the grand total at the bottom of the last page used.

NOTE

Column I grand total is entered here to readily identify that portion of Column J resulting from local travel time.

Subtotal the "+" and "-" hours in Column K, subtract the smaller from the larger, and enter the net variance at the bottom of the last page used.

Page 2 (Reverse Side of Form 4896):

Justification for Variances: Enter information to explain why local requirements vary from standard requirements, e.g., additional checklist items, equipment age and condition, modifications, operational requirements, revised instructions in MMO, environmental conditions, and the actual or expected effects of inadequate maintenance or equipment failure, expected benefits, costs, etc.

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.

b. Enter information about the chiller(s) and high-pressure boiler(s) operating periods in Columns 8 through 10 and 27 through 29, respectively. Equipment operating periods should be based on procedures in Appendix 13-C, Part 2. For each unit, enter the average number of days per year and the average number of tours per day that the equipment operates.

Example:

An office has two chillers (#1 and #2) and an average cooling season of 180 days. Unit 1 runs an average of one tour per day for 60 days (the first and last months of the season), and two tours per day during the remaining 120 days of the season. Unit 2 runs an average of one tour per day for 90 days (during the hottest part of the day and the hottest part of the season). Three entries would be made as follows:

Column 8 Unit #	Column 9 Days/Yr	Column 10 Tours/Day
1	60	1
1	120	2
2	90	1

c. Based on the average number of operating tours per day for each unit, compute and enter the total workhours per day to perform each of the operating functions in Columns 11, 12, 13, 30, 31, and 32. Standard criteria and allowances for central chill water plant and high-pressure boiler plant operation are given in Appendix 13-C, Parts 3a and 3b.

d. Compute the annual standard workhour requirement for operating the central chill water plant. Multiply the total workhours per day (Columns 11+12+13) by the number of operating days (Column 9) and enter the results in Column 14 for each line. Total the entries in Column 14 and enter the results in Block 16. Similarly, compute the requirements for operating the high-pressure boiler plant, if applicable, and enter the results in Block 35.

e. Compute the annual standard workhour requirement for other equipment and duties in the stationary route area based on standard criteria in Appendix 13-C, Part 3. Prepare a separate Form 4894 listing applicable equipment/system requirements, omitting travel time. Enter the total hours from Block 71 of this Form 4894 to Line 36 of Form 4895.

f. Compute the annual standard workhour requirement for operational checks of the central control panel based on criteria in Appendix 13-C, Part 3c and enter on Line 37.

g. Add the times from Blocks 16, 35, 36, and 37 and enter the total annual stationary route workhours in Block 38.

13-502.20 Local Operational Requirements

When locally developed operating requirements for specific equipment, systems, or areas listed on Forms 4894 or 4895 exceed the standard frequency or workhours, list those items on Form 4896. Locally developed requirements on items for which there are no operating guidelines or standards in this or other official directives should also be listed on Form 4896 (see part 13-501.21).

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U. S. POSTAL SERVICE

ANNUAL STANDARD WORKHOUR REQUIREMENT—TRAVELING OPERATING ROUTES

BUILDING	CITY	STATE

	AIR CONDITIONING, HEATING, VENTILATING AND PLUMBING EQUIPMENT	FREQUENCY (a)	OPERATING DAYS PER YEAR (b)	QUANTITY (c)	WORKHRS PER INSP (d)	ANNUAL WORKHOURS (a x b x c x d) (e)
1	A/C PACKAGE UNITS – SPECIAL	TWO (2) TIMES PER DAY			.05	
2	AIR HANDLERS *(Manual start/stop only)*				.05	
3	HEATING BOILERS *(hot water or low pressure steam)*				.25	
4	COOLING TOWER *(Over 500 tons)*				.10	
5	REFRIGERATION EQUIPMENT *(Small central chillers)*				.10	
6						
7						
8						
9						

SUMMARY	10. TOTAL ANNUAL WORKHOURS *(Col e)*	11. MINOR ADJUSTMENT *(10% of Item 10)*	12. ANNUAL TRAVEL TIME	13. TOTAL WORKHOURS *(Items 10, 11 & 12)*

	AIR CONDITIONING, HEATING, VENTILATING AND PLUMBING EQUIPMENT	FREQUENCY (a)	OPERATING DAYS PER YEAR (b)	QUANTITY (c)	WORKHRS PER INSP (d)	ANNUAL WORKHOURS (a x b x c x d) (e)
14	COMPRESSED AIR SYSTEMS *(For building systems)*	ONE (1) TIME PER DAY			.05	
15	STEAM CONDENSATE RETURN SYSTEMS				.05	
16	CENTRAL DRINKING WATER SYSTEMS				.06	
17	COOLING TOWERS *(Up to 500 tons)*				.10	
18	HOT WATER SYSTEMS				.05	
19	HYDRO-PNEUMATIC SYSTEM *(Including fire protection systems)*				.08	
20	PUMPS *(Remote from other equipment)*				.03	
21	PRESSURE REDUCING AND REGULATING STATIONS – STEAM AND WATER				.02	
22	SECONDARY WATER SYSTEM *(Heating and cooling)*				.03	
23	SEWAGE EJECTOR				.05	
24						
25						
26						
27						

SUMMARY	28. TOTAL ANNUAL WORKHRS *(Col e)*	29. MINOR ADJUSTMENT *(10% of Item 28)*	30. ANNUAL TRAVEL TIME	31. TOTAL WORKHOURS

PS Form 4894
Revised March 1986

(OVER)

Figure 13-4 (p. 1)
ANNUAL STANDARD WORKHOUR REQUIREMENT - TRAVELING OPERATING ROUTES

	AIR CONDITIONING, HEATING, VENTILATING AND PLUMBING EQUIPMENT	FRE-QUENCY (a)	OPERATING WEEKS PER YEAR (b)	QUANTITY (c)	WORKHRS PER INSP (d)	ANNUAL WORKHOURS (a x b x c x d) (e)
32	PACKAGE UNITS-COMFORT COOLING	ONE (1) TIME PER WEEK			.03	
33	CONDENSERS (Air Cooled or Evaporative)				.04	
34	FANS (Centrifugal Over 15 H.P.)				.03	
35	FANS PROPELLER (24 inches or larger)				.03	
36	SUMP PUMPS				.05	
37	AIR HANDLERS (Automatic-remote start, stop)				.06	
38.	FIRE PUMPS				.40	
39						

SUMMARY	40. TOTAL ANNUAL WORKHOURS (Col e)	41. MINOR ADJUSTMENT (10% of Item 40)	42. ANNUAL TRAVEL TIME	43. TOTAL WORKHOURS

ELEVATOR – EQUIPMENT

			(a)	(b)	(c)	(d)	(e)
44	ELEVATOR MACHINE ROOM	6 to 8 Cars	ONE TIME PER WEEK			1.0	
45		4 to 5 Cars				.65	
46		2 to 3 Cars				.40	
47		Single car				.25	
48							

SUMMARY	49. TOTAL ANNUAL WORKHOURS (Col e)	50. MINOR ADJUSTMENT (10% of Item 49)	51. ANNUAL TRAVEL TIME	52. TOTAL WORKHOURS

ELECTRICAL SYSTEMS

			(a)	(b)	(c)	(d)	(e)
53	BATTERY SYSTEMS (Volts)	24	ONE TIME PER WEEK			.08	
54		48				.16	
55		120				.33	
56	MAIN CUBICLE ROOMS					.08	
57	TRANSFORMER VAULTS					.06	
58	SWITCHBOARD ROOMS (Power)					.05	
59							

SUMMARY	60. TOTAL ANNUAL WORKHOURS (Col e)	61. MINOR ADJUSTMENT (10% of Item 60)	62. ANNUAL TRAVEL TIME	63. TOTAL WORKHOURS

MISCELLANEOUS EQUIPMENT

		(a)	(b)	(c)	(d)	(e)
64	PORTABLE FIRE EXTINGUISHERS	1/mo	12		.02	
65	EMERGENCY LIGHTS	1/mo	12		.02	
66		"				

SUMMARY	67. TOTAL ANNUAL WORKHOURS (Col e)	68. MINOR ADJUSTMENT (10% of Item 67)	69. ANNUAL TRAVEL TIME	70. TOTAL WORKHOURS

71. GRAND TOTAL (Items 13 + 31 + 43 + 52 + 63 + 70)	72. PREPARED BY	
	DATE	SIGNATURE

PS Form 4894
Revised March 1986

Figure 13-4 (p. 2)

U. S. POSTAL SERVICE
ANNUAL STANDARD WORKHOUR REQUIREMENT-STATIONARY OPERATING ROUTES

PAGE NO. | NO. OF PAGES

BUILDING | CITY | STATE

CENTRAL CHILL WATER PLANT

UNIT NO. 1	CAPACITY (Tons) 2	TYPE CENTRIFUGAL RECIPOCAL ABSORPTION 3	YEAR IN-STALL-ED 4	NAME OF MANUFACTURER 5	MANUFACTURER'S UNIT DESIGNATION 6	REMARKS 7

UNIT NO. 8	ANNUAL OPERATING DAYS 9	AVG. NO. SHIFTS PER DAY 10	WORKHOURS PER DAY: START-UP AND SECURE 11	WORKHOURS PER DAY: OPERATING CHECKS 12	WORKHOURS PER DAY: WATER TREAT-MENT 13	ANNUAL WORKHOURS Col 9 x (11 + 12 + 13) 14	15. REMARKS
							16. TOTAL (Col. 14)

HIGH PRESSURE BOILER PLANT

UNIT NO. 17	OPER-ATING PRES-SURE 18	CAPACITY Lbs. of steam per hour 19	FUEL TYPE: PRI-MARY 20	FUEL TYPE: SECON-DARY 21	MANUFACTURER: BOILER 22	MANUFACTURER: BURNER CONTROL 23	YEAR INSTALLED: BOILER 24	YEAR INSTALLED: BURNER CONTROL 25	INSPECTION BY 26

UNIT NO. 27	ANNUAL OPER-ATING DAYS 28	AVG. NO. SHIFTS PER DAY 29	WORKHOURS PER DAY: START-UP AND SECURE 30	WORKHOURS PER DAY: OPERATING CHECKS 31	WORKHOURS PER DAY: WATER TREAT-MENT 32	ANNUAL WORKHOURS Col. 28 x (30 + 31 + 32) 33	34. REMARKS
							35. TOTAL (Col. 33)

36. OTHER EQUIPMENT AND DUTIES IN THE STATIONARY ROUTE AREA (Attach supporting data for workhours)	
37. WORKHOURS FOR CENTRAL CONTROL PANEL	
38. TOTAL ANNUAL STATIONARY ROUTE WORKHOURS (Item 16 + 35 + 36 + 37)	

39. PREPARED BY

DATE	PRINTED NAME	SIGNATURE

PS Form 4895
Revised March 1986

Figure 13-5
ANNUAL STANDARD WORKHOUR REQUIREMENT - STATIONARY OPERATING ROUTES

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

include installation or relocation of lighting, electrical outlets and switches, HVAC, or other utilities equipment; removal or installation of partitions, doors, miscellaneous fixtures and hardware; and painting.

13-505.2 Staffing Allowance

The standard annual allowance for minor alteration and improvement projects resulting from moves and space adjustments is 5 workhours per year per 1000 gross square feet of building area. A departure from the standard allowance may be made by the Field Division General Manager/Postmaster if the local office provides supporting evidence of unusual actual work load of this nature, as outlined in 13-503.3. The standard allowance or average actual work load for space adjustments is to be entered on Form 4893, Column j.

13-506 NONPOSTAL FUNDED WORK

13-506.1 Definition

Workhours may be incurred for maintenance of equipment or areas belonging to other occupant agencies which is beyond normal, or standard level, building services, but because of available expertise, equipment, or other factors, is to the advantage of the Postal Service to accomplish on a reimbursable basis. This would include maintenance of equipment installed by occupant agencies for their exclusive use, such as emergency generators, special environmental control equipment, and special lighting.

13-506.2 Staffing Allowance

No standard workhour allowance is provided. An allowance may be authorized based on the documented work load submitted with the staffing package. Enter locally required hours on Form 4893, Column k.

13-507 WORKHOUR REQUIREMENTS SUMMARY

13-507.1 General

The total building operation and maintenance annual workhour requirement shall be summarized on Form 4893, Figure 13-6.

13-507.2 Instructions for Completion of Form 4893, Annual Building Equipment Operating and Maintenance Workhour Summary

Column b, Type of Work: May be used to identify different types of craft work, e.g., HVAC, electrical, elevator, plumbing, and miscellaneous. This is usually applicable only to large facilities where the work load will support specialized craft positions such as electricians, plumbers, elevator mechanics, stationary engineers, building equipment mechanics, and enginemen. Workhour requirements for general types of equipment are subtotaled on other forms used herein.

Column c: Enter the annual standard workhour requirements for building equipment preventive maintenance from Form 4896-A, Grand Total.

Column d: Enter other local workhour requirements for preventive maintenance, if any, from Column j, Form 4896.

Column e: Enter the annual standard workhour requirements for traveling operating routes from Form 4894, block 71. Exclude any workhours that were included in block 36 of Form 4895.

Column f: Enter the annual standard workhour requirements for stationary operating routes from Form 4895, block 38.

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.

U.S. POSTAL SERVICE

ANNUAL BUILDING EQUIPMENT OPERATING AND MAINTENANCE WORKHOUR SUMMARY

BUILDING | CITY | STATE | GROSS BLDG SQUARE FEET | POSTAL | NET INTERIOR SQUARE FEET | NON-POSTAL

LINE NO.	TYPE OF WORK	ANNUAL WORKHOUR REQUIREMENTS										
		PREVENTIVE MAINTENANCE		EQUIPMENT OPERATION				CORRECTIVE MAINTENANCE ☐ STD(1) ☐ LOCAL	MISC (10% of c thru h)	SPACE ADJUSTMENT ☐ STD(2) ☐ LOCAL	NON-POSTAL FUNDED	TOTAL ANNUAL WORKHOURS (Columns c thru k)
		PS4896-A STD	PS4896 LOCAL	PS4894 STD	PS4895 STD	PS4896 LOCAL						
(a)	(b)	(c)	(d)	(e)	(f)	(g)		(h)	(i)	(j)	(k)	(l)
1												
2												
3												
4												
5												
6												
7												
8												
9	SUB-TOTALS											
10	GRAND TOTALS											

REMARKS

(1) 8 WORKHOURS PER 1000 GROSS SQUARE FEET OR AVERAGE ACTUAL (2) 5 WORKHOURS PER 1000 GROSS SQUARE FEET OR AVERAGE ACTUAL

PREPARED/REVIEWED BY (SR. MAINT. OFFICIAL) | DIVISION APPROVAL

DATE | PRINTED NAME, TITLE AND SIGNATURE | DATE | PRINTED NAME, TITLE AND SIGNATURE

PS Form 4883 (Revised June 1986)

Figure 13-6
ANNUAL BUILDING EQUIPMENT OPERATING AND MAINTENANCE WORKHOUR SUMMARY

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APPENDIX 13-A

EQUIPMENT INVENTORY AND MAINTENANCE REFERENCE GUIDE

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 #
	NOTE: Refer to Preventive Maintenance Guides, Appendix 13-B, to aid in equipment identification. Where multiple guides are given, review each guide to determine local applicability for certain components.					
*	Air Compressors	BLDG (2)	Give MFR, tank capacity, motor hp, and pressure (psig)	M-1	a	14
*	Air-Conditioning Machine Package Unit	HVAC	Give tonnage	A-1, A-20	c	1, 32
*	Air-Conditioning, Window Units	BLDG	Give tonnage or BTU/hr	A-2, A-20	-	-
*	Air Handlers	HVACA	Give motor hp and CFM	A-4, A-16 through A-19, E-29	b4, 1	2, 33
*	Alarms, Misc., Burglar, Civil Defense, Trespass, etc.	BLDG	Give make, no. of stations and receiving points	E-1	-	-
*	Backflow Preventers	BLDG	Give mfr. and model number	P-16	-	-
	Batteries, Edison nickel-iron-alkaline	BLDG	Give number of cells and use	E-6	d	53-55
	Batteries, lead-acid	BLDG	Give number of cells and use	E-5	d	53-55
	Battery Chargers	BCR	Give mfr., rating and use	E-2	-	-

* 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 Unfired Pressure Vessel (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 #
*	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 #
	Doors, Main Entrance (non-powered)	BLDG		M-9	-	-
	Doors, Main Entrance and Dock, Power Operated	BLDG		M-8	-	-
	Doors, Power Operated	BLDG	Give mfr. and type (overhead, sliding)	M-7	-	-
	Drains, Areaway, Driveway, Storm	BLDG		P-21	-	-
	Drinking Water Coolers	BLDG	Give mfr.	P-32	-	-
	Dumbwaiters	BLDG	Complete Form 4813 for each unit	L-19	-	-
	Elevators, Electric	EL	Complete Form 4813 for each unit	L-1 through L-12, E-29	g	44-47
	Elevators, Hydraulic	EL	Complete Form 4813 for each unit	L-13, L-14, E-29, P-18	g	44-47
	Elevators, Sidewalk	EL	Complete Form 4813 for each unit	L-17, E-29, P-18	g	44-47
*	Escalators	BLDG	Complete Form 4813 for each unit	L-15, L-16, E-29	h	-
	Expansion Joints in Piping (Slip-type)	BLDG	Give pipe size and type of slip joint	P-22	-	3-5, 15-22, 38
	Fan/Coil Unit, Under Window Type	BLDG	Give type	A-24, A-20	-	-

* 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	OPERATING GUIDE PS 4894 LINE #
	Fire Alarm or Fire Detection Devices, Automatic	FAELS	Give type (ion chamber; temperature; photo-electric; water flow alarm)	E-35	-	-
	Fire Alarm System, Control Boards	FAELS	Give mfr.	E-36	-	-
	Fire Alarm System - Recorders	FAELS	Give Mfr.	E-37	-	-
	Fire Control Valves, Dry Pipe, Deluge and Preaction	FAELS		P-24	-	-
	Fire Control Valves for Water Distribution Systems	FAELS	Give size	P-2	-	-
	Fire Dampers (In Duct)	FAELS	Give duct size	A-32	-	-
	Fire Department Hose Connections (Standpipe Outlets)	FAELS	Give size	P-26	-	-
	Fire Department Pumper Connections (Standpipe or Sprinkler)	FAELS	Give size and threads, i.e., National Standard or Pittsburg Standard	P-27	-	-
	Fire Doors - Sliding Type	FAELS	Give type of actuating device (Fusible link, etc.)	M-12	-	-

* 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 #
*	General Monitoring System	GMS	System includes CPU, CRT (monitor) w/keyboard, disk drive, printer, and Programmable Interface Peripheral (PIP)	A-33, A-34 (See current MMO)	-	-
*	Generators, Emergency, Gasoline or Natural Gas Engines	ESPS	Give kVA, kW, voltages and phases (single or 3-phase)	E-31, E-33	-	-
*	Generators, Emergency, Diesel Engines	ESPS	Give kVA, kW, voltages and phases (single or 3-phase)	E-32, E-33	-	-
	Heaters, Baseboard, Electric	BLDG	Give length in feet at each location	A-29	-	-
	Heaters, In Duct, Electric	BLDG	Give sq. ft. of coil surface area	A-28	-	-
	Heaters, Unit, Gas-fired	BLDG	Give size or capacity and motor hp.	A-31	-	-
	Heaters, Unit, Steam or Hot Water	BLDG	Give type, size or capacity and motor hp.	A-30	-	-
	Heating/Cooling Units, Rooftop	BLDG	Give BTUs/hr	A-25	-	-
	Hot Water Heaters, Converters	BLDG	Give size or capacity, size of coils	P-30, E-29, P-18	j, k, m	22
	Hot Water Heaters, Domestic Type (Gas or Oil Fired)	BLDG	Give capacity and type of fuel	P-31, E-29, P-18	k, m	18
	Incinerators	BLDG	Give mfr. and size or capacity	M-6	-	-

* 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 #
	Radiators, Heating	BLDG	Indicate one- or two-pipe system	P-19	-	-
*	Refrigeration Machines (Absorption type)	HVAC	Give mfr., tonnage, and motor hp.	A-26, E-29, P-18	b	5 or PS 4895
*	Refrigeration Machines (Centrifugal and Reciprocating)	HVAC	Give mfr., tonnage, and motor hp.	A-27, E-29, P-18	b	5 or PS 4895
	Roof, Built-up, including:	BLDG	Give sq. ft. of roof mat	P-20	-	-
	Drains and Downspouts		Give quantity of each			
	Penetrations (except drains and vent pipes)		Give quantity			
	Expansion or Control Joints		Give lineal ft.			
	Gutters		Give lineal ft.			
	Perimeter		Give lineal ft.			
	Exterior Walls		Give lineal ft.			
	Inside Ceilings, Top Floor(s)		Give sq. ft. of office and workroom areas			
	Sewage Ejectors (Pneumatic Tank Type)	BLDG	Give mfr., type, size and motor hp.	P-10	a, 1	23
	Snow Blower - Walking Type	BLDG	Give mfr., size and engine hp.	M-19	-	-
	Sprinkled Area	FAELS	Give no. of heads and sq. ft. of each sprinkled area	P-29	-	-
	Stationary Packers	BLDG	Give mfr. and capacity	M-13, M-14, M-15	-	-

* 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.

APPENDIX 13-B

PREVENTIVE MAINTENANCE GUIDES

GUIDE NUMBER A-1

AIR-CONDITIONING MACHINE - PACKAGE UNITS

Frequency: Annual

Special Instructions: Prior to cooling season, open and tag electrical circuits.

Checkpoints:

1. Remove panels, clean entire unit.
2. Clean drip pan and drains. Paint as necessary.
3. Check bolts, nuts, electrical connections, anchors, etc.
4. Drain condenser, clean chemically, and neutralize. Clean and paint heads if needed.
5. Adjust or replace vibration eliminators.
6. Observe belt wear. Replace worn belts and/or adjust belt tension.
7. Check alignment of motor, fan, etc.
8. Replace filter, if required.
9. Check for refrigerant leaks.
10. Check oil level.
11. Check fan and motor. Clean fan blades, or rotor, and lubricate bearings.
12. Run machine and check operation, water supply and control valves, suction and discharge pressures, need for refrigerant; recheck for leaks, functioning of controls, temperature of discharge, air, etc.
13. Restore panels and clean up area and machine.

GUIDE NUMBER A-2
AIR-CONDITIONING, WINDOW UNITS

Frequency: Annual

Special Instructions: Disconnect electric cord to unit. Review manufacturer's instructions.

Checkpoints:

1. Clean condenser, cooling coil fins, and fans.
2. Remove dirt or dust from all interior parts.
3. Replace filter.
4. Inspect and adjust damper.
5. Lubricate motor and fan bearings.
6. Inspect gasketing, look for leaks between unit and window, and caulk as necessary.
7. Check for refrigerant leaks.
8. Start unit and observe operation.
9. Check temperature differential and controls.
10. Check frame of unit with ohmmeter for proper electric ground.
11. Replace covers (if any).
12. Clean area.

GUIDE NUMBER A-3

AIR-COOLED CONDENSERS

Frequency: Annual

Checkpoints:

Special Instructions: Open and tag electric circuits.

1. Vacuum or blow out dirt on coils and fins.
2. Service fan, motor, motor controls, gear box, etc.; lubricate as needed.
3. Check structure, touch up, or repaint as required.
4. If applicable, check cold weather selector and control(s).

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.

2. Look for signs of overheating, leakage, wear, abrasion, corrosion of pressure parts, or erosion of metal.
3. Clean burner nozzle and check for wear.
4. When unit is returned to service, check and adjust burner for optimum combustion efficiency.

GUIDE NUMBER A-6

BOILERS, CAST-IRON AND STEEL

Frequency: Annual

Special Instructions: Review manufacturer's instructions and ASME code for boilers. If boiler is part of an operating system, blanks should be installed to isolate the boiler from the system.

Checkpoints:

1. General

   a. Follow instructions in HBK MS-24 to remove boiler from service.
   b. Remove fly ash and soot from flue passages.
   c. If hydrostatic test is required by inspector, fill boiler and apply hydrostatic test, 1 1/2 times the operating pressure in the presence of qualified boiler inspector.
   d. Check fire sides, valves, and trim and mark position of leaks.
   e. Take proper safety precautions before working inside boiler, including tagging of valves and controls, and letting boiler cool down.

2. Water Sides

   a. Clean gauge glass and siphon loops to limit controls.
   b. See that petcocks and try-cocks open freely.
   c. Calibrate pressure and temperature gauges.

   If Internal Inspection is Required

   d. Remove handhole and manhole plates.
   e. Clean interior of boiler, wash down shell and drums to remove mud, loose scale, and deposits.
   f. Turbine tubes, check tube ends for leakage and corrosion. Reroll, rebead, and/or replace thin tubes.
   g. Examine complete water side for extent of corrosion, measure and record the location and depths of pits in drum internals, and feed connections, gauge glass, and steam pressure gauge outlets.

3. Exterior and Fire Sides

   a. Examine and clean water column and feed water regulators, high and low side alarms, drains, gauge glasses, siphon loops, petcocks and try-cocks.
   b. Look for signs of overheating, leakage, wear, abrasion, corrosion of pressure parts, or erosion of metal.
   c. Check tubes for evidence of blisters and pock marks.
   d. Check condition of all refractories for cracks, erosion, and caulk. Also expansion joints, baffles, dampers and actuating mechanisms, staybolts, etc.
   e. Check sootblower elements for misalignment, warping, and impingement on tubes.
   f. Test all nonreturn and stop valves, clean and replace as necessary.

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.

6. Check that ignition transformer supplies dependable arc. Adjust and regulate as required for clearance and air gap.
7. Clean and adjust draft regulator and air shutter on a natural draft burner to ensure excess air quantities are minimum for complete combustion. Test with gas analyzer.
8. On mechanical draft burners clean and check power-driven fan blower.
9. Check out forced-draft fan, clean fan and fan housing, check bearing, pulleys, and belts for wear and lubricate as necessary.
10. Check and clean filters, water separators, primary and secondary strainers.
11. Clean, check operation, and adjust controls and safeties.
12. Burners designed to change firing rates automatically should be checked for adequate proportioning changes in fuel and air rates.
13. Check constant level device to see that burner maintains proper oil level (within 1/3") at rated output.
14. Check to ensure that energy cannot feed back and energize ignition devices or feed valves after a control shuts off burner.
15. Replace nozzles and check for tight shutoff of fuel.
16. Check stacks for smoke or haze and adjust burner accordingly.
17. Take CO_2, O_2, and smoke readings. Compare CO_2 and flue gas temperature for determination of boiler burner efficiency. CO_2 should be 9 to 12%. Combustion efficiency should be at least 80%. Determine combustion efficiency according to instructions with flue gas test apparatus.

GUIDE NUMBER A-9

COILS, PREHEAT, REHEAT, ETC.
(Remote from Air Handler)

Frequency: Annual

Application: This guide applies to coils that are not part of an air-washer or air-handling unit.

Checkpoints:

1. Vacuum or blow out the fins, coils, etc.
2. Remove obstructions to airflow.
3. Check coils. Correct or report any leaks.
4. Test and inspect controls that protect against freezing.

GUIDE NUMBER A-10

CONTROLS, CENTRAL SYSTEM, HEATING AND AIR-CONDITIONING

Frequency: Annual

Special Instructions: Read and understand manufacturer's instructions before making adjustments or calibration. Stations include devices such as sensors, controllers, actuators, positioners, etc.

Checkpoints:

1. Check set point of controls (temperature, humidity, or pressure).
2. Compare control point with an external measuring device, note deviation, and adjust.
3. Check the unit over its range of control. If possible, impose simulated conditions to activate controls and check operation.

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.

3. Check structural members of tower for deterioration. Check bolts and tighten when tower wood is dry.
4. Replace tower fill when necessary.
5. Examine water nozzles for obstructions and proper water distribution.
6. Drain and replace lubricant in gear box.
7. Check alignment of motor to gear to fan.
8. Inspect motor, motor starter, belts, etc., for proper operation.
9. Clean and check operation of the water-treatment equipment. Check bleed line and setting in accordance with requirements.
10. Fill tower. Adjust bleed, float control valve for desired water level. Charge with water-treatment chemicals.

GUIDE NUMBER A-13

COOLING TOWERS

Frequency: 1 to 6 times annually

Application: This guide may be used to provide periodic flushing of cooling towers, and should be used only if the towers accumulate excessive debris during the operating season.

Checkpoints:

1. Disconnect motors; tag and lock circuits.
2. Drain tower; flush out with hose.
3. Clean distribution nozzles and screens.
4. Remove debris from area.
5. Return unit to service.

GUIDE NUMBER A-14

EVAPORATIVE CONDENSERS

Frequency: Annual

Special Instructions: Drain water from all lines prior to freezing weather.

Checkpoints:
(After the cooling season)

1. Remove dirt, trash, algae from water pans; flush.
2. Check water pans; paint if necessary.
3. Check water outlets and coil connections.
4. Change oil in gear reducer.
5. Check fan and pump; lubricate as required.
6. Check gear box, bearings, alignment, etc.
7. Check drive shafts.
8. Check control and float valves.
9. Inspect eliminators; unclog if necessary.
10. Inspect condenser coil, fins, sprays, connections, etc. Clean if required.
11. Check screens.
12. Check water-treatment equipment.
13. Check motors and starters.
14. Check structural fittings.
15. Continuous bleed line should be open.
16. Drain and flush thoroughly.
17. Clean chemically, using USPS-approved materials, and neutralize.

GUIDE NUMBER A-15

FANS, CENTRIFUGAL

Frequency: Annual

Special Instructions: Disconnect and tag circuit.

Checkpoints:

1. Check over unit thoroughly. Look for signs of rust, corrosion, or deterioration. Inspect interior of housing if there are openings to do so.

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-19

CONTROLS AND MECHANISMS
ROLL-TYPE FILTERS

Frequency: Annual

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

Checkpoints:

1. Inspect framework and structure. Look for loose or missing bolts, air leaks, condition of flashing or caulking, etc.
2. Inspect all moving parts for proper alignment, freedom of motion, excessive clearance or play, etc. Clean, adjust, or tighten as necessary.
3. Inspect powered roll and takeup roll for correct tracking of media. On manual operation check wheel or hand crank.
4. On motor drives, check pressure-sensing device(s) and/or pressure switches. Test settings for starting and stopping motor.
5. Inspect motor, starter, controls, and selector switch for auto warning or indicator lights.
6. Check oil in gearcase. Change or replenish as required. Perform required lubrication using graphite where it is suitable.

GUIDE NUMBER A-20

FILTERS, THROWAWAY
(Includes package and window units, etc.)

Frequency: 4 to 52 times annually

Special Instructions: Open and tag switches controlling fans. Change filters when the static pressure approaches the design maximum for the unit.

Checkpoints:

1. Remove and discard old filters.
2. Clean frame with vacuum.
3. Inspect frame, doors, etc.
4. Install new media.

GUIDE NUMBER A-21

FILTERS, ELECTROSTATIC

Frequency: 4 to 26 times annually

Special Instructions: Turn off supply to power unit. Turn off power unit safety switch; tag circuit. Ground bus trips, top to bottom. Review manufacturer's instructions.

Checkpoints:

1. Before securing unit, check indicators for defective tubes or broken ionizing wires.
2. Secure filter unit and fan.
3. Wash down each manifold until clean. Units with water-wash spray require approximately 4 minutes with warm water or 7 minutes with cold water.
4. If dry filters are dirty, remove dirt or replace filter.
5. While cells are drying, look for defects, particularly broken wires or hum suppressors. Wipe insulator with soft, dry cloth.
6. If unit requires disassembly, check it thoroughly; clean and adjust as required.
7. Restore to service and check for evidence of shorts. Make certain high voltage is present.

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.

3. Replace worn belts and adjust proper tension.
4. Lubricate motor(s) and fan(s) bearings.
5. Check alignment of motor and tighten.
6. Change filters.

SPRING

1. Clean evaporator and condenser coils.
2. Operate unit and check refrigeration. Charge.
3. Check thermostat.

FALL

1. Clean and check heat exchanger for leaks.
2. Check gas train and safety controls for adequacy and proper operation.
3. Set burner for maximum combustion efficiency.

GUIDE NUMBER A-26

REFRIGERATION MACHINES, ABSORPTION TYPE

Frequency: Annual

Special Instructions: Consult operating data to determine the temperature difference across the various system components as a guide to determining the condition of the evaporator and condenser tubes.

Checkpoints:

1. Evaporator Circuit
   a. Check and service evaporator pump, motor controls, starters, etc. Lubricate as prescribed.
   b. Clean and flush out seal, water tank seal chamber, and associated lines.
   c. Check purge valve diaphragm; replace if necessary.
   d. Inspect ball in check valve.
   e. Inspect and clean evaporator spray header, nozzles, etc. Replace defective units.
   f. If operating data indicated the refrigerant temperature is slowly rising, test sample for the presence of solution. If excessive, follow the manufacturer's instructions for distilling refrigerant.
2. Solution Circuit
   a. Check and service solution pump, motor controls, starters, etc. Lubricate as prescribed.
   b. Check absorber and generator sight glasses. Replace if required.
   c. Check purge valve diaphragm. Replace if required.
   d. Inspect and clean solution spray nozzles. Replace defective units.
3. Condenser Circuit
   a. Clean condenser water tubing in the condenser and absorber. Use nylon brush or other soft material.
   b. Allow condenser water tubing to dry to determine if scale exists. Have scale chemically tested if necessary. Acid clean if necessary and flush.
4. Purge System
   a. If purge system indicates the system is not tight, follow manufacturer's recommendations for removing solution and for leak testing.
   b. Clean purge tank and purge with water following steps prescribed by the manufacturer.

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.

2. Chiller

   a. Note chiller performance on log sheets (inlet and outlet chilled water temperature and refrigerant temperatures).
   b. If efficiency is reduced, inspect for control malfunction or sensing element failure.
   c. Systems requiring minimum or no raw water make-up should be drained and inspected only in emergencies. The pH should be maintained between 7 and 8. To determine that the system is tight, disconnect automatic make-up water system and feed by hand. Frequency for cleaning on such systems should be once in every five years. (Note: New installations shall be cleaned after one year of operation.)
   d. Clean tubes with nylon brush or similar material.
   e. Blow tubes free of trapped water if unit is to be exposed to freezing temperatures.
   f. Replace heads, installing new gaskets.
   g. Treat water to control corrosion.

3. Water-Cooled Condensers

   a. Review log and note condenser performance by inlet and outlet temperatures, head pressure, and temperature of refrigerant.
   b. Remove condenser heads.
   c. Remove mud, debris, scale, and other sediment collected during operation.
   d. Clean water boxes and tube sheets. Scrape and paint with epoxy.
   e. Clean tubes with nylon brush or other similar material and inspect for signs of corrosion.
   f. Blow trapped water from tubes after cleaning if unit is exposed to freezing temperature.
   g. Replace heads, installing new gaskets.
   h. Chemically test scale, if necessary.
   i. If condenser is chemically cleaned, neutralize after cleaning.

GUIDE NUMBER A-28

HEATER, ELECTRIC, IN-DUCT

Frequency: Annual

1. Vacuum or blow all dust and dirt from coils.
2. Remove airflow obstructions.
3. Visually inspect for cracked or broken insulators, distorted or burned coils, and loose connections; replace as needed.
4. Inspect operating contacts and replace if needed.

GUIDE NUMBER A-29

HEATER, ELECTRIC, BASEBOARD

Frequency: Annual

1. Remove cover; clean coil, fins, and cover grille with vacuum.
2. Check electric connections and operating contacts; replace as needed.
3. Check mechanical fastenings to wall; repair if needed.
4. Replace cover.

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, thermocouple, 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-1

ALARMS: MISCELLANEOUS, BURGLAR, CIVIL DEFENSE, TRESPASS, ETC.

Frequency: Quarterly

Special Instructions: Review applicable manufacturer's instructions.

Checkpoints:

1. Inspect all terminal contacts, connections, etc., at each station and receiving point. Tighten or adjust as needed.
2. Check source of supply for availability and reliability.
3. Test operation by real or assimilated action.
4. Clean; lubricate if needed. Wipe off excess.
5. Inspect remotely located alarms for obstruction, damage, etc.
6. Battery maintenance is described under another guide.

GUIDE NUMBER E-2

BATTERY CHARGERS

Frequency: Quarterly

Application: This guide is for chargers used for battery-powered custodial equipment and items related to building maintenance functions, including switch gear and alarm battery chargers.
Special Instructions: Use no open flames, cigarettes, etc., in battery-charging room or area. Review manufacturer's instructions. Open and tag electric circuits.

Checkpoints:

1. Check ventilation of charger, and exposure to moisture or water.
2. Clean accessible interior and exterior parts. Touch up paint as required.
3. Check tightness of electrical connections including alligator clips.
4. Inspect wiring and connections in charging circuit.
5. Record charger output voltage.
6. Report any deficiencies or need for repairs.

GUIDE NUMBER E-3

CLOCKS, ELECTRIC, CENTRAL SYSTEM

Frequency: Semiannual

Special Instructions: Review manufacturer's instructions. This work should be done in spring and fall when time is changed from standard to daylight-saving and back.

Checkpoints:

1. Clean dirt and dust from interior and exterior of cabinet.
2. Adjust relays; check transmission of signal.
3. Tighten contacts and terminal screws.
4. Burnish contacts if necessary.
5. Perform work suggested by manufacturer's instruction book.

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.

3. Raise voltage from charger for 8 to 24 hours to give the batteries an equalizing charge. Then, return to floating rate.
4. Check as-left voltage and specific gravity for each cell and record on Form 4815 as above. Compare reading with manufacturer's recommendations.
5. Wipe dirt accumulation from batteries with disposable cloth taking care not to drop foreign matter into batteries.
6. Clean terminals and tighten connections checking the condition of wiring.
7. Check condition of battery table for deterioration. Wooden members should receive special attention on this inspection.
8. Report any deficiencies for immediate correction.

GUIDE NUMBER E-6

EDISON, NICKEL-IRON-ALKALINE 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 electrolyte; it is injurious to the skin and clothing.
2. Never smoke or carry an open flame in or near the battery room or area.
3. Wear face shield, apron, and gloves.

Checkpoints:

1. Check and record voltage of entire battery.
2. Add distilled water to bring electrolyte up to required level. Record water added.
3. Clean batteries removing salt accumulation. Wiping with a clean disposable cloth is usually sufficient.
4. Check floating charge voltage on battery and make required adjustments.
5. Check and record specific gravity on Form 4815, once per year.
6. Report deficiencies for immediate correction.

GUIDE NUMBER E-7

LIGHTING, OUTSIDE

Frequency: 1/2 to 2 times per year

Application: This guide applies to parking lots, streets, loading docks, and perimeter lighting, and provides for group relamping and maintenance of such fixtures outside the building. The frequency should correspond with the group relamping frequency as identified in HBK MS-39.

Checkpoints:

1. Open and tag switch.
2. Remove old lamp and clean fixture including reflector, refractor, and globes.
3. Inspect condition of wiring, contacts, terminals, and sockets. Look for evidence of overheating.
4. Install new lamp and assemble, checking gaskets for proper seat.
5. Test operation of automatic switches.
6. Inspect lamp standards and mounting devices.

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

has dropped, the windings should be dried out before the motor is started.
9. Check motor mountings, supports, and couplings for tightness or defects.
10. Remove tags and return unit to service.
11. Read load on motor at no load and/or full load and record on preventive maintenance record.

GUIDE NUMBER E-31

EMERGENCY GENERATORS - GASOLINE OR NATURAL GAS ENGINES

Frequency: Annual

Special Instructions: Have approved type fire extinguishers readily available. Allow no open flame or smoking in area. Use safety-type fuel cans only. Review manufacturer's instructions.

Checkpoints:

1. Set distributor point dwell. Replace points, capacitor, rotor, and spark plugs after 100 hours of operation.
2. Set timing and distributor advance. Timing should be set at both idle and operating speed of generator.
3. Adjust carburetor and governor for proper operating speed.
4. Check fuel supply. If fuel is over 9 months old, discard and replace with fresh fuel. Gasoline deteriorates with age, so a large supply of fuel should not be maintained. Prior arrangements should be made to purchase fuel locally for emergencies.
5. Change engine oil and filter and perform other lubrication of engine and generator.
6. Inspect cooling system for leaks, air obstructions, "V" belt tension, and proper antifreeze solution. Make needed adjustments.
7. Inspect generator winding and clean if needed.
8. Clean commutator and collector rings; check brush wear and tension in accordance with manufacturer's instructions.
9. Inspect generator heaters.
10. Report needed repairs or observed defects.

GUIDE NUMBER E-32

EMERGENCY GENERATORS - DIESEL POWER

Frequency: Annual

Special Instructions: Have approved type fire extinguishers readily available. Allow no open flame or smoking in area. Use safety-type fuel cans only.

Checkpoints:

1. Change fuel filters.
2. Inspect and adjust rack on unit injector or fuel distributor pump according to manufacturer's instructions.
3. Check governor; adjust for correct speed.
4. Determine fuel level, drain water from tank, and inspect for contamination. Prior arrangements should be made for local procurement of fuel in emergencies.
5. Change engine oil and filter and perform other lubrication on engine and generator.
6. Inspect cooling system for leaks, air obstructions, "V" belt tension, and proper antifreeze solution. Make needed adjustments.
7. Inspect generator winding and clean if needed.
8. Clean commutator and collector rings. Check brush wear and tension in accordance with manufacturer's instructions.

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.

d. Gradually release air pressure and note pressure at which pressure switch deactivates signal. When necessary, adjust pressure switch. Repressurize system.

3. Temperature supervision - mechanically activate temperature switches and check for signal. Adjust if necessary.
4. Water-level supervision - check float mechanism for corrosion and freedom of movement. Move float until signal is received. Adjust if necessary.

GUIDE NUMBER E-35

AUTOMATIC FIRE DETECTION OR ALARM DEVICES

Frequency: Semiannual

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 it is both feasible and safe, the environmental conditions being monitored should be altered to actuate the device. Check all detection devices for drainage and proper anchorage.

Checkpoints:

1. Inspect conduit for loose hangers or clamps.
2. Ion chamber detectors - activate alarm with freon aerosol spray or by blowing smoke near detector. Test for proper signals. Clean according to manufacturer's instructions.
3. Self-restoring temperature detectors - increase temperature, or mechanically complete circuit and test for proper signals. Make adjustments if necessary (Snap action or bimetallic strips).
4. Nonrestorable temperature detectors - check tension on thermostatic cable. Check continuity of circuits by use of test buttons or by mechanically completing circuit. Test for proper signals.
5. Pneumatic tube detectors - in locations susceptible to damage, check tubing for crimps or damage. Heat tubing by means of resistance heater, hot water, etc., and test for proper signals. Adjust release device and replace diaphragm if necessary.
6. Photoelectric detectors - inspect for proper alignment. Diffuse or obstruct the light rays and test for proper signals. Clean according to manufacturer's instructions.
7. Water flow alarms (zoned) - open valve to test pipe or drain pipe (usually located at sprinkler risers) or open Inspector's test valve (located at end of most remote branch line) and check for proper transmission of signals from water flow paddle alarms or pressure switches. This should be done in conjunction with alarm check valve maintenance (see Guide Number P-23).

GUIDE NUMBER E-36

FIRE ALARM SYSTEM - CONTROL BOARDS

Frequency: Daily

Checkpoints:

1. Check for proper voltage from power supply.
2. Check for ground, shorts, and open faults.
3. Identify and correct any problems indicated by trouble signals or test buttons.

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.

GUIDE NUMBER L-1

ELEVATORS, ELECTRIC

Frequency: Annual (First Month)

Special Instructions: Review manufacturer's instructions.

Checkpoints:

1. Door Operation - Clean, lubricate, and adjust brake, operation of checks, linkages, gears, wiring, 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, pawl magnets, wiring, contacts, relays, tape drive, and broken tape switch.
4. Car - Clean, adjust, and lubricate car door and gate tracks, pivots, hangers, car grille, stile channels, and side and top exits.
5. Leveling - Clean, adjust, and lubricate leveling switches, leveling operation, hoistway vanes, magnets, and inductors.
6. Hoistway Doors - Clean, lubricate, and adjust tracks, hangers, and upthrust.
7. Machines - Inspect brake and brake drum, drive sheave and motor, worm and gear backlash, thrust end play, and any bearing wear. Remove, clean, and lubricate brake cores on DC brakes; clean linings if necessary; and inspect for wear.
8. Miscellaneous - Observe operation of signal and dispatching systems. Inspect compensating chain hitches, drum buffers, rope clamps, slack cable switch, couplings, keyways, indicator dials, and pulleys. Check load-weighing device and dispatching time settings. 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-2

ELEVATORS, ELECTRIC

Frequency: Annual (Second Month)

Special Instructions: Review manufacturer's instructions.

Checkpoints:

1. Door Operation - Clean, lubricate, and adjust brake, operation of checks, linkages, gears, wiring, 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, pawl magnets, wiring, contacts, relays, tape drive, and broken tape switch.
4. Ropes - Inspect all fastenings and ropes for wear and lubrication.
5. Car - Clean, adjust, and lubricate car door or gate tracks, pivots, hangers, car grille, and stile channels.
6. Car Operating Box - Check, clean, and adjust contacts, switches, and lubricate car operating box.
7. Motors and Generators - Clean all commutators; renew or reseat brushes as necessary. Clean armatures and motors with blower or vacuum. Inspect armature and rotor clearances. Check motor and

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.

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, pawl magnets, wiring, contacts, relays, tape drive, and broken tape switch.
4. Leveling - Clean, adjust, and lubricate leveling switches, leveling operation, hoistway vanes, and magnets or inductors.
5. Car - Clean, adjust, and lubricate car door or gate tracks, pivots, hangers, etc.
6. Machine - Inspect worm and gear backlash, thrust end play, and any bearing wear in machine.
7. Hoistway Doors - Clean, lubricate, and adjust tracks, hangers, and upthrust.
8. Pit - Lubricate compensating sheave; inspect hitches; check oil level in buffers; inspect governor and tape tension sheave fastenings; empty and clean oil drip pans.
9. Sheaves - Inspect sheaves to ensure they are tight on shafts. Sound spokes and rim with hammer for cracks.
10. Miscellaneous - Observe operation of signal and dispatching systems. Inspect compensating chain hitches, drum buffers, rope clamps, slack cable switch, couplings, shafts, keyways, etc. Clean, adjust, and lubricate as necessary.
11. Emergency Light - Check operation.
12. Oil Level - Check level in oil buffer.
13. 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-5

ELEVATORS, ELECTRIC

Frequency: Annual (Fifth 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, operation of cams, rollers, etc. Inspect electronic detector chassis.
2. Door Closer - Clean, adjust, and lubricate pivot points, fastenings, checking devices, and sill trips. Observe operation of checks, interlocks, etc. Adjust as necessary.
3. Selector - Clean, adjust, and lubricate brushes, dashpots, traveling cables, chain, brush and pawl magnets, wiring, contacts, relays, tape drive, broken tape switch, and traveling nut and gears.
4. Car - Clean, adjust, and lubricate car door or gate tracks, pivots, hangers, etc.
5. Ropes - Inspect all fastenings and ropes for wear and lubrication. Inspect all rope hitches and shackles and equalize rope tension.
6. Hall - Inspect hall button contacts, springs, and wiring. Clean and lubricate.
7. Motors and Generators - Clean all commutators; renew or reseat brushes if necessary.
8. 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.
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.

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. Leveling - Clean, adjust and lubricate leveling switches, leveling operation, hoistway vanes, and magnets or inductors.
5. Hoistway - Examine guide rails, cams, fastenings, and counterweights. Inspect and test limit and terminal switches.
6. Hoistway Doors - Clean, lubricate, and adjust tracks, hangers, and upthrust.
7. Car - Clean, adjust, and lubricate car door or gate tracks, pivots, hangers, etc.
8. Machine - Inspect worm and gear backlash, thrust end play, and any bearing wear in machine.
9. Miscellaneous - Inspect drum buffers, rope clamps, slack cable switch, coupling, shaft, keyways, etc. Clean, adjust, and lubricate. Observe operation of signal and dispatching system. Check compensating chain hitches. Lubricate indicator dials and pulleys. Clean car grille and stile channels. Check load-weighing device and dispatching time settings.
10. Emergency Light - Check operation.
11. Oil Level - Check level in oil buffer.
12. 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-8

ELEVATORS, ELECTRIC

Frequency: Annual (Eighth 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 - Clean, adjust, and lubricate car door or gate tracks, pivots, hangers, etc.
5. Motors and Generators - Clean all motor commutators; renew or reseat brushes if necessary.
6. Ropes - Inspect all fastenings and ropes for wear and lubrication.
7. Car Operation Box - Check, clean, and adjust contacts and switches; lubricate car operating box.
8. Travel Cable - Inspect insulation, hanging, and junction box connections.
9. Miscellaneous - Observe operation of signal and dispatching system. Inspect drum buffers, rope clamps, slack cable switch, couplings, shafts, keyways, etc. Clean, adjust, and lubricate.
10. Emergency Light - Check operation.
11. Oil Level - Check level in oil buffer.
12. 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-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, 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 - 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.

8. Pit - Inspect governor and tape tension sheave fastenings. Empty and clean drip pans. Lubricate compensating sheave and inspect hitches. Check oil level in buffers.
9. Miscellaneous - Observe operation signal and dispatching systems. Inspect drum buffers, rope clamp, slack cable switch, couplings, shafts, keyways, etc. Clean, adjust, and lubricate.
10. Emergency Light - Check operation.
11. Oil Level - Check level in oil buffer.
12. 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-11

ELEVATORS, ELECTRIC

Frequency: Annual (Eleventh 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 and operation of cams, rollers, etc.
2. Door Closer - Clean, adjust, and lubricate pivot points, fastenings, checking devices, and sill trips. Observe operation of checks, interlocks, etc., and adjust as necessary.
3. Selector - Clean, adjust, and lubricate brushes, dashpots, traveling cables, chain, brush, wiring, contacts, relays, tape drive, broken tape switch, and pawl magnets. Inspect traveling nuts and gears for wear.
4. Ropes - Inspect all fastenings and ropes for wear and lubrication. Check all ropes, hitches, and shackles; equalize rope tension.
5. Car - Clean, adjust, and lubricate car gate tracks, pivots, hangers, etc.
6. Motors and Generators - Clean all commutators; renew or reseat brushes as necessary.
7. Miscellaneous - Observe operation of signal and dispatching systems. Inspect drum buffers, rope clamps, slack cable switch, coupling, shafts, keyways, etc. Clean, adjust, and lubricate.
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-12

ELEVATORS, ELECTRIC

Frequency: Annual (Twelfth 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. 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.

GUIDE NUMBER L-15

ESCALATORS

Frequency: Weekly

Checkpoints:

1. Ride escalator. Check operation for smoothness, unusual vibration or noise, condition of handrails, etc.
2. Inspect comb plates at both ends of escalator for broken teeth and check for proper clearance between combs and step treads. Check for broken step treads.
3. Check clearance between steps and skirt panel. Look for anything (loose trim, screws, or bolts) that could snag or damage clothing or cause injury. Check operation of handrail brushes.
4. Clean escalator machine space.
5. Lubricate step rollers, step chain, drive gears or chains, handrail drive chains, etc., according to manufacturer's instructions. Observe gears and chains for signs of wear, misalignment, etc. Adjust as required.
6. Check motor for signs of overheating.
7. Inspect controller for loose leads, burned contacts, etc. Repair as required.
8. Clean handrails as required.
9. Check escalator lighting. Replace bulbs as required.

GUIDE NUMBER L-16

ESCALATORS

Frequency: Annual

Checkpoints:

1. Set up barricades and signs directing people to stairs or elevators. Spread tarps on floor at lower end of escalator.
2. Remove steps as required to provide clear access to escalator pan, and place steps on tarp.
3. Starting in the machine space, thoroughly clean escalator, working from top to bottom.
4. Clean all tracks and check for wear or rippling. File tracks if required. Check all step and chain rollers. Adjust step and chain roller upthrust as required. Adjust transfer bars or guides, or replace as necessary.
5. Remove upper panel on each side of escalator, taking care not to scratch or gouge panel. Check handrail tension device and handrail drive assembly. Adjust and lubricate as required.
6. Check operation of all safety devices including skirt switches, handrail switches, broken chain switches, lower unit tension devices, etc.
7. Upthrust Safety Switches:

   a. Open and lockout the main disconnect.
   b. Clean all four upthrust safety switches.
   c. Connect a circuit continuity tester, such as an ohmmeter, across the safety control circuit. Operate each switch and note if continuity is lost.
   d. Lift up on the riser of the step located on the lower curve so that the step comes into contact with the upthrust track. Determine that the safety circuit continuity is broken and is reestablished when the step riser is released. This will confirm the mechanical integrity of the upthrust device as well as its electrical function within the electrical control circuit.

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.

9. Inspect hoist ropes for worn, frayed, or broken strands.
10. Perform any work prescribed by manufacturer that is not indicated here.
11. Perform lubrication.
12. Clean, wire brush, and touch up paint as required.

GUIDE NUMBER L-19

DUMBWAITERS

Frequency: Quarterly

Special Instructions: Refer to manufacturer's literature. Open and tag electric circuits.

Checkpoints:

1. Inspect and clean hoistway. Remove trash from pit.
2. Examine sheaves, cable, counterweight, etc. Look for loose bolts, misalignment, weak or improper cable fasteners, etc. Make safety or reliability tests if anything questionable is found.
3. Examine car for structural features, appearance, need for attention, surface condition, condition of paint, etc.
4. On hand-powered units, examine cable pulls for loose strands, sharp edges, rough surfaces, or other potential hazards.
5. Inspect power unit, motor controls, and all accessories.
6. Check all indicators, lights, bull's-eyes, controls, safety devices, etc.
7. Comply with lubrication scheduled.
8. Report all deficiencies and needed repairs.

GUIDE NUMBER M-1

AIR COMPRESSORS

Frequency: Annual

Special Instructions: Review manufacturer's instructions.

Checkpoints:

1. Test the pressure gauge(s) and cutout and cut-in pressure. Use test gauge to test accuracy of gauge on machine. Gauge should be within 10%.
2. Check safety valve.
3. Tank to be inspected and tested by qualified inspector.
4. On two-stage compressor(s), check intermediate pressure.
5. Listen for knocks, and inspect for mechanical failures. Report any leaks to supervisor.
6. Test compression; correct or repair as necessary.
7. On water-cooled compressor(s) check for incrustation or excessive corrosion.
8. Clean moisture traps in system. Check operation of timed-moisture-release system, if so equipped.
9. Change oil in crankcase.
10. Check controls, belts, pulleys, alignment, etc.
11. Check air-cooled heat exchanger.
12. Check motor, bearings, starting switches, controller, pressure switches, etc.
13. Clean equipment; touch up or repaint as required.
14. Comply with lubrication schedule.

GUIDE NUMBER M-2

LAWNMOWERS AND EDGERS

Frequency: Every 50 Operating Hours

Application: Gasoline-powered, hand-operated, rotary mowers and edgers. Maintenance should be scheduled after every 50 hours of operation or twice a season. Routine daily lubrication should be accomplished by operator.

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.

Checkpoints:

1. Dust or wipe clean all parts of machine. Examine structural features.
2. Blow out electric motor. Inspect starter, controls, push button, upper and lower limit switch, etc. Clean and adjust as required.
3. Check drive unit, mechanical features, and all moving parts.
4. Comply with lubrication schedule recommended by manufacturer.
5. Adjust operating mechanism.

GUIDE NUMBER M-6

INCINERATOR

Frequency: Annual

Checkpoints:

1. Thoroughly clean furnace, ash pit, grates, etc.
2. Remove fly ash and soot from flue-gas passages.
3. Examine furnace. Replace burned or damaged parts.
4. Inspect for loose, broken, or missing refractory or fire brick.
5. Examine all doors, inspect and/or clean out ports. Make them fit properly and stop any air leaks around them.
6. Check uptakes or connections to stack or chimney. Remove dirt, fly-ash scale, etc.
7. Examine dampers for condition and freedom of motion.
8. Examine structure and supports. Look for warped or sagging members, cracks, or other indications of weakness.
9. Check charging chute, frame, cover, etc. Replace broken, missing, or defective parts.
10. Check all instruments, gauges, etc. Test for proper operation.
11. Repair any damages or missing insulation.
12. Inspect stack or chimney for holes, cracks, or deterioration.
13. Inspect spark arrestor or screen on top of stack. Repair holes or replace.
14. Touch up or paint as required.

GUIDE NUMBER M-7

DOORS, POWER OPERATED

Frequency: Semiannual

Application: Warehouse or large overhead doors.

Special Instructions: Review manufacturer's instructions.

Checkpoints:

1. Inspect general arrangement of door and mechanism, mountings, guides, windlocks, anchor bolts, counterbalances, weather stripping, etc. Clean, tighten, and adjust as required.
2. Operate with power from stop to stop and at intermediate positions. Observe performance of various components, such as brake, limit switches, motor, gear box, etc. Clean and adjust as needed.
3. Check operation of electric eye, treadle, or other operating devices.
4. Check manual operation. Note brake release, motor disengagement, functioning or hand pulls, chains, sprockets, clutch, etc.
5. Examine motor, starter, push button, etc.; blow out or vacuum if needed.
6. Inspect gear box; change or add oil as required.
7. Perform required lubrication.
8. Clean unit and mechanism thoroughly. Touch up paint where needed.

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.

b. Inspect cylinder, ram, packing glands, etc. Add or renew packing as required.
c. Change oil as required.

5. For electromechanical units:

a. Clean and inspect coupling, reduction gear, sprockets, chain, gear trains, screw and lever, and/or other mechanical features. Look for misalignment, loose bolts, evidence of binding or wear, excessive clearance, etc. Tighten as necessary.
b. Examine lubrication devices. Service if required.
c. Test operation of ramp in all directions using a load if possible. Ensure that ramp holds and does not creep when load is applied or removed. Adjust if necessary.
d. Check manual operation, power disengagement, etc.
e. Lubricate as required.

GUIDE NUMBER M-11

FIRE DOORS - STAIRWELLS AND EXITWAYS (SWINGING)

Frequency: Quarterly

Checkpoints:

1. Remove all hold-open devices except approved smoke or magnetic operated releases.
2. Check hang and swing for close fit. Doors must latch on normal closing cycle and have a neat fit.
3. Remove any obstructions that retard full swing or movement of door.
4. Test operation of panic hardware.
5. Inspect door coordinates on pairs.
6. Check operation of any special devices such as smoke detectors or magnetic door releases.
7. Inspect door for damage.

GUIDE NUMBER M-12

FIRE DOORS - SLIDING TYPE

Frequency: Quarterly

Checkpoints:

1. Clean track.
2. Lubricate all pulleys.
3. Inspect for damage, worn and binding cable or chain, and proper threading through pulleys.
4. Replace fusible links and other heat-actuated devices that have been painted. Check operation of heat-actuated devices other than fusible links.
5. Replace damaged or stretched cables or chains and adjust to proper length.
6. Check counterweight for proper suspension.
7. Operate door by disconnecting or lifting counterweight, or by other appropriate means.
8. Check for proper fit in binders and tight fit of wedge against stay roll. Inspect stay roll for wear.
9. Check for breaks in face covering of doors.
10. Examine tin-clad and Kalamein doors for dry rot.
11. Inspect all hardware for damage or wear.

GUIDE NUMBER M-13

STATIONARY PACKERS

Frequency: Weekly

Checkpoints:

1. Observe all safety precautions. Shut off current before performing activities listed below.

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.

9. Follow manufacturer's instructions regarding preventive maintenance of motor.

GUIDE NUMBER M-17

POWER LIFTS
(Vert-A-Lift, etc. or other lift devices used in building maintenance)

Frequency: Monthly

Special Instructions: Daily battery charging, cleaning, and minor maintenance shall be done by personnel using the lift.

Checkpoints:

1. Visually check for needed repairs, leaks, etc.
2. Check battery water level and specific gravity.
3. Check electrical terminals; tighten and clean as required.
4. Check and tighten critical structural bolts.
5. Lubricate in accordance with manufacturer's instructions.

GUIDE NUMBER M-18

FLOOR SCRUBBER, AUTOMATIC
(Battery-powered scrubber vacuum)

Frequency: Monthly

Special Instructions: The daily charging of the batteries shall be done by the operator.

Checkpoints:

1. Check condition and adjustment of squeegee brushes, etc. and replace as needed.
2. Check electrical terminals; clean and renew as needed.
3. Check the specific gravity of battery electrolyte and replace to determine that batteries are good and being properly charged.
4. Visually check machine for need of repairs, leaks, etc.
5. Lubricate in accordance with manufacturer's instructions.

GUIDE NUMBER M-19

SNOW BLOWER, WALKING TYPE

Frequency: Every 50 hours

Application: Gasoline-powered, walk-behind type. Maintenance should be scheduled every 50 hours of operation. Routine daily lubrication should be accomplished by the operator.

Checkpoints:

1. Change engine oil. (Note: Oil should be changed and gasoline drawn at end of season prior to storage).
2. Service air and fuel filters.
3. Check for rust and apply paint or preservative as appropriate.
4. Clean and gap or replace spark plug.
5. Inspect for proper adjustment and operation.

GUIDE NUMBER M-20

LOAD LEVELERS

Frequency: Quarterly

Application: This is for below-grade units which raise or lower the truck to match the dock.

Safety: When working in pit, lock and tag electric controls, place barricade and sign around entrance, and use a 4x4 timber or other device to block unit.

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 SYSTEMS

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.

5. Check that nonrising stem and underground valves are marked with direction in which to open. If not, permanently mark valve with proper direction to open.
6. Lubricate outside stems, and other friction points used for operating valves.
7. Remove any tamper locking devices and completely close (or open) valves. Check that waterflow has ceased when valve is closed.
8. Inspect for leaks.
9. Reopen (or close) valve and check for leaks at stem and joints.
10. Replace tamper seals or locks.

GUIDE NUMBER P-3

FIRE EXTINGUISHER, PORTABLE, STORED-PRESSURE TYPE

Frequency: Annual

Special Instructions: This maintenance is a thorough examination for deficiencies requiring repair or replacement. Deficiencies must be repaired or the extinguisher replaced. Hydrostatic test must be performed on damaged or corroded shells. Extinguishers 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. Unless otherwise indicated, this guide is applicable to stored-pressure type extinguishers, with or without pressure gauge, regardless of the extinguishing agent used, e.g., multipurpose dry chemical, Halon, carbon dioxide (CO_2), etc. See Guide P-5 for additional requirements. Review HBK MS-56 for additional information on fire extinguishing equipment.

Checkpoints:

1. Read the Form 4705 inspection tag and note if hydrostatic testing is required before the next annual maintenance. Report those due for testing to maintenance supervisor or control office for accomplishment before due date. See HBK MS-56 for test frequency.
2. Inspect the shell for corrosion, mechanical damage (denting or abrasion), paint condition, presence of repairs (welding, soldering, brazing, etc.), and broken hanger attachment concealing surface damage (nicks or corrosion).
3. Inspect the nameplate for illegible wording, corrosion, and loose plate. Replace labels with the new, pictographic type. See HBK MS-56, Section 442.
4. Inspect the nozzle for damage, deformation, cracks, blocked openings, damaged threads (corroded, crossthreaded, or worn), and aging (brittleness).
5. Inspect hose assembly for damaged hose (cut, cracked, worn, or plugged), damaged couplings or swivel joint (cracked or corroded), damaged threads (corroded, crossthreaded or worn), and inner tube cut at couplings.
6. Ensure the valve locking device is in place and inspect for damage (bent, corroded, or binding).
7. If extinguisher has a pressure gauge, tap gauge lightly to determine if pointer is immovable or jammed. Inspect for missing pointer; missing, deformed, or broken crystal; illegible or faded dial; corrosion; dented case; and damaged crystal retainer. Read gauge. If not in operating range, remove, replace, and submit extinguisher for recharging or hydrostatic test.

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

must be tested and recharged by a commercial firm. Review HBK MS-56. Determine if an extinguisher can be replaced with a new one at less expense. Note: Test frequency for extinguishers with brazed-brass or mild-steel shells is every 12 years.

Checkpoints:

1. Operate stored pressure and cartridge type extinguisher and check performance.
2. Dismantle and remove all traces of extinguishing agent (dry chemical or dry powder) from inside of shell and hose assembly.
3. Insert plug into shell opening (External cartridge type extinguishers only).
4. Fill with water and connect the test pump.
5. Secure shell in protective cage and apply proper test pressure. Pressure to be applied at rate so test pressure is reached within one minute.

Factory Test Pressure (Shown on Nameplate)	Hydrostatic Test Pressure
350 psi or greater	The larger of 300 psi or 75% of Factory Test Pressure
Less than 350 psi	75% of Factory Test Pressure

6. Observe shell and gauge for any distortion or leakage. After 1 minute, release pressure. Destroy shells that fail this test.
7. All dry chemical and dry powder extinguishers must have all traces of water removed from extinguishing agent, shell, hose, and nozzle. A heated airstream is recommended with its temperature not exceeding 150°F.
8. Weigh replacement cartridge to ensure that it is full of gas.
9. Recharge extinguisher according to manufacturer's instructions.
10. Affix permanent record, Form 4705 or equivalent, on extinguisher with year of hydrostatic test.

GUIDE NUMBER P-6

FIRE EXTINGUISHING SYSTEMS, FIXED

Frequency: Semiannual

Special Instructions: The work required by this procedure may cause the activation of an alarm and/or a supervisory signal. The maintenance manager and control center or the fire department that will receive the alarm or signal must be notified prior to start of work. When replacement cylinders are received from supplier, verify that hydrostatic test date is current. This guide is applicable to all fixed CO_2 and Halon systems unless otherwise indicated.

Checkpoints:

1. Check cylinder for the date of the last hydrostatic test (date stamped on cylinder).
2. Replace those cylinders for hydrostatic testing if the elapsed time exceeds the test interval specified in HBK MS-56 for the specific extinguisher type.
3. Weigh remaining cylinders. Replace for repair and/or recharging those Halon cylinders which show a net weight loss in excess of 5% or pressure loss of more than 10%. Replace for repair or recharging those CO_2 cylinders which show a net weight loss in excess of 10% or a pressure loss of more than 10%.
4. Check entire system for evidence of leaks.

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.

15. Clean and touch up or repaint as required.
16. Clean up area. Remove tags and restore to service.
17. Observe operating cycle time. Blowing period should be 30 to 60 seconds.

GUIDE NUMBER P-11

SUMP PUMPS

Frequency: Annual

Checkpoints:

1. Pump out and remove pit sediment.
2. Inspect and clean strainer.
3. Flush pit and wipe pump down.
4. Repack (if required) and lubricate pumps.
5. Check bail, float, rod, and guides.
6. Inspect motor, switch, controls, etc. Clean, adjust, and lubricate as required.
7. Check pump operation; observe operation of check valve(s).
8. Inspect piping, pipe supports, etc.
9. Touch up paint as required.
10. Clean up area.

GUIDE NUMBER P-12

TANKS, WATER (ALL TYPES)

Frequency: Every 3 Years

Special Instructions: Maintenance shall be coordinated with inspections specified in Section 10.

Checkpoints:

1. Examine exterior of tank including fittings, manholes, and handholes, for leaks or signs of corrosion. Correct as indicated.
2. Drain and flush tank.
3. Open tank and remove rust, scale, and buildup by scraping, wire brushing, or shot cleaning.
4. Inspect thoroughly the interior of the tank; record the size and depth of pits, presence of cracks, and condition of openings, fittings, welds, rivets, and joints.
5. Coat with epoxy or other approved protective coatings.
6. Inspect structural supports and repair or replace damaged insulation or covering.
7. Clean, test, and inspect sight glasses, valves, fittings, drains, and controls.
8. Touch up or repaint exterior of covering as required.
9. Perform hydrostatic test if required by inspector. Hydrostatic test shall be supervised by qualified pressure vessel inspector.
10. Fill and return to service.

GUIDE NUMBER P-13

VALVES, REGULATING
(Steam valves at pressure reduction stations)

Frequency: Annual

Application: Single or double seated; diaphragm or spring loaded, pilot operated valves.

Checkpoints:

1. Clean strainer ahead of valve.
2. Check valve head and seats for wear or cuts.
3. Replace valve if seats need regrinding and have valve overhauled by manufacturer.
4. Examine steam quality for foreign matter if valves are damaged.
5. Examine pilot lines for dirt.
6. Check steam gauges.

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.

1. Observe the Differential Gauge with Bypass Valve #1 closed and Test Cocks #2 and #3 open. The gauge should remain at a reading of at least 5 psi. If it drops below this, the Check Valve is leaking and must be inspected.
2. Also, the reading must be at least 3 psi more than Relief Valve opening pressure.

Test Check Valve 2

The Check Valve must be tight against reverse flow under all pressure differentials.

1. Connect the "high" side of the Differential Pressure Gauge to Test Cock #4 (third hose).
2. Open Test Cocks #2, #3 and #4. With Bypass Valve #1 closed and Bypass Valve #2 open, observe gauge reading. The differential pressure should not drop to the relief valve opening point.

Restore Operation

Restore all Valves and Test Cocks to their original positions. (Note: This procedure is for a FEBCO Model 825Y Reduced Pressure Backflow Preventer. The manufacturer's instructions for the particular backflow preventer being tested must be followed.)

GUIDE NUMBER P-17

STEAM TRAPS, ALL TYPES

Frequency: Annual (All types, low or high pressure)

Special Instructions: Check trap operation under steam pressure. Remove and replace faulty traps or trap elements.

1. Thermostatic Traps (Bellows or Diaphragm Type)
   a. Remove cap or bonnet.
   b. Clean interior of trap, valve, and seat.
   c. Inspect bellows or diaphragm and note by sound whether it contains liquid charge.
   d. Replace bellows or diaphragms as necessary.
   e. If valve seat is cut, replace seat.
2. Float and/or Thermostatic Traps
   a. Remove bonnet.
   b. Inspect linkage and float operation for leakage, defective operation, or deterioration.
   c. Examine, clean, and check operation of bellows as in 1. above.
3. Inverted Bucket Trap
   a. Remove bonnet.
   b. Clean interior trap.
   c. Inspect valve linkage mechanism and seating of valve.
   d. Examine condition of bucket.
   e. Examine vent or face, inlet, and outlet for evidence of corrosion.
4. Impulse Trap
   a. Remove bonnet.
   b. Inspect valve disc, inlet valve, and outlet surface.
   c. See that fulcrum point is free of dirt.
   d. Clean body of trap.

GUIDE NUMBER P-18

PUMPS, CENTRIFUGAL

Frequency: Annual

Checkpoint:

1. While pump is in operation, note performance, bearing temperature, stuffing box operation, pressure gauge, and flow indicators.

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.

Application: This provides for the visual inspection of builtup roofing system and correction of minor defects that can be repaired in fifteen minutes or less (per defect) with small tools and cold process material. Cleaning roof drains and gutters is also included.

Safety: Comply with all safety rules for working on roof top. Check all tools and equipment for safe condition (ladders, rope safety lines, etc.). Review HBK EL-801, Supervisor's Safety Handbook.

Special Instructions: Review material on roof inspection and maintenance (see Chapter 2 of HBK MS-6, Repair and Alteration Surveys). Use reduced size copy of roof plan to mark major defects and required repairs beyond the scope of this maintenance. If inspection indicates that water is entering the roof or if you have reason to believe the roof insulation is wet, request a roof moisture survey.

Checkpoints:

1. Observe condition of outside building walls for evidence of moisture penetration.
2. Observe condition of ceilings, walls, etc., on all top floors. Look for indications of leaks, damage, paint peeling, etc.
3. Walk entire outer edge of roof. Check roof edges, parapet wall, flashings, etc., for bad caulking, open joints, expansion cracks, and damage. Make minor corrections as needed.
4. Clean all trash and debris from gutters.
5. Walk entire length of expansion and control joints. Check each side closely for damage, making minor corrections as needed.
6. Check all roof penetrations for damage or problems. (Air ducts, fans, support steel, pitch pockets, etc.)
7. Clean all trash and debris from drains and check each drain for proper drainage, tightness, gravel stop, etc. Carefully inspect roof mat around each drain.
8. Walk roof in not more than 20' wide paths removing all trash and debris. Check roof condition for 10' on either side. Note any damage, exposed roof felts, blisters, loss of flood coat or aggregate, soft spots, boils, blisters, alligatoring of bitumen, etc.
9. All locations requiring large repair will be marked by spray paint, noted on roof print, and identified by location and number. Prepare a report on condition of roof and recommended repairs.

GUIDE NUMBER P-21

DRAINS, AREAWAY, DRIVEWAY, STORM

Frequency: Semiannual

Special Instructions: Perform work in autumn after leaves have fallen, and in spring.

Checkpoints:

1. Clean drain and area leading to drain.
2. Remove debris and trash.
3. Test drain for free water flow by flushing with hose.

GUIDE NUMBER P-22

EXPANSION JOINTS IN PIPING

Frequency: Annual

Application: Slip-type joints only. (Bellows-type joints to be replaced when a leak occurs.)

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).

GUIDE NUMBER P-24

DRY PIPE, DELUGE AND PREACTION VALVES

Frequency: Annual

Special Instructions: The work required by this procedure may cause activation of an alarm and/or a supervisory signal. 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 may exceed capacity of floor drain. On preaction and deluge valves, the associated fire detection system must also be serviced. Whenever possible, the operation of the preaction or deluge valves should be tested by the initiation of the fire detection system using the appropriate simulated fire condition, i.e., heat or smoke. Preventive maintenance should be performed on the control valve (main supply) at the time since its functional purpose can be tested (stop water flow). See Guide Nos. P-1 and P-2. Review manufacturer's instructions.

Checkpoints:

1. Determine that legible manufacturer's maintenance instructions are posted in a convenient location near valve.
2. Trip valve and perform all steps in accordance with the manufacturer's instructions, including a full flow drain test. Observe operation of any quick opening devices while making trip tests.
3. Observe operation of water motor gong, and other alarms or supervisory signals such as waterflow paddle alarms, pressure switches, etc.

GUIDE NUMBER P-25

FIRE HOSE
(1 1/2", Racked in Buildings)

Frequency: Annual

Special Instructions: Hose may be maintained in post office workrooms, and other areas where there is a collection of combustibles and persons trained in hose use. When replacement is made, the new hose shall be synthetic fiber jacketed, rubber or latex lined, and equipped with shutoff nozzles regardless of the type previously used. The following work is to be performed in conjunction with Guide No. P-26.

Checkpoints:

1. Unrack hose and check for wetness or deterioration.
2. Uncouple hose and examine it.
3. Remove and discard deteriorated hose. (See HBK MS-56 for guidance on hose replacement.)
4. Remove nozzle and check for obstruction.
5. Recouple and then rerack hose on new folds.

GUIDE NUMBER P-26

FIRE DEPARTMENT HOSE CONNECTIONS
(Standpipe Outlets)

Frequency: Annual

Special Instructions: The work required by this procedure may cause the activation of an alarm and/or a supervisory signal. The control center or fire department that will receive the alarm and/or signal must be notified prior to start of work. When cracking valve, do not stand directly in front of opening.

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.

GUIDE NUMBER P-29

SPRINKLER HEADS - SPRINKLED AREAS

Frequency: Annual

Special Instructions: This work should be scheduled immediately prior to the scheduled maintenance on dry pipe valves or alarm check valves (wet pipe). Needed replacement of sprinkler heads should be performed at that time.

Checkpoints:

1. Inspect and identify damaged, bent, corroded, painted, whitewashed, or weeping sprinkler heads, all of which will need replacement.
2. Remove any insect nests attached to sprinkler heads.
3. Replace light coat of oil on sprinkler heads located in areas conducive to insect nests.
4. For sprinkler heads which are subject to above normal temperature (adjacent to steam pipes, furnaces, ovens, hot gas, vents, exhaust, etc.), check color coding of sprinkler heads for the proper temperature range. Identify the sprinkler heads with improper temperature ranges, all of which will need replacement.
5. Check that minimum distance of 18 to 36" is maintained between sprinkler heads and racks, palletized stock, or other stacked materials.
6. Remove any ladders, stock, or material which is being supported by the sprinkler piping.
7. Replace broken pipe hangers and refasten any that have come loose.
8. Make sure sprinkler heads are in upright or pendant position.
9. Check that all water is drained from low points on dry piping systems.

GUIDE NUMBER P-30

HOT WATER HEATERS
(Converters)

Frequency: Annual

Application: This guide applies to convertors and heat exchangers that use steam to heat water for hot water heating systems.

Checkpoints:

1. With system in operation, determine if steam and water leaks exist (interior and exterior).
2. Drain and flush tanks (storage and expansion).
3. Remove rust and scale; note rate of corrosion.
4. Apply coating, paint, or touch up as required.
5. Remove coil or element; clean and examine condition.
6. Clean, adjust, and calibrate as required: thermometers, aquastats, pressure reducing and relief valves and gauges, temperature relief and steam regulating and control valves.
7. Check operation and condition of all traps.
8. Clean pump. Blow out dirt from motor; check controls, switches, and starters. Check condition of packing or seal and replace as required.

GUIDE NUMBER P-31

HOT WATER HEATERS - DOMESTIC TYPE
(Gas or Oil Fired)

Frequency: Annual

Application: This applies to domestic-type hot water heaters like those in residences, but which can be much larger (50 to 400 gallon tank) and have a circulating pump.

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.

GUIDE NUMBER P-34

FIRE PUMPS, INTERNAL COMBUSTION ENGINE DRIVE

Frequency: Annual

Special Instructions: Have approved fire extinguisher available; allow no open flame or smoking in area. Use safety fuel cans only. 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 and the fire department must be notified prior to start of work.

Gasoline or Natural Gas Engines:

1. Check distributor point dwell. Replace points, capacitor, rotor, and spark plugs after 100 hours of operation.
2. Set timing and distributor advance. Check at idle and operating speed.
3. Adjust governor and carburetor for proper operation and speeds.
4. Check fuel supply. Discard fuel over 9 months old and replace with new.
5. Change engine oil and filter and perform other lubrication of engine and pump.
6. Inspect cooling system for cleanliness, leaks, and antifreeze solution. Check V-belt for proper tension. Adjust as necessary.

Diesel Engines:

7. Change fuel filters.
8. Inspect and adjust racks, injectors, or unit injectors according to manufacturer's instructions.
9. Check governor for proper speed; adjust as necessary.
10. Check fuel level, presence of water in fuel tank, or other contamination.
11. Change engine oil and filter; perform other lubrication on engine and pump.
12. Inspect cooling system for leaks, cleanliness, and antifreeze solution. Check V-belt for proper tension. Adjust as necessary.

Diesel and Gas Engines:

13. Check mountings, supports, and couplings for tightness or defects.
14. Remove tags and operate pump long enough to observe general operation. Note pressure, sound, vibration, odor, and temperatures.
15. 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.
16. Secure pump and leave in ready-to-run condition.
17. Notify proper officials that the unit is back in service.
18. Clean up area and return tools to proper storage.
19. Initiate work order that may be required for repairs or correction of observed defects.

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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.

(2) Five-day-per-week occupancy excluding holidays equals 250 days a year.

c. CENTRAL CHILL WATER AND BOILER PLANT OPERATING INSTRUCTIONS

The operating route sheets for central chill water and/or boiler plant equipment shall include the following:

(1) When the plant is to be placed in operation in accordance with local weather conditions.

(2) The normal operating hours of the plant during the heating or cooling season.

(3) The frequency of the physical inspections and checks to be made of the equipment and the time to perform same.

(4) Information on utilities conservation in regard to billing data and guidelines to avoid peak demands.

(5) Information to be included in the plant log.

(6) Water-treatment procedures including the frequency of feeding, testing, and the time to perform same.

(7) Special conditions and operations attendant to the particular installation.

3. STANDARD CRITERIA AND ALLOWANCES

a. CENTRAL CHILL WATER PLANT OPERATION

Continuous attendance of central chill water plants is not authorized. The amount of time needed for the chill water plant operating route is to be based on the actual number of refrigeration machines and accessory equipment in operation (not on the total number of units installed) and on the functions described below. Operating functions required on other cooling system equipment remote from the central plant area will be performed on separate routes as needed. See other parts of this section to determine appropriate criteria applicable to local equipment. Calculate the time required for plant operation and enter on Form 4895 as outlined below and in part 13-502.12.

(1) Startup and Secure (Col. 11)

One-half hour will be allowed to start and put the chiller plant into operation, make a thorough inspection of the equipment within the plant area, and complete the operating log.

Fifteen minutes will be allowed to shut down equipment in the plant area.

Where 24-hour-per-day operation is justified, the startup and shutdown allowances will be eliminated from the time required to perform the plant operating route.

(2) Operating Checks (Col. 12)

Inspect operating equipment every 2 hours and record readings in the log. This includes all operating equipment in the plant operating route area. Allowable time is not to exceed 10 minutes per machine. An allowance for checking out the central control board will be in accordance with the Central Control Panel section of this appendix.

(3) Water Treatment (Col. 13)

Water treatment includes activities such as feeding, testing, and blowdown (see HBK MS-24). The frequency and time for this work must be determined locally.

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

heating and air-conditioning seasons as required. Calculate the annual time required and enter on Form 4895, line 37.

NOTE: References to line numbers cited below are to line numbers and equipment listed on Form 4894 (Part 13-502).

d. LINE 1: A/C PACKAGE UNITS - SPECIAL

Special purpose package units are defined as equipment serving an area requiring critical temperature and humidity control, where malfunction of this equipment would seriously interfere with the activity being performed in the areas because equipment or material would be damaged. Special purpose areas which are occupied at all times should be checked daily rather than twice daily since occupants will place a service call when additional attention is needed. Package units normally contain all components within an enclosure; however, this item may include a refrigeration system with separate components in the near vicinity. In such cases, the components should not be listed separately. The capacity of such units is usually under 50 tons. Units above 50-ton capacity should usually be listed under line 5, rather than line 1.

e. LINE 2: AIR HANDLERS

The operation of air handlers shall conform to USPS equipment shutdown procedures. These units should not operate at night or on weekends when the area served is unoccupied. Air handlers may consist of a centrifugal fan, heating, and cooling coils with dampers, controls, and circulating pump. This allowance is only for equipment with manual start-stop devices to be checked twice daily for startup and shutdown. Air handlers equipped with automatic or remote startup control devices will be listed under line 37, rather than line 2.

f. LINE 3: HEATING BOILERS
(Hot Water or Low Pressure Steam)

USPS shutdown procedures will be followed. Generally, these types of boilers need not be checked more than twice per day when operational. Operating logs, Form 4846 or 4846A, provide specific operational activities to be performed.

g. LINE 4: COOLING TOWER
(Over 500 Tons)

Cooling tower inspection frequency will correspond to the refrigeration units they serve. Enter here or on line 17 depending on capacity.

h. LINE 5: REFRIGERATION EQUIPMENT
(Small Central Chillers)

This allowance is for small central chillers with capacities from 50 to 150 tons or larger, or those that are remote from the central plant area. The allowance includes time for checking other equipment such as pump, condenser, etc., in the same room or area.

i. LINES 6 THROUGH 9: RESERVED

j. LINE 14: COMPRESSED AIR SYSTEMS
(For Building Systems)

Compressed air systems (all capacities and types) may consist of one or two compressors (dual type) supplying central air and counted as one unit. Air compressors on a water supply or fire protection system should be included under line 19.

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

entered on this line. Window units or under-window, fan/coil units are not to be included.

v. LINE 33: CONDENSERS

This line should include air-cooled, water-cooled, or evaporative condensers, of all capacities. When the condenser is in the immediate vicinity of the refrigeration unit, it is not to be listed as a separate item for route purposes. Also, air-cooled condensing units are not to be broken down into separate components (i.e., fan, condensing unit, etc.).

w. LINE 34: FANS

List only centrifugal fans over 15 horsepower.

x. LINE 35: FANS, PROPELLER

List only propeller-type fans having a diameter of 24" or larger.

y. LINE 36: SUMP PUMPS

Duplex sump pumps are to be listed as one unit.

z. LINE 37: AIR HANDLERS

Same as line 2 except that the air handlers are equipped with automatic or remote start-stop control devices eliminating the need for manual startup and shutdown at the equipment site. With automatic or remote start-stop control devices, equipment is turned on and off from a central board or general monitoring system and will be checked by route only once a week.

aa. LINE 38: FIRE PUMPS

Enter the number of fire pumps driven by either electric motors, gasoline, natural gas, or diesel engines.

ab. LINE 39: RESERVED

ac. LINES 44 THROUGH 47: ELEVATOR MACHINE ROOMS

Enter the number of elevator machine rooms in Column c according to the number of cars served by a common machine room.

ad. LINE 48: RESERVED

ae. LINES 53 THROUGH 55: BATTERY SYSTEMS

Enter the number of banks of battery systems in Column c used as auxiliary power for the building according to the system voltage as indicated on the form.

af. LINE 56: MAIN CUBICLE ROOMS

Enter the number of main (high voltage) cubicle rooms in the building.

ag. LINE 57: TRANSFORMER VAULTS

Enter the number of high voltage transformer vaults in the building.

ah. LINE 58: SWITCHBOARD ROOMS

Enter the number of power switchboard rooms for low voltage switchgear.

ai. LINE 59: RESERVED

aj. LINE 64: PORTABLE FIRE EXTINGUISHERS

Enter the total number of portable fire extinguishers which require monthly inspection.

ak. LINE 65: EMERGENCY LIGHTS

Enter the total number of emergency lighting units which require monthly inspection.

al. LINE 66: RESERVED

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

passage of air and water. Check drains, overflow pipe, and continuous bleed lines.

(3) **Rotating Equipment**

Inspect starters and contactors for evidence of unusually high temperature of the contact points. Take suitable precautions for the voltage involved. Check condition of brushes and the presence of unusual wear or poor contact. Observe belt tension, pulley alignment, condition of guards, etc. Observe packing and check for leaks. Be alert to any unusual noise, vibration, odor, etc. Note oil level and lubricants. Make adjustments or corrections as needed. Observe condition of associated piping, valves, pipe covering, insulation, etc.

(4) **Air Handlers**

(a) Openings. Check openings for entry or discharge of outside air; check screens to prevent entry of birds; check rain deflectors, flashing louvers, etc.

(b) Filter Bank. Note pressure drop across filter bank, condition of filter frames and media, presence of places for air to escape or bypass filter, etc.

(c) Dampers. Note operation of fresh air, return air, and relief air dampers. Look for freedom of motion, condition of damper and linkage, presence of dirt or buildup, response to control signals, etc.

(d) Coils. (Chilled water, preheat, and reheat.) Check that proper circulation exists. Note fins; remove or report any obstruction to the airflow. Look for rusting, corrosion, or buildup.

(e) Fans. Observe condition of housing, coverings, supports, shaft, bearings, belts, guard, etc. Observe operation. Be alert to any unusual noise, vibration, odor, or temperature in either fan or motor.

(f) Controls. Check control units, valves, relays, piping, gauges, etc. Note if there is freedom of motion in all moving parts; check responsiveness of control units and those being controlled. Be sure the controls that protect against freezeups work properly.

(g) Plenums and Ducts. Observe condition of material, covering, tightness of doors, closing devices, access openings, supports, canvas connections, gauges, test connections, valves, dampers, splitters, etc.

c. AIR-CONDITIONING MACHINES - PACKAGED UNITS

These units are sealed so very little attention is required other than to make a general observation of the unit and associated equipment when the operating schedules are maintained. Occasionally it is well to check the discharge air and to observe airflow to and from the machine. Operation of cooling water equipment should be checked over and chemical treatment given as prescribed.

d. BATTERIES

Check specific gravity, voltage, temperature, and solution level of pilot cell(s). The pilot cell is considered one cell of a bank electrically connected as one unit and should be the weakest cell of the bank. Inspect for leaks and add water as needed. Maintain the charging voltage

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,

the callbacks will be sharply reduced.

h. ESCALATORS

A general check of escalators can be made by the craftsman who starts and stops them. Included in the items to be checked are: functioning of the start and stop switch; smoothness of operation; presence of unusual noise or vibration; condition of handrail, side panels, lights, treads, comb, etc. Look for and correct loose trim, protruding screws or bolts, or any other feature that could damage clothing or injure personnel.

i. FIRE PUMPS

(1) Electric Motor Drive

Operate the pump long enough to observe general performance, pressure delivered, etc. Note any unusual sound, vibration, odor, or temperature. Feel the bearings for vibration and for temperature. Note packing gland and operation of relief valve, etc. If the pump has automatic equipment to start it when a flow occurs or when the pressure drops, start it by activating the mechanism so the automatic devices are tested at the same time as the pump. Leave pump in ready-to-run condition.

(2) Internal Combustion Engine Drive

Check the fuel supply, oil level, radiator, and battery. Operate long enough to bring engine to normal operating temperature. Make a general observation of the engine, clutch, pump, etc. Note pressures, functioning of gauges, and relief or safety valves. Check pump packing. If pump has automatic starting equipment, start it on automatic to test the integrity of the devices. Leave unit in ready-to-run condition.

j. HEATING SYSTEM

Observe the operation of all units in the heating system. Note flow of steam and return of condensate. If returning condensate is hotter than your hand can stand, some traps (radiator or steam line) are probably blowing through. If this condition exists, report it to your supervisor. If the system is vacuum return, observe vacuum maintained and check the operation of the pumps. In systems using hot water, check heating elements or coils, operation of circulating pumps, etc. If the system is controlled by outside temperature, check to determine if the controls are functioning properly.

k. HOT WATER GENERATORS AND STORAGE TANKS

Make a visual inspection; note water temperature, steam supply pressure, operation of controls, gauges, and thermometers. Is insulation in good condition? Check steam traps, strainers, piping, etc. Look for leaks and be alert to any unusual noise, vibration, etc.

l. MOTOR AND GENERATORS

Feel the bearing housing for evidence of heat or vibration. Look for creepage of oil or grease along the shaft. Observe brushes and commutators. Look for sparking, discoloration, poor surface condition, black spots, etc. If required, clean commutator with a cleaning stick. Check brush holders, brush spring pressure, pigtail connections, etc. Check starter controls, push button, etc. Note the presence of or need for lubrication. Observe pulleys, belts, coupling, guard, etc. Any misalignment or abnormal belt wear should be investigated and corrected.

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

applicable portions of Form 4705, Fire Inspection Tag.

r. EMERGENCY LIGHTS

All emergency lights shall be inspected monthly on an operating route. This inspection is a "quick check" to ensure that the light is in place and will operate. This is done by seeing that it is in its designated place and that there is no obvious physical damage or condition which would prevent operation. In addition, the test button should be depressed (or light unplugged) for at least 30 seconds to ensure that the light turns on and stays bright.

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.

d. Repair - Inspections are conducted to identify and schedule repairs needed to keep the facility in good condition and prevent avoidable deterioration.

e. Protection - The building manager and staff are responsible for safeguarding people and property from injury, loss, or damage due to fire, accident, theft, natural disaster, or attack. They are responsible for seeing that hazards are discovered and corrected.

f. Construction and Alteration - The building manager is responsible for the inspection of construction and alteration done by in-house forces and contract work where the manager is the contracting officer or represents the contracting officer.

g. Evaluation of New Facilities - The building manager should assist in the inspection and evaluation of new facilities.

h. Inspection of Mechanical Equipment - Periodic inspections of certain mechanical equipment is required by competent personnel. The building manager shall coordinate these equipment inspections and keep informed of the condition of building equipment.

i. Safety Inspection - The Supervisor's Safety Handbook, HBK EL-801, may be used by the building manager and maintenance supervisors to conduct safety and fire prevention inspections. Form 1784, Safety and Health Inspection Checklist, developed for safety personnel shall also be used.

14-104.3 External sources or inspection requirements coming from other organizations of USPS or from outside:

a. Space Inspection - Building managers may be required to perform specified space inspections related to space assignment and management.

b. Inspection Service - Building managers are required to cooperate with the Inspection Service.

c. GAO/OSHA Audits - Building managers are required to cooperate in GAO or OSHA independent audits. However, they must immediately notify the divisional office whenever a GAO or OSHA audit is initiated in the building. See ELM, Chapter 8, for additional instructions.

14-105 EVALUATION TECHNIQUES

14-105.1 Total Inspection

Complete, 100% inspection is ideal, but in many instances where the scope of inspection is large, this type of inspection is impractical. The type and scope of inspection should dictate the percentage of inspection.

14-105.2 Random Sampling

Random sampling is the selection of a few typical examples which show the condition of all. It is a technique particularly useful in building management operations and shall be used where practical.

14-105.3 Sampling Manual

Military Standard 105A, "Sampling Procedures and Tables for Inspection by Attributes," is available through the Administrative Operations Division from the Superintendent of Documents, Government Printing Office. This manual contains simple tables and statistics which provide the adequate sample size based upon the total number of observations available and the required reliability of the sample.

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

procedures or policies are creating difficulties. Suggestions will be solicited as to revision of procedures, methods, or techniques which will improve the overall efficiency of building management operations.

14-205.1.4 After the inspection of operations is completed, and prior to leaving, the inspection personnel shall prepare their findings and recommendations. These findings and recommendations shall be discussed with the postmaster and/or building manager (and other management where appropriate) in a joint meeting where an agreement can be reached concerning specific recommendations, responsibility for the actions to be taken, and target dates for completion. In those instances where, after thorough discussion, agreement cannot be reached as to a particular recommendation or corrective action, such recommendations shall be included in the inspection report together with the supporting and opposing views. The report shall be drafted prior to the inspection personnel departing. After return of the inspection personnel to the divisional office, final decisions shall be obtained as to actions to be taken and target dates on the items which were not resolved at the final field conference.

14-205.2 Building Managers

Local management may conduct inspections similar to those conducted by divisional personnel and will coordinate necessary actions and follow up with appropriate subordinates. The checklist, Form 4905, shall be used as an inspection guide.

14-206 RANDOM SAMPLING

As a part of the overall divisional inspection, random sampling shall be used where needed, in lieu of 100% inspection, as a means of determining the actual quality of maintenance being performed.

14-207 TRAINING FOR INSPECTIONS

To meet defined needs, the inspection personnel may conduct training sessions, as time permits, during field inspections. The need for training will be assessed and the need for additional training materials and courses identified. This information may be used by the divisional office as the basis for recommendations for national training requirements.

14-208 FOLLOWUP OF INSPECTION DEFICIENCIES

It shall be the responsibility of the building managers and/or the divisional office to follow up on the corrective actions taken, to correct noted deficiencies, and to ensure that recommended actions are put into effect. See 824, ELM for Abatement Committee Use Form 1784-C, Safety and Health Deficiency Report, for all safety items.

14-209 REPORTS

14-209.1 Filing

All reports in connection with these inspections shall be written and copies filed in the divisional office and the office that was inspected.

14-209.2 Submission of Reports

Each division shall retain a copy of the reports of maintenance audits that have been performed throughout the previous year. Upon request these reports shall be submitted to the Office of Maintenance Management.

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.

U.S. POSTAL SERVICE
BUILDING OPERATION AND MAINTENANCE EVALUATION

SEE INSTRUCTIONS ON LAST PAGE BEFORE COMPLETING THIS FORM

DIVISION	BUILDING	LOCATION
DATE — LAST REPORT	LAST RATING	BUILDING SIZE *(Gross Square Feet)*
DATE — THIS REPORT	THIS RATING	ANNUAL OPERATING COST $

SUMMARY

ITEM	CATEGORY	DAILY WORK	PROJECT WORK	RATINGS	EVALUATORS *(First Initial and Last Name)*
A. CLEANING	HALLWAYS				
	STAIRS				
	LOBBIES				
	ELEVATORS				
	GENERAL OFFICE SPACE				
	WORKROOMS				
	RESTROOMS				
	EXTERIOR				
	WORK ASSIGNMENTS				
	CUSTODIAL SUPPLIES				
	CUSTODIAL EQUIPMENT				
	STAFFING ALLOCATION				
	TOTALS				
	AVERAGE				
B. MAINTENANCE	COMPLETED MAINTENANCE AND CONDITION OF BUILDING AND EQUIPMENT				
	OPERATION AND MAINTENANCE SCHEDULING AND RECORDS				
C. UTILITY CONSERVATION	RECORDS AND ANALYSIS				
	OPERATING PRACTICE				
D. SAFETY	ACCIDENT PREVENTION				
	FIRE SAFETY				
E. MISCELLANEOUS	CONCESSION, FLAG DISPLAY, CONTRACTS, RULES AND REGULATIONS, SUPPLIES, ETC.				
F. AGENCY RELATIONS					
	TOTAL *(Items A through F)* →				PERCENT RATING

REMARKS

COMPLETED BY	PRINTED NAME	SIGNATURE

PS Form 4905
Aug. 1976
Revised June 1986

1

Figure 14.1 (p. 1)

BUILDING OPERATION AND MAINTENANCE EVALUATION SUMMARY

CHECKLIST				
CLEANING	(√) YES	NO	CLEANING *(Continued)*	(√) YES	NO
1. ARE FORMS 4863, 4864, 4865 or 4852 PROPERLY PREPARED AND CURRENT?			26. ARE TOILETS CLEAN?		
2. IS THE SUPERVISOR/LABORER RATIO IN LINE WITH HEADQUARTER'S GUIDES?			27. IS WINDOW CLEANING SATISFACTORY?		
3. IS THE TRAINING PROGRAM FOR CLEANING PERSONNEL ORGANIZED AND EFFECTIVELY CARRIED OUT?			28. ARE UNAUTHORIZED CLEANING MATERIALS USED?		
4. DO THE CLEANING WORKLOAD DOCUMENTS SUPPORT THE AUTHORIZED STAFFING?			MAINTENANCE		
5. IS CLEANING EQUIPMENT ADEQUATE?			29. IS THE INVENTORY OF BUILDING EQUIPMENT COMPLETE AND PROPERLY PREPARED?		
6. IS CLEANING EQUIPMENT OF GOOD APPEARANCE?			30. ARE THE MAINTENANCE WORKLOAD DOCUMENTS COMPLETE AND PROPERLY PREPARED? *(See Chapter 13, MS-1)*		
7. IS CLEANING EQUIPMENT WELL MAINTAINED?			31. IS THE MAINTENANCE AND OPERATION STAFFING ALLOWANCE SUPPORTED BY THE WORKLOAD DOCUMENTS? *(See Chapter 13, MS-1)*		
8. ARE GEAR ROOMS ADEQUATE AND WELL MAINTAINED?			32. HAVE ELEVATOR DATA CARDS BEEN PREPARED FOR EACH ELEVATOR?		
9. ARE JANITOR CLOSETS ADEQUATE AND WELL MAINTAINED?			33. IS PREVENTIVE MAINTENANCE PROPERLY PERFORMED? *(Inspect equipment on which preventive maintenance has recently been completed)*		
10. ARE TRASH ROOMS ADEQUATE AND WELL MAINTAINED?			34. IS PREVENTIVE MAINTENANCE PROPERLY SCHEDULED AND COMPLIED WITH?		
11. ARE LOCKER ROOMS ADEQUATE AND WELL MAINTAINED?			35. ARE LOGS PROPERLY MAINTAINED ON CENTRAL CHILLERS AND AIR HANDLERS?		
12. ARE SUPPLIES AND EQUIPMENT STORED IN AN ORDERLY MANNER?			36. IS GROUP RELAMPING BEING ACCOMPLISHED *(See MS-39)*		
13. ARE WRITTEN WORK ASSIGNMENTS PREPARED FOR ALL CLEANING PERSONNEL?			37. ARE REQUIRED INSPECTIONS BEING PERFORMED ON ELEVATORS AND PRESSURE VESSELS, AND ARE INSPECTION CERTIFICATES POSTED?		
14. ARE THE WORK ASSIGNMENTS PREPARED TO AGREE WITH THE PRODUCTIVE RATE FOR EACH TYPE OF CLEANING?			38. IS PREVENTIVE MAINTENANCE WORK, WHICH REQUIRES HIGHLY SPECIALIZED EQUIPMENT AND PERSONNEL, CONTRACTED? *(Electrical protective devices, elevator controls, etc.)*		
15. ARE ONE-TIME CONTRACTS USED TO DO SCHEDULED PROJECT WORK WHICH DUE TO UNFORESEEN CIRCUMSTANCES CANNOT BE DONE BY USPS EMPLOYEES AS SCHEDULED?			39. DO MAINTENANCE AND OPERATION EMPLOYEES HAVE PROPER TOOLS AND EQUIPMENT FOR SAFE, EFFICIENT OPERATIONS?		
16. IS THERE EVIDENCE THAT CLEANERS ARE REPORTING NEEDED MECHANICAL AND STRUCTURAL REPAIRS? *(Correction Needed Form 4851.)*			40. ARE BUILDING EQUIPMENT OPERATING ROUTE SHEETS ACCURATE? ACCOMPANY A MECHANIC ON AT LEAST ONE OPERATING ROUTE.		
17. IS THE PROJECT CLEANING BEING ACCOMPLISHED ON SCHEDULE?			41. IS WATER TREATMENT ADEQUATE?		
18. IS CLEANING SCHEDULED FOR A MINIMUM AMOUNT OF INCONVENIENCE TO THE TENANTS?			42. ARE CENTRAL CONTROL PANELS MAINTAINED AND USED TO ACHIEVE MAXIMUM OPERATING EFFICIENCY?		
19. ARE STAIRWAYS CLEAN?			43. ARE SUPPLIES FOR MAINTENANCE OR BUILDING EQUIPMENT ADEQUATE?		
20. ARE ELEVATORS CLEAN?			UTILITY CONSERVATION		
21. ARE ENTRANCES, LOBBIES AND CORRIDORS CLEAN?			44. HAVE THE PROCEDURES FOR RECORDING, ANALYZING AND CONTROLLING ENERGY USE, AS SET FORTH IN MS-49 OR MS-50 BEEN IMPLEMENTED?		
22. ARE FLOORS MAINTAINED SATISFACTORILY?			45. HAS THE BEST AVAILABLE UTILITY RATE SCHEDULE BEEN VERIFIED WITHIN THE LAST YEAR?		
23. IS HIGH CLEANING SATISFACTORY?					
24. ARE OUTSIDE AREAS MAINTAINED SATISFACTORILY?					
25. IS ROOM CLEANING SATISFACTORY?					

PS Form 4905
Aug. 1976
Revised June 1986

2

Figure 14.1 (p. 2)

CHECKLIST (Continued)

UTILITY CONSERVATION *(Continued)*	(√) YES	NO
46. ARE THERMOSTATS SET TO MAINTAIN THE ROOM TEMPERATURES SPECIFIED IN MS-49 or MS-50?		
47. HAVE THE PROCEDURES AND OPERATING TECHNIQUE FOR CONSERVING ENERGY, AS IDENTIFIED IN MS-49 OR MS-50, BEEN IMPLEMENTED?		
48. HAS A HEATING SCHEDULE BEEN ESTABLISHED FOR THE BUILDING? COOLING SCHEDULE?		
SAFETY—ACCIDENT PREVENTION		
49. ARE SHOPS, STORAGE AREAS, CORRIDORS, PUBLIC SPACE, ETC. CLEAN AND FREE FROM HAZARDS?		
50. ARE MACHINE GUARDS, PERSONAL PROTECTIVE EQUIPMENT, ETC. PROVIDED, USED, AND PROPERLY MAINTAINED?		
51. IS ALL ELECTRICAL EQUIPMENT PROPERLY GROUNDED?		
52. ARE HAND TOOLS ADEQUATE AND WELL MAINTAINED?		
53. ARE LADDERS, PLATFORM, ETC. IN SAFE CONDITION?		
54. ARE HANDRAILS PROVIDED ON STAIRS, STEPS, ETC.?		
55. HAVE UNSATISFACTORY CONDITIONS DETECTED ON PREVIOUS SURVEYS BEEN PROPERLY CORRECTED?		
56. DO EMPLOYEES SEEM TO HAVE AN INTEREST IN THE OVERALL SAFETY PROGRAM?		
SAFETY—FIRE		
57. REVIEW LATEST COMPLETED FORM 1784, SAFETY AND HEALTH INSPECTION CHECKLIST. HAS MAINTENANCE MADE APPROPRIATE RESPONSE TO SAFETY DEFICIENCIES?		
MISCELLANEOUS		
58. ARE VENDING AREAS CLEAN?		
59. DO CONCESSIONAIRES HAVE ADEQUATE TRASH AND GARBAGE STORAGE FACILITIES?		
60. IS THERE OBJECTIONABLE LITERATURE EVIDENT ON NEWSSTANDS? *(See PSM 243.274b)*		
61. DOES THE BUILDING MANAGER UNDERSTAND HIS RESPONSIBILITY IN ADMINISTERING CONCESSION AND/OR CAFETERIA CONTRACTS?		
62. ARE LICENSE AND CONTRACT DOCUMENTS FOR CONCESSIONS AVAILABLE?		
63. ARE KEYS PROPERLY CONTROLLED?		
64. ARE RULES AND REGULATIONS GOVERNING CONDUCT ON POSTAL PROPERTY PROPERLY POSTED? *(Poster 7)*		
65. DOES THE BUILDING MANAGER UNDERSTAND HIS DUTIES, RESPONSIBILITIES AND THE CHAIN OF COMMAND?		

MISCELLANEOUS *(Continued)*	(√) YES	NO
66. ARE LOCALLY DESIGNED FORMS BEING USED IN PLACE OF AUTHORIZED FORMS?		
67. ARE DEFECTIVE SUPPLIES AND MATERIALS RECEIVED FROM THE GSA FEDERAL SUPPLY SERVICE REPORTED TO FSS FOR CORRECTION?		
68. IS THE BUILDING MANAGER FAMILIAR WITH LOCAL ORDINANCES, CODES, ETC., THAT MAY AFFECT HIS OPERATION?		
69. IS THE FLAG PROPERLY DISPLAYED?		
70. ARE THE TRAINING NEEDS OF THE BUILDING MAINTENANCE STAFF BEING MET?		
71. ARE THE BUILDING PLANS CURRENT?		
AGENCY RELATIONS		
72. ARE ALL TENANT AGENCIES ADVISED WHOM TO CONTACT FOR SERVICES?		
73. DOES THE BM MAKE FREQUENT CONTACTS WITH AGENCY HEADS TO PROMOTE AGENCY RELATIONS?		
74. HAVE OPERATING EMPLOYEES BEEN PROPERLY TRAINED IN AGENCY AND PUBLIC RELATIONS?		
75. DO ALL CATEGORIES OF EMPLOYEES DEMONSTRATE A GOOD PUBLIC RELATIONS "SERVICE" ATTITUDE?		
76. DOES THE BUILDING MANAGER UNDERSTAND THE OPERATING AGREEMENT BETWEEN USPS AND GSA?		
77. ARE SERVICES, WHICH ARE BEYOND THE RESPONSIBILITY OF THE POSTAL SERVICE, FURNISHED TO TENANT AGENCIES WITHOUT REIMBURSEMENT?		
78. IS THERE AN AGENCY CONTACT IDENTIFIED FOR EACH OCCUPANT AGENCY ON FILE?		
OTHER		

PS Form 4905
Aug. 1976
Revised June 1986

Figure 14.1 (p. 3)

INSTRUCTIONS

1. Use appropriate checklist and rate each category according to the following scales:

RATING SCALE FOR CATEGORIES A, C, D, E, F.

10 Every phase is considered outstanding.

8 Every phase of the operation is completely satisfactory.

6 Standards are being maintained. Action required to increase quality of performance.

4 The standard for each operation is being met intermittently.

2 The operation is considerably below standard and immediate action is necessary to increase the quality of performance.

0 The operation is completely inadequate.

RATING SCALE FOR CATEGORY B

10 Needs no special attention other than routine maintenance at scheduled intervals.

8 Routine maintenance overdue.

6 Needs special attention above routine maintenance generally requiring treatment with expendable items such as belts, packing, covers, surfacing, painting, etc.

4 Needs special attention to eliminate future safety hazards or to avoid excessive wear or damage to machinery which, if neglected, would result in expensive repairs.

2 Needs repair or replacement of component parts to function properly.

0 Needs special attention to correct equipment not functioning, or to eliminate serious hazards.

2. Include the name of each person who participates in the evaluation.

3. Under Category "A" Cleaning, evaluate each subcategory for both daily and project cleaning. Average these to obtain the rating for cleaning. A total rating of 20 is possible for cleaning.

4. Where all categories are not evaluated, the percent rating should be determined by dividing the actual by the possible. A rating of ten (10) is possible for categories "E" and "F"; and a rating of twenty (20) is possible for categories "A", "B", "C", and "D".

5. Any individual rating of 4 or less shall be fully explained with recommendation for corrective action on attached sheets.

4

PS Form 4905
Aug. 1976
Revised June 1986

Figure 14.1 (p. 4)

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SECTION 15

CONCESSIONS

15-1 GENERAL

15-101 BACKGROUND

In fulfilling its responsibility for the operation of postal buildings, the Postal Service has an allied interest to arrange for food and other essential services which are not conveniently available from commercial sources and which may improve the comfort or efficiency of postal employees and other occupants while on duty. Attention is directed to HBK EL-602.

15-102 POLICY

Space is provided in buildings to be constructed and the Postal Service also makes such improvements or alterations as are necessary or desirable in existing buildings for this purpose. The space requirements for food service areas are in AS-504, Space Requirements.

15-103 RESPONSIBILITY

The food service officer, appointed by the installation head, is responsible for overseeing the day-to-day management of concessions.

15-2 VENDING STANDS AND VENDING MACHINES

15-201 OPERATION

The operation of vending stands and machines in postal areas is covered in HBK EL-602 and POM 221.53.

15-202 NONPOSTAL AREAS

When tenant agencies occupy large areas in postal buildings and desire that vending machines be located within their areas for the convenient use of their employees, the vending machines may be installed by one of the following methods:

a. An expansion of the contract for machines in the postal area with the proceeds going to the recognized postal employees' organization. This may be the best method where there are many tenant agencies with no employee organizations.

b. Under license of the Randolph-Sheppard Act.

c. Use of revocable license to a recognized tenant agency organization. (See Figure 15-1, Form 4906, Revocable License for Nonpostal Use of Real Property.) If this method is used, block 6 (consideration) of the form should provide for reimbursement for utilities at the same rate used in the other contracts for vending machines in the building.

15-203 SERVICES FURNISHED BY USPS

The USPS provides cleaning in accordance with normal building programs for such work. Cleaning required beyond normal building requirements is provided at the expense of the vending machine operator.

15-204 INSPECTION

The building manager inspects the vending machines and areas at least quarterly to ensure that they are maintained in a clean and sanitary condition.

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.

15-503.2 Employee Use

In large buildings, one telephone recess should be provided for each group of 100 office employees, so spaced that no employee will have to walk more than 200 feet to reach a telephone.

15-503.3 Postal Area

The postmaster must concur in the installation of telephone pay stations for use primarily by postal employees.

15-504 LOCATION

15-504.1 Convenience

In smaller buildings, one or more telephone pay stations near building entrances normally will be sufficient. In larger buildings, an adequate number of additional stations must be provided in areas which are remote from building entrances. As far as practicable, these must be dispersed so that telephone service will be reasonably convenient to all personnel in the building. Consider providing special pay stations for the handicapped in accordance with Section 3-602d. (See also HBK RE-4.)

15-504.2 Outside Stations

To make telephone pay stations accessible to all, it usually is necessary to locate them in unassigned public spaces, preferably in suitable recesses, alcoves, or rooms off lobbies or corridors. Outdoor telephone stations may detract from the appearance of a building, increase the Postal Service liability for injury or damage, create congestion and traffic obstructions, and provide opportunities for the creation of nuisances. They may not be installed unless there are very special circumstances which would warrant an exception to the general rule.

15-504.3 Paying Locations

Each proposed location must promise sufficient revenue to make it acceptable to the telephone company. In each case, consider the prospective difficulties connected with running necessary telephone lines and electrical circuits.

15-505 INSTALLATION

Telephone pay stations must be unenclosed stations attached to wall surfaces. One or more local telephone directories should be provided at each location.

U.S. POSTAL SERVICE

REVOCABLE LICENSE FOR NON-GOVERNMENT USE OF REAL PROPERTY

A revocable license affecting the property described and for the purpose designated below is hereby granted to the licensee herein named, subject to all of the conditions, special and general, hereinafter enumerated. General Condition: This license is revocable by the U.S. Postal Service at any time subject to demand.

1. License Number	2. Maximum Period Covered	
	From	To
3. Name of Licensee	4. Address of Licensee *(Include No. and Street)* City, State and ZIP+4	

5. Project Designation and Address

6. Consideration

$ _____

7. Description of Property Affected *(As shown on Exhibit _____, which is attached and made a part of this agreement.)*

8. Purpose of License

Part I – Special Conditions

9. By acceptance of this license, the licensee agrees to abide by and be bound by the following special conditions.

Part II – General Conditions

a. **Compliance.** Any use made of the property affected by the license, and any construction, maintenance, repair, or other work performed thereon by the licensee, including the installation and removal of any article or thing, shall be accomplished in a manner satisfactory to the U.S. Postal Service.

b. **Structures.** The licensee shall not place or construct upon, over or under the property any installation or structure of any kind or character, except such as are specifically authorized herein.

c. **Laws and Ordinances.** In the exercise of any privilege granted by this license, licensee shall comply with all applicable State, municipal and local laws, and the rules, orders, regulations and requirements of governmental departments and bureaus. Licensee must also comply with all U.S. Postal Service rules and regulations relating to the use of these premises, except as specifically waived in the grant.

d. **Sanitary Conditions.** If this license gives possession of U.S. Postal Service property, the licensee shall at all times keep the premises in a sanitary condition satisfactory to the U.S. Postal Service.

PS Form **7430**, April 1985

Figure 15-1. REVOCABLE LICENSE FOR NONPOSTAL USE OF REAL PROPERTY

e. **Damage.** Except as may be otherwise provided by the Special Conditions above, no U.S. Postal Service property shall be destroyed, displaced or damaged by the licensee in the exercise of the privilege granted by this license without the prior written consent of the U.S. Postal Service and the express agreement of the licensee promptly to replace, return, repair and restore any such property to a condition satisfactory to the U.S. Postal Service upon demand.

f. **Indemnification.** The licensee shall indemnify and save harmless the U.S. Postal Service its agents and employees against any and all loss, damage, claim, or liability whatsoever, due to personal injury or death, or damage to property of others directly or indirectly due to the exercise by the licensee of the privilege granted by this license, or any other act or omission of licensee, including failure to comply with the obligations of said license.

g. **Storage.** Any U.S. Postal Service property which must be removed to permit exercise of the privilege granted by this license shall be stored, relocated or removed from the site, and returned to its original location upon termination of this license, at the sole cost and expense of the licensee, as directed by the U.S. Postal Service.

h. **Operation.** The licensee shall confine activities on the property strictly to those necessary for the enjoyment of the privilege hereby licensed, and shall refrain from marring or impairing the appearance of said property, obstructing access thereto, interfering with the transaction of Postal business and the convenience of the public, or jeopardizing the safety of persons or property, or causing justifiable public criticism.

i. **Notice.** Any property of the licensee installed or located on the property affected by this license must be removed within 30 days of written notice from the U.S. Postal Service. Any property of the licensee not removed within that time may be removed, stored or disposed of by the U.S. Postal Service at the expense of the Licensee. Licensee agrees to reimburse U.S. Postal Service for all such costs.

j. **Guarantee Deposit.** Any deposit which may be required to guarantee compliance with the terms and conditions of this license shall be in the form of a certified check, cashier's check or postal money order in the amount designated above, payable to the U.S. Postal Service.

k. **Bond.** Any bond required by this license shall be in the amount designated above, executed in manner and form and with sureties satisfactory to the U.S. Postal Service.

l. **Expense.** Any cost, expense or liability connected with or in any manner incident to the granting exercise, enjoyment, or relinquishment of this license shall be assumed and discharged by licensee.

m. **Future requirements.** The licensee shall promptly comply with such further conditions and requirements as the U.S. Postal Service may hereafter prescribe.

n. **Attempted Variations.** There shall be no variation or departure from the terms of this license without prior written consent of the U.S. Postal Service.

o. That condition(s) No.(s)_____
_____
was (were) deleted before the execution of this license.

United States Postal Service	Licensee
Dated This ____ Day of ____ 19	Accepted This ____ Day of ____ 19
By *(Signature)*	By *(Signature)*
Title	Title

If Licensee is a Corporation, the following Certificate of Licensee must be executed:

Certificate of Corporate Licensee

I, _____, certify that I am the _____
Secretary of the corporation named as licensee herein; that _____
who signed said license on behalf of the licensee was then _____
of said corporation; that said license was duly signed for and in behalf of said corporation by authority of its governing body, and is within the scope of its corporate powers.

(Corporate Seal)

_____
(Signature)

PS Form 7430 April 1985 (Reverse)

Figure 15-1 (p. 2)

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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.)

16-3 INVESTIGATIVE SERVICES

16-301 GENERAL

The Postal Inspection Service provides investigative services for offenses on postal property.

16-302 OTHER AUTHORITIES

All necessary liaison with other investigative, intelligence, Federal, and local law enforcement bodies concerning offenses and investigative matters is conducted by the Inspection Service which has the sole responsibility for referring criminal cases involving or affecting USPS to the Department of Justice.

16-303 REPORTING

ASM 220 contains information on reporting of postal losses and offenses.

16-304 TENANT AGENCIES

Tenant agencies must report losses or offenses to the USPS building manager through the agency contact. The following action is then taken:

a. The building manager, when appropriate, verifies the extent of the loss or offense and reports the matter to the local postal inspector. In criminal cases such as burglary, assault, and robbery, the local law enforcement officers must also be notified.

b. The Postal Inspection Service investigates or coordinates the investigation with the tenant agencies' investigating body.

16-4 FIRE PROTECTION EQUIPMENT

16-401 PORTABLE FIRE EXTINGUISHERS

16-401.1 Fire Extinguisher Standards

The USPS must conform to the requirements covering portable fire extinguishers in the National Fire Protection Association Standard No. 10, Portable Fire Extinguishers, and as modified by ELM 853.2 (1983), and HBK MS-56, Section 462.

16-401.2 Selection of Extinguishers

Fire extinguishers can be ordered from Federal Supply Schedule FSC Group 42, Part 1 - Fire Equipment and Supplies, unless local purchase results in reduced cost of extinguishers certified by the Underwriters' Laboratory. Minimum: 10 pounds.

16-401.3 Maintenance

Specific guidance on fire extinguisher maintenance and requirements is found in HBK MS-56, Fire Extinguishing Equipment.

16-402 STANDPIPES AND HOSES

Most fire departments will not use class II fire hoses installed in buildings (because they are often poorly maintained) and prefer that hoses not be installed so that the fire department equipment can be more readily installed. Where hoses are not provided, the size of the threaded connection on the standpipes must be checked with the local fire department and adapters provided where needed. The installation of fire hoses must be

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

alarm to the fire department. When a fire alarm box is pulled in the buildings which are connected to the fire department or a control center, an automatic signal is transmitted to the fire department. This automatic signal must be followed up by a telephone call to the fire department to give them the exact location of the fire. In those buildings where the building fire alarm system is not connected to the fire department or a control center, telephone the local fire department to inform them of the location of the fire. Further instructions and requirements are found in ELM 850.

16-503 IN SPECIAL SITUATIONS

In addition to fire, other situations that must be reported to the fire department include:

a. Detection of smoke. Upon detecting an odor of smoke or any other indication of fire (including such information received by telephone from a building occupant) the employee must immediately notify the fire department. After calling the fire department, if the conditions indicate that there may not be an actual fire, the employee may investigate before sounding the building fire alarm.

b. Discovery of an extinguished fire. Upon discovering evidence of an extinguished fire (including such information received by telephone from a building occupant) the employee must immediately notify the fire department. After calling the fire department, the employee must investigate the situation, take all necessary action to ensure that the fire has been extinguished, and sound the building fire alarm if necessary. Generally, the fire department will dispatch a professional firefighter to assist in making this determination.

16-6 FIRE ALARM IDENTIFICATION

Building fire alarm systems which are not connected to the fire department or control center must be identified by posting a sign adjacent to each local fire alarm box. The sign should state that the alarm does not summon the fire department and that a telephone call must be placed to the local fire department. Figure 16-1, Fire Alarm Identification Sign, suggests the format to be used. These signs must be uniform size, 5 by 7 inches, and easy to read.

FIRE OR EMERGENCY

This building alarm DOES NOT summon the Fire Department.

Pull the building alarm station to evacuate building and proceed at once to CALL FIRE DEPARTMENT by telephone –

Telephone No.	444-4444
This building is	U.S. Post Office 1900 F Street

GIVE ACCURATE, COMPLETE INFORMATION

Figure 16-1. FIRE ALARM IDENTIFICATION SIGN

16-7 FIRE DRILLS

When the annual fire drills required by ELM 854.2 are conducted, the building manager coordinates them with the local fire department and the tenants. The tenants must (a) participate in the drill, (b) appoint floor and corridor wardens to direct their employees to the stairs, and (c) ensure that all of their space is evacuated.

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.

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SECTION 17

DAMAGE CONTROL AND EMERGENCY PLANNING

17-1 GENERAL

17-101 SCOPE

The USPS is responsible for minimizing the danger to life and postal property arising from the effects of attack, fire, flood, explosion, or other disasters in buildings under USPS control. Building operating equipment and systems (ventilation, steam, electrical, gas, and water) offer potential danger to property and life if accidents should happen and the results of these accidents are not quickly brought under control. The USPS building manager must provide the facilities and trained personnel to control damages which may be due to any cause, to confine this damage to the smallest area, and to prevent injury.

17-102 ADVANCE PLANNING

The key to any program involving possible accident, damage, or injury is advance planning and training for possible emergency situations. In this manner, organizations are set up and procedures are established and disseminated to capable, trained personnel so that appropriate reactions to emergency situations are automatic.

17-103 CONTINGENCY PLANS

The plans and organization developed for compliance with this section must be consistent with ASM 280 and the following publications:

a. 159A, "Contingency Plans - Work Stoppages (Limited Official Use)"

b. 159B, "Contingency Plans - Civil Disorders and Natural Disasters (Limited Official Use)"

c. 159C, "Contingency Plans - Bombings, Bomb Threats and Bomb Scares (Limited Official Use)"

d. HBK MS-49, Chapter 5

e. ELM 852.3 and 852.4, Emergency Action Plans and Fire Prevention Plans.

17-2 BUILDING OCCUPANT ORGANIZATION

17-201 OCCUPANT RESPONSIBILITY

The Postmaster or installation head is responsible for establishing a facility self-protection organization in buildings under USPS control. This organization is to identify the functions and responsibilities of building occupants during emergency situations and is a joint responsibility of all tenants.

17-202 ORGANIZATION STRUCTURE

The self-protection organization shall include representation from various USPS organizational units and all non-postal tenants to assure identification of all occupant needs and adequate emergency planning. The Postmaster shall act as the facility self-protection organization coordinator, directing the activities from an established control point during all emergencies. The Postmaster is responsible for the operation of the building under all circumstances.

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

offices and any other location as deemed appropriate by the building manager. These signs must be kept current.

17-401.2 The signs must be of substantial construction, and uniform as follows:

a. White lettering on a colored background.

b. Large enough to be easily noticed.

c. Have the heading, UTILITIES CUTOFFS, in letters at least 3/4-inch high.

d. List all gas, electrical, steam, and water cutoffs and other utilities which may need to be cut off in case of emergency. These signs must not list any cutoff which would impair a fire protection system such as sprinklers, standpipes, fire alarms, or fire pumps.

e. Where more than one location is used for a single type of utility, all locations must be listed.

17-401.3 Cutoff valves and switches serving this function in all the building systems must be clearly identified by a sign visible from the floor and permanently mounted near the valve or switch or hung from it. Use white letters on a colored background, the color to be the same as used for piping or electrical identification.

17-402 DESIGNATION AND ASSIGNMENT OF CONTROL POSTS

17-402.1 The building manager provides technical assistance necessary to designate control posts throughout the building to adequately control gas, steam, electricity, water, and ventilation in emergency situations. The safety officer may be called on for assistance in the designation of these posts.

17-402.2 Damage-control team members must be assigned primary and secondary utility control posts to which they report in an emergency for each shift of operation.

17-403 DESIGNATION OF BUILDING CONTROL CENTER

17-403.1 The security office in all buildings with such offices, or any other location deemed appropriate by the building manager, must be designated control center for use in an emergency situation. The facility self-protection organization and the damage-control team (which functions as the utilities service of the organization) use this control center.

17-403.2 The control center must contain the following:

a. Telephone communications.

b. Any other communication device used to activate the damage-control team.

c. Phone listings, government extensions, and home phones of all members of the damage-control team and the building manager.

d. Current plans, layouts, or diagrams of piping systems, electrical facilities, heating, ventilating, and air-conditioning.

e. A set of floor plans.

f. A directory of emergency numbers, i.e., ambulance service, hospital, bomb squad, police, fire department, emergency repair force, and key people.

g. An occupancy census.

h. A bullhorn.

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.

UTILITY	FIRE	EVACUATE	UPON RETURN
Water	Stand by	Leave water on	Turn off water at control valve nearest to point of damage
Gas	Turn off in fire area - stand by	Turn off	Survey for damage
Electricity	Stand by to turn off	Leave electricity on	Turn off in case of local damage
Steam (Central Heating Plant)	Stand by to turn off	Throttle down at central plant	No action necessary at buildings
Local boilers, coal	Stand by to turn off	Turn off valves, control fire as necessary	Turn off valves, control local damage
High pressure oil (over 15 psig)	Stand by to turn off	Cut oil burners	Resume service after inspection
Low pressure oil (under 15 psig)	Stand by to turn off	Cut oil burners	Resume service after inspection
Air-conditioning	Stand by to turn off	Turn off at evacuation signal	Resume service after reconnaissance and inspection

Figure 17-1. INSTRUCTIONS TO THE DAMAGE-CONTROL TEAM

17-501.3 Repairs beyond the scope of the building manager's facilities must be estimated and reported in detail to the divisional office as soon as possible.

17-501.4 The building manager will furnish information to the Postmaster to report as required by ASM 220.

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Operation and Maintenance of Real Property

Operation and Maintenance of Real Property

Operation and Maintenance Handbook
MS-1