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Civil Engineering



FIRE PROTECTION AND FIRE PREVENTION

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This instruction outlines the procedures for an effective fire protection and prevention program to prevent loss of life, property damage and related intangible losses. It implements AFRPD 32-20, *Fire Protection*, establishes organizational and individual responsibilities and effects all areas, facilities and activities at the 440 Airlift Wing (AW). It applies to all activities, organizations, tenant units, contractors, and visitors located at General Mitchell IAP, Milwaukee WI.

SUMMARY OF REVISIONS

This revision is substantially revised from the past regulation. Paragraphs were renumbered, references updated, and some paragraphs renamed. Some material has been extracted due to it is covered adequately in other publications. Some paragraphs were restructured due to the complexity of certain different types of occupancies on this installation.

1. Responsibilities:

- 1.1. The installation Commander (440 AW/CC) is responsible for fire protection at the 440 Air Reserve Station.
- 1.2. The Base Civil Engineer (BCE) is the Base Fire Marshal and is responsible to the Support Group Commander for fire protection and fire prevention as outlined in AFI 32-2001.
- 1.3. The Chief, Fire Protection Flight, (CEF) is responsible for the management and operation of the fire protection program.
- 1.4. The Assistant Chief of Technical Services, the Base Fire Inspector, is responsible for the implementation of the fire prevention program. CEF personnel are authorized to stop any operation or process, which presents a serious fire, explosion or life safety hazard. This authority extends over all tenants, visitors, and contractors.

1.5. Unit Commanders, division chiefs, functional managers, and facility managers, at all levels are responsible and must ensure that sound fire prevention procedures are established and practiced in each activity under their jurisdiction.

2. Installation Fire Protection and Prevention Program:

2.1. Unit commanders will execute a program to ensure newly assigned personnel receive a fire prevention orientation according to AFI 91-301, *Air Force Occupational Safety, Fire Prevention and Health Program*.

2.2. CEF, with the assistance from the Technical Services Branch, develops, manages, and implements fire protection and fire prevention programs. Technical Services ensures that:

2.2.1. All facilities are inspected annually to identify and eliminate potential fire safety deficiencies or fire hazards and that fire prevention measures are enforced.

2.2.2. Fire prevention and protection is available to all unit commanders, division chiefs, facility managers, and supervisors.

2.3. Unit commanders, division chiefs, building managers, and supervisors will develop operating instructions (OIs) to follow when fire is discovered. OIs should cover the fire protection and prevention elements as outlined in this instruction, as well as operations that are unique in their functional areas.

2.3.1. Operating instructions must be coordinated through the base fire prevention office (Technical Service) and reviewed annually or upon change in functional processes.

3. Fire Prevention:

3.1. Functional managers and facility managers are responsible for periodically inspecting their organizations to ensure compliance with this instruction to eliminate fire hazards and correct fire safety deficiencies.

3.2. All occupancies shall comply with NFPA 1, *The Fire Prevention Code*, and AFOSH Std. 91-56, *Fire Protection and Prevention*.

3.3. Facility managers are to ensure that the facility is in a fire safe condition at the close of the business day.

3.4. Functional managers are responsible to initiate immediate corrective action to eliminate fire hazards/deficiencies. Fire hazards, which cannot be internally corrected within 30 days after discovery will be submitted on AF Form 3, **USAF Hazard Abatement Log**, according to AFI 91-301. Fire Safety Deficiencies (FSDs) will be submitted for correction on AF Form 332, **BCE Work Request**, along with a copy of the AF Form 1487, **Fire Visit Report**, and processed according to AFI 32-1031, *Operations Management*. A signed copy of the AF Form 1487, with corrective actions indicated, will be sent to 440 SPTG/CEF for review and filing in the facility folder.

3.5. All non-essential electric office machines and equipment control switches are shut off when not in use.

3.6. All portable-heating units shall be U.L. approved with safety feature that when the unit falls it will automatically shut-off.

- 3.7. Any operation or process, which requires any type of open flame, shall be coordinated and approved by the base fire inspector. This includes outdoor recreational cooking. An AF Form 592, **Welding, Cutting, and Brazing Permit** must be issued.
- 3.8. Authorized smoking areas are kept free of trash and combustible material and those smoking materials are extinguished and disposed of in approved receptacles.
- 3.9. Only Class I, II, and IIIA liquids are to be stored in flammable storage cabinet(s) and doors shall be closed at all times. No storage of any type shall be stored on top of these lockers.
- 3.10. Flammables are not disposed of with wood, paper, metal waste, or any type of oxidizer.
- 3.11. Hazardous waste materials are disposed of in accordance with current hazardous waste handling and disposal procedures.
- 3.12. Attics, crawl spaces, stairwells, storage rooms, and warehouses are free of trash along with disposal of unnecessary combustible materials. No combustible material shall be stored under any stairway or stairwell.
- 3.13. Mechanical rooms are not utilized for storage purposes. No combustibles will be allowed to be stored next to hot water heaters.
- 3.14. Periodically inspect electrical and appliances to detect worn or defective cords.
- 3.15. No extension cords are to be used with the exception of surge suppressors. The only time extension cords are allowed is for contractors during temporary construction.
- 3.16. Document monthly visual inspections on AF Form 3130 for all portable fire extinguishers in facilities. This is the responsibility of the facility manager or delegated authority.
- 3.17. Periodically make a visual inspection of emergency lighting, exit signs, pull stations, and extinguishing systems for proper operation or signs of tampering and report any deficiency to the fire inspector.
- 3.18. The facility manager or delegated alternate must accompany the fire inspector during a fire prevention visit to ensure all areas are accessible and fire safe. Technical Services will give a 24-hour notice prior to the fire assessment.
- 3.19. Compressed air cylinders shall be secured by a chain or stored properly in a designated cabinet to prevent cylinders from falling over.

4. Life Safety:

- 4.1. Unit Commanders, Division Chiefs, Facility Managers, and Supervisors are responsible for ensuring all life safety devices and features within areas of their jurisdiction are operational.
- 4.2. Functional Managers and Facility Managers will ensure that all:
 - 4.2.1. Corridors, stairwells, exit discharges, or any path of egress are not obstructed in any manner.
 - 4.2.2. Exits are clear of trash, debris and obstructions including ice and snow for a minimum distance of ten feet from the exit.
 - 4.2.3. Exit signs that are electrically illuminated be operational at all times.

4.2.4. Doors, which are identified as exits are kept unlocked while occupants are in the facility.

4.2.5. Exit doors are not to be chained, blocked, restricted, in any manner.

4.2.6. Fire doors shall be kept in the closed position at all times.

4.3. Fire protection, and detection devices are operational, unobstructed, and undamaged. These include, heat and smoke detectors, sprinkler heads, fire protection risers, manual pull stations, portable fire extinguishers, extinguishing systems, emergency lighting, panic hardware, fire exit hardware, and fire alarm control panels.

4.4. Storage of flammable or combustible liquids shall not physically obstruct a means of egress from a building or area.

5. Fire Prevention Training:

5.1. Unit Commanders, Division Chiefs, and Supervisors are responsible for conducting fire safety and prevention briefings to their subordinates at all levels to ensure their personnel are observing fire instructions and provide training in compliance with AFOSH Std. 91-56, *Fire Protection and Prevention* and OSHA Std. 1910.157, *Portable Fire Extinguishers*.

5.2. Annual fire extinguisher training is required for all personnel. It is the supervisor's responsibility to document fire extinguisher training on AF Form 55, **Employee Safety Health Record**. The fire inspector shall follow-up to ensure that all training is being conducted to meet the annual requirement.

5.3. It is required for all food service personnel to attain dry chemical system training on a semi-annual basis. Technical services can be requested to conduct this briefing.

5.4. Newly assigned personnel will be briefed within 30 days following their reporting date. Briefing topics include, building evacuation procedures and plans, fire reporting procedures and emergency telephone numbers, fire extinguisher training, fire alarm pull stations, designated assembly locations, and housekeeping practices.

5.5. The Technical Services section as requested will conduct fire extinguisher familiarization training.

5.6. All aircraft maintenance personnel are required annual AFFF fire protection training on the underwing fire protection system. Technical services shall give this training to personnel required with at least a 30-day notice to conduct this briefing.

5.7. Initial hands-on training is required for aircraft maintenance personnel with the use of water, which is simulated with a white-wheeled 150-lb fire extinguisher.

5.8. Building evacuation drills are conducted in compliance with NFPA 101, *Life Safety Code*, for the designated type of occupancy.

6. Fire Prevention in Hangars, Shops, and Flightline:

6.1. Hangar chiefs, shop foreman, and supervisors are responsible for fire safety compliance within their workplace.

6.2. Aircraft will not be fueled or de-fueled while inside hangar or within 50 ft. of hangar doors.

6.3. Aircraft will not be serviced with oxygen while inside hangar or within 50 ft. of hangar door.

6.3.1. At least one (1) flightline approved fire extinguisher must be easily accessible during refueling or oxygen servicing operations.

6.4. Aircraft engines will not be operated inside hangars under any circumstances, except during engine compressor wash operations and then only by external air cart to provide engine rotation.

6.4.1. Aircraft engines and Auxiliary Power Units will not be started inside hangers.

6.5. No open flame, spark-producing device exposed filament heater or any equipment capable of igniting vapors or gases are permitted within 50 feet of any maintenance section of the hangar except the weld shop.

6.5.1. Blow torches, soldering irons, and other equipment in which open flames must be used will be restricted to isolated places where there is air circulation and no explosive vapors are present. AF Form 592, **Welding, Cutting, and Brazing Permit**, must be obtained from the Technical Services Office prior to beginning any open-flame operation outside specifically designated welding shop areas.

6.6. Electrical equipment within the hangar and shops will be of the type approved specifically for the hazardous location as defined in the National Electrical Code. Operation of all electrical equipment will be disconnected immediately upon recognition of an unsafe or hazardous condition.

6.7. Equipment or storage will not be stored in such a manner as to block exits, interfere with fire protection underwing monitors, or block accessibility or visibility of fire extinguishers.

6.8. Quantities of flammable and combustible liquids required to perform maintenance shall be stored in approved containers and its contents labeled. The labeled containers shall be housed within approved cabinets.

6.8.1. Drip fuel pans and bowsers shall be used to catch fuel leaking from aircraft. Containers shall be bonded and grounded.

6.9. Fuel spills are divided into three (3) classes, each requiring specific action. All fuel spills will be reported immediately to the Fire Dept. by calling 911.

6.10. Inspections of hangars and shops will be made daily to ensure a fire safe condition is maintained prior to closing shops and hangars.

6.11. Flightline extinguishers are accountable and maintained by the fire protection authority. Damaged, used or inoperable extinguishers shall be removed from service and reported to the fire department alarm communication center, or technical services for required maintenance or repair.

7. Motor Vehicle Maintenance Fire Prevention:

7.1. Shop foreman and supervisors are responsible for fire safety compliance within their workplace.

7.2. Special activities necessary to perform vehicle maintenance operations, such as painting, welding, or other hazardous operations will be performed in places or areas designated for that purpose.

7.3. Flame producing devices will be prohibited throughout the facility except in specifically designated locations, such as the welding section.

7.4. Precautions in battery shops will be strictly in compliance with provisions of AFOSH Std. 91-66, *General Industrial Operations*, 127-20 *Vehicle Maintenance Shop*, and other applicable directives.

7.4.1. In battery shops, any spark producing equipment, such as electric lights, motors, etc., shall be explosion proof unless otherwise superseded by prevailing codes.

7.4.2. No flammable, combustible or oxidizing products of any sort will be used or stored in battery shop rooms.

7.5. Where compressed natural gas (CNG) vehicles are repaired or stored the area within 18" of the ceiling shall be classified as Class 1, Division 2, except where at least four (4) air changes per hour is provided. Electrical equipment must conform to NEC 70, National Electrical Code, and Hazardous Locations for Repair Garages.

7.6. Cleaning of parts shall be performed with a non-flammable solvent.

7.7. Housekeeping by an authorized employee shall make daily inspections to remove any accumulations of combustibles.

7.8. Floors and workbenches shall be kept clean and free of oil and grease. The oily rags shall be kept in separate metal canisters.

7.9. The exhaust system will be in operation while maintenance is being performed on refueling units in vehicle maintenance refueling bays.

7.10. Should gasoline tanks overflow during refueling operations, the engine will not be started until the fuel has evaporated.

8. Fire Prevention in Places of Public Assembly, Recreation, and Billeting Facilities:

8.1. Managers of places of public assembly and recreational facilities are responsible for fire safety compliance within areas of their jurisdiction. This responsibility extends over contracted services.

8.2. Managers of public assembly and recreational facilities must establish and maintain a certification system to ensure employees have been trained and understand their fire prevention responsibilities within their work environment.

8.2.1. The certification program requires documented quarterly training of employees and newly hired personnel.

8.3. Managers or alternates will conduct closing inspections of public assembly and recreational buildings, meaning that the facility is in a fire safe condition at close of the business tour. This includes special events after the hours of 1530.

8.3.1. The closing inspection will be reported to the fire alarm communication center for entry in the daily logbook at extension 5175.

8.4. Managers of facilities where commercial or restaurant type cooking is performed will establish and enforce procedures to ensure all grease filters and exposed surfaces of kitchen range hoods are thoroughly cleaned daily.

8.4.1. An automatic fire extinguishing system shall be operational at all times and a semi-annual inspection must be done to meet compliance with AFJMAN 32-1059, *Maintenance of Fire Protection Systems* and NFPA Codes. In the event of the extinguishing system being out-of-service no cooking will be allowed and the Fire Dept. is to be notified immediately.

8.4.2. Hood and exhaust ducts serving cooking equipment shall be thoroughly cleaned every six (6) months, to be in compliance with AFOSH Std. 91-56 and NFPA 96, *Fire Protection of Com-*

mercial Cooking Operations. Documentation must be forwarded to the fire prevention office within ten working days.

8.4.3. Cooking is not permitted under range hood without grease filters installed and exhaust fan turned on.

8.5. A qualified technician semi-annually at the user expense must test dual thermostats and certification must be forwarded to the technical services section within ten (10) days of the testing.

8.5.1. Metal covers must be provided and pre-positioned for each deep fat-fryer for immediate use in case of a grease fire.

8.6. Open flame (candles) designed to enhance atmosphere in places of public assembly are not permitted in Air Force facilities unless they are housed in stable, non-combustible bases and the flame is protected from coming in contact with combustible materials.

8.7. The fire inspector will inspect all hotels that are contracted out for this installation annually along with the services manager. This is to assure that these hotels are in compliance with NFPA 1, *Fire Prevention Code*, and State Fire Codes.

8.7.1. An evacuation plan for each hotel room should be available for every occupant residing in contract billeting.

8.7.2. Emergency telephone numbers should be visibly accessible to all occupants.

8.8. In facilities of public assembly where social events are planned, the facility manager or alternate will notify the fire prevention authority prior to displaying any unusual arrangements or displays.

8.9. Every room constituting a public assembly shall post the occupant load near the main exit of the room, NFPA 101, *Life Safety Code*.

9. Miscellaneous Fire Prevention Policies and Procedures:

9.1. Prohibit the use of combustible draperies, decorations, and other materials on the interior or exterior of any building, including vegetation (cornstalks, hay, etc.).

9.1.1. Ensure all installed curtains and drapes are flame retardant material or treated with flame retardant material.

9.2. The occupants of mobile homes located on base will have at least two smoke detectors installed, one at each end of the mobile home. The installation of fire extinguishers is also mandatory. Contact the technical services office for correct size and placement.

9.2.1. Storage of combustible material and flammable liquids beneath mobile homes is prohibited.

9.3. Importance of fire reporting. In many instances, delayed or improper fire reporting has resulted in excessive damage to property and loss of life. It is the duty of all military or civilian personnel who discover a fire, regardless how minor in nature, to immediately notify the fire department by the most expeditious means by dialing 911, radio, or runner.

NOTE: Any person using a cellular phone to report an emergency must dial 482-5175.

- 9.4. No open fires of any nature are allowed on this installation. The base fire chief is the only person to authorize any open burning.
- 9.5. Clothes dryers will be vented to the outside of the building. Area around/behind dryers shall be cleaned weekly.
- 9.6. No fireworks of any kind are allowed on this base.
- 9.7. No smoking is allowed in any building on this installation with the exception of the Drop Zone Club in the bar area only. All smoking in designated areas must be done at least 20 ft. away from the building. Smoking material must be extinguished in receptacles and no combustible material of any kind is to be set in these receptacles.
- 9.8. Dip tanks or bench-washing vats shall be made of metal construction, equipped with self-closing lids and a fusible link. Lids will not be wired or propped in the open position.
- 9.9. Smoking and open flames shall not be permitted in storage areas, POL area, and the flightline.
- 9.10. Portable LP gas cylinders shall not be stored in facilities. LP gas fueled grills and other like appliances may be stored inside facilities provided the portable gas cylinder has been removed.
- 9.11. Disposal of charcoal ashes in waste dumpsters is prohibited and must be extinguished with water if left unattended.
- 9.12. All trash dumpsters must be at least 15 feet away from any building.
- 9.13. Holiday and Public Gathering Procedures:
- 9.13.1. Natural Christmas trees will not be displayed in any facility unless risk is accepted, in writing, by the base fire chief and forwarded to the technical services section of the fire department.
 - 9.13.2. Both natural and artificial Christmas trees must be chemically treated with or inherently flame retardant.
 - 9.13.3. Trees will be well secured against falling and will be placed so they will not block or hamper means of egress.
 - 9.13.4. Electrical devices of any type are prohibited on metallic type Christmas trees.
- 9.14. Safeguards during building construction and demolition operations, shall comply with NFPA 1, *Fire Prevention Code*, Chapter 41, Safeguards during Building Construction and Demolition Operations.
- 9.14.1. The technical services office shall be notified of any tests from the contractors for fire alarm systems and sprinkler systems for new and existing construction.
 - 9.14.2. The fire prevention section will attend pre-conference meetings to brief contractors for pertinent fire safety operations during contract performance.
 - 9.14.3. The fire inspector will be present at work request meetings to collaborate on work requests to comply for building construction, self-help projects, and/or fire safety deficiencies or hazards.
 - 9.14.4. All fire protection systems and fire alarm/detection systems must be in-service before any occupancy may be awarded to the user(s) of the facility.

9.14.5. Anytime the contractor is to do any type of open flame work the contractor will report to the fire station, B-212. The technical services section, and or a certified Fire Inspector I shall issue an USAF Welding, Cutting, or Brazing Permit.

9.14.6. The contractor is responsible to have his own fire extinguisher on scene and after completion of the job he/she shall return to the fire station with the permit to identify the area is fire safe and must sign line #16 on the open flame permit to distinguish the area is safe.

9.15. All fire protection systems and detection/alarm systems must be inspected and tested to stay in compliance with AFJMAN 32-1059, *Maintenance of Fire Protection Systems*.

9.16. All unit commanders, division chiefs, facility managers, supervisors, and subordinates at all levels are responsible for complying with the fire prevention policies and procedures covered in this instruction.

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