

**BY ORDER OF THE  
SUPERINTENDENT**

**HQ UNITED STATES AIR FORCE  
ACADEMY INSTRUCTION 32-2001**

**31 MAY 2019**



**Civil Engineering**

**FIRE PREVENTION PRACTICES AND  
FIRE PROTECTION ENGINEERING  
STANDARDS**

**COMPLIANCE WITH THIS PUBLICATION IS MANDATORY**

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This instruction implements Air Force Policy Directive (AFPD) 32-20, *Fire Emergency Services*. The direction contained establishes and assigns fire prevention and fire protection engineering standards, policies, procedures, and responsibilities on the United States Air Force Academy (USAFA). It provides guidance to assist commanders in protecting property and personnel under their control. This instruction applies to all personnel and activities occupying or utilizing property on USAFA and off-base sites, including tenant units, vendors, concessionaires, contractors, and their employees. Should any existing contract requirement or statement of work conflict with guidance contained in this instruction, a request to modify that provision to comply with this instruction shall be forwarded to the Contracting Officer for inclusion in the next modification accomplished on the contract. This publication does apply to the US Air Force Reserve, Air National Guard, and Civil Air Patrol. Refer recommended changes and conflicts between this and other publications to 10 CES/CEF, 6202 Pine Drive Suite 100 USAF Academy, Colorado 80840, on Air Force (AF) Form 847, *Recommendation for Change of Publication*. The authorities to waive requirements in this publication are identified with a Tier 3 (T-3) number following the compliance statement. See AFI 33-360, *Publications and Forms Management*, for a description of the authorities associated with the Tier numbers. Submit requests for waivers through the chain of command to the appropriate Tier waiver approval authority. The waiver authority for non-tiered requirements in this publication is the (10 CES/CC). Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with Air Force Manual (AFMAN) 33-363, *Management of Records*, and disposed of in accordance with the Air Force Records Information Management System (AFRIMS) Records

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### ***SUMMARY OF CHANGES***

This document is substantially revised and must be completely reviewed. Major changes include updating facility manager responsibilities and consolidating requirements.

**1. Objective.** The objective of the fire prevention program is to reduce or eliminate the potential for fires, thereby reducing loss of life, injury and property damage if a fire occurs. Achievement of this objective requires commander's support at all levels and the active participation of all personnel. Sound fire prevention practices help provide a safe environment for our personnel to live and work.

### **2. Responsibilities:**

2.1. 10TH AIR BASE WING COMMANDER (10 ABW/CC): The 10 ABW/CC exercises primary responsibility through the Base Civil Engineer. The 10 ABW/CC will be notified when a hazard creating an imminently dangerous situation cannot be resolved by concerned parties to determine if it should be eliminated, an operation should be discontinued, or implementation of interim controls will be necessary to reduce the risk posed by the situation.

2.2. UNIT COMMANDERS: Unit Commanders/Directors are responsible for overall fire safety within their unit. Unit Commanders/Directors will:

2.2.1. Develop a fire safety program based on the identified risk in their facilities and operations. Formal fire inspections and risk analyzes are provided by the Fire Prevention Office (10 CES/CEF).

2.2.2. Ensure all facility managers receive training on procedures and processes to complete their duties.

2.2.2.1. Ensure facility managers prepare appropriate mitigation options to correct all Fire Safety Deficiencies (FSD's) per section #3 of this publication.

2.2.3. Initiate appropriate administrative or disciplinary action against personnel who willfully damage or tamper with fire protection systems and devices, initiate false reports, or fail to comply with the fire prevention policies or practices through misconduct, disregard for fire directives, or negligence.

2.3. FACILITY MANAGERS: Each facility manager is responsible to the unit commander for the condition of all facilities under their authority. Facility managers or alternates will:

2.3.1. Develop fire prevention procedures appropriate for their facility. Fire Prevention personnel are available to assist.

2.3.2. Conduct periodic fire prevention inspections of assigned facilities and initiate corrective action on fire hazards or deficiencies found during the inspection.

2.3.3. Ensure all fire extinguishers, exit lights, and emergency lights are inspected on a monthly basis to ensure proper operating condition. Emergency lights and exit lights

shall be tested for no less than 30 seconds once a month. Discrepancies involving fire extinguishers should be referred to the fire extinguisher maintenance section at 333-2902.

2.3.4. Ensure exit doors in facilities are unobstructed and unlocked at all times while the facility is occupied. Draperies, decorations, or placards must not block exit signs or doors.

2.3.5. Ensure exits, entryways, fire hydrants and fire department connections are kept free of snow and ice accumulation.

2.3.6. Ensure no locks, padlocks, hasp, bars, chains, or other devices are installed on any door used to exit an area or facility.

2.3.7. Ensure fire rated doors are kept closed at all times, with the exception of those equipped with magnetic releases. *Doorstops or other non-approved devices will not be installed on fire rated doors.*

2.3.8. Ensure fire evacuation drills are conducted in accordance with facilities occupancy classification in Life Safety Code 101.

2.4. EMPLOYEE SUPERVISORS: Employee supervisors at all levels are responsible for fire safety in their work areas and operations. Training requirements are outlined in Air Force Manual 91-203, Chapter 6, *Air Force Occupational Safety, Fire, and Health Standard*. Fire Prevention personnel are available to assist in developing and customizing this training. Training is required annually.

**3. Processing and Managing FSDs.** All FSDs are managed through a two part process: a Risk Management (RM) plan, and a corrective action plan (CAP). Each of these satisfies a different part of the overall risk management process. The RM plan is intended to satisfy the requirements outlined in AFI 90-802, Section C.8. This Plan will identify the processes and procedures for the overall affected population when working with or around the FSD. The CAP is intended to articulate the efforts that will be made to correct the deficiency. These efforts may be programming, in-house work, or another means or repair/correction determined by the specific deficiency.

3.1. Risk Management Plans. The RM plan will be developed as a temporary deviation IAW AFI 32-2001, paragraph 2.7.1. Risk should be accepted by the owning organization commander based on risk severity. These measures, to the maximum degree possible, shall ensure personnel safety as well as mission continuity (and, as appropriate, high-value asset protection) until the impairment is corrected. The RM plan shall be prepared by the facility user with the support of Fire and Emergency Services and wing safety as needed. The RM package must also identify the remaining mission risk exposure due to the temporary deviation. In the absence of interim control measures, the facility shall be evacuated or operations stopped.

3.1.1. Implementation of interim control measures are not considered a permanent fix and shall not reduce the priority required to correct the impairment. The RM plan shall be approved IAW AFI 32-2001, paragraph 2.7.1. **(T-2)**.

3.2. FSD I. FSD I indicates a deficiency with the greatest risk to life and mission continuity. Facilities with an identified FSD I not being corrected through **paragraph 3.3**, "In-House

Work,” should not be occupied except in accordance with an approved corrective action plan which includes interim control measures.

3.2.1. Corrective Action Plan. For an existing facility, a mitigation/corrective action plan shall be prepared by the facility user with the support of the fire emergency service flight, the engineering flight, the operations flight (as appropriate), and wing safety. The plan shall specifically identify the level of occupancy and operations permitted pending the correction of the FSD I. The wing commander shall approve the plan before forwarding it to the Air Force Academy Directorate of Logistics, Engineering & Force Protection (HQ USAFA/A4/7) for informational purposes.

3.2.2. Alternatives/Equivalencies. Requests for approval of alternative or equivalent methods to meet the intent of a criteria requirement must be submitted through the MAJCOM to Air Force Civil Engineer Center/Operations Directorate Engineer (AFCEC/COS) (see UFC 3-600-01) by the appropriate commander. Alternative equivalency requests should be submitted following the staff study process and format in Air Force Handbook (AFH) 33-337, *Tongue and Quill*. Emphasis should be placed on explaining how the selected technical solution/process achieves the intent of the criteria requirement.

3.2.3. Exemptions. Requests for permanent exemption to criteria must be submitted through the MAJCOM to AFCEC/COS (see UFC 3-600-01) by the appropriate commander. Exemptions should be submitted following the staff study process and format in AFH 33-337. Emphasis should be placed on explaining how the increased mission continuity risk can be tolerated/assumed by the Air Force.

3.3. FSD II. FSD II indicates a significant risk to mission continuity and/or existing property capability. Facilities with an identified FSD II not being corrected through [paragraph 3.3](#), “In-House Work,” should not be occupied unless interim control measures are in place.

3.3.1. Corrective Action Plan. For an existing facility, a mitigation/corrective action plan shall be prepared by the facility user with the support of the fire emergency service flight, the engineering flight, the operations flight (as appropriate), and wing safety. The plan shall specifically identify the level of occupancy and operations permitted pending the correction of the FSD II. The wing commander (or other appropriate commander) shall approve the plan before forwarding it to the MAJCOM/A7 for information.

3.3.2. Repair or Correction of Fire Protection System Impairments/Feature Performance.

1. Impairments affecting the performance of installed fire protection features shall be corrected immediately after identification using the highest priority in the appropriate repair work identification and management system.
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2. When the impairment will exist for more than 72 hours, an FSD II is established and the installation authorities for fire system/feature maintenance and fire emergency services shall collaborate with the facility/area user to jointly develop written control/mitigation measures. These measures, to the maximum degree possible, shall ensure personnel safety as well as mission continuity (and, as appropriate, high-value asset protection) until the impairment is corrected. The jointly developed package must also identify the remaining mission risk
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exposure. In the absence of interim control measures, the facility shall be evacuated or operations stopped. Implementation of interim control measures are not considered a permanent fix and shall not reduce the priority required to correct the impairment.

3. The maintenance activity must inform the installation and/or operational commanders of new impairments not corrected within 72 hours, the jointly developed interim control measures being recommended, and the remaining mission risk exposure.

4. The maintenance activity must regularly inform the installation and/or operational commanders, not less than annually, on the status of system impairments, in-place compensatory measures, projected corrective actions, and corrective actions completed since the last report.

3.3.3. Alternatives/Equivalences. Requests for approval of alternative or equivalent methods to meet the intent of a criteria requirement must be submitted through the MAJCOM to HQ AFCEC/COS by the appropriate commander. Alternative/equivalency requests should be submitted following the staff study process and format in AFH 33-337, *The Tongue and Quill*. Emphasis should be placed on explaining how the selected technical solution/process achieves the intent of the criteria requirement.

3.3.4. Exemptions. Requests for permanent exemption to criteria must be submitted through the MAJCOM to HQ AFCEC/COS by the appropriate commander. Exemptions should be submitted following the staff study process and format in AFH 33-337. Emphasis should be placed on explaining how the increased mission continuity risk can be tolerated/assumed by the Air Force.

3.4. FSD III. FSD III indicates a deficiency with the least risk to life, mission continuity and/or existing property capability. Facilities with an identified FSD III may be routinely occupied. FSD IIIs are typically identified, tracked, and corrected during scheduled facility renovation or remodeling projects.

3.5. In-House Work. Deficiencies identified during the fire prevention inspection process (AFI 32-2001, *Fire Emergency Services*) or the reoccurring maintenance and repair process (UFC 3-601-02) are initially considered for correction through the in-service work program. If Civil Engineer Operations (CEO) approves the work to be accomplished in-house, then the CE shops will accomplish the work and fill out the appropriate Civil Engineering Operations database automated records.

3.5.1. Corrective Action Plans for In-Service Work. The approved/funded job order/work order represents the installation's commitment of resources to the corrective action and will be considered the corrective action plan required under [paragraph 3.1.1](#) or [3.2.1](#) of this instruction. No additional approval is required outside the in-service work plan process.

3.5.2. Rating FSD and Other Work Requirements Combined in a Single Work Package. Deficiency corrective actions are often combined with other maintenance and repair tasks in a single in-service work package. Such combined work packages will be coded as an FSD correction package only if more than 50 percent of the combined package cost is directly related to the FSD correction work.

3.6. New Project. Regardless of funding source, when a new project, is required to correct an identified FSD, the information will be transferred to the Engineering Flight and the documentation that was entered into the Civil Engineering Operations database must be reentered into the Civil Engineering Project Management database. **Note:** For accurate tracking and FSD management, the FSD fields must also be reentered into the Civil Engineering Project Management database. From this point forward, the project is managed like any other design project.

3.6.1. Rating FSD and Other Work Requirements Combined in a Single Project. Projects that include a scope of work greater than required for correction of identified FSDs will not classify the entire project as an FSD correction project unless at least 50 percent of the programmed funding is specifically intended to address correction of the FSDs. For example, a building renovation project programmed for \$100K that includes one FSD correction requirement for \$2K would not include an overall FSD code rating in the project scoring process.

3.6.2. Rating Multiple FSD Requirements in a Single Project. Projects that include correction of multiple FSDs representing at least 50 percent of the programmed funding will reflect the least severe code found in those multiple FSDs. For example, a project that combines one FSD I (10 percent of the programmed funding), four FSD IIs (30 percent), two FSD IIIs (15 percent), and some non-FSD work (45 percent) would be rated as an overall FSD III project in the project scoring process. If any single FSD code accounts for at least 50% of the total programmed costs the project will reflect the code regardless of the severity of other requirements. For example, a project that combines one FSD I (10 percent of the programmed funding), four FSD IIs (60 percent), two FSD IIIs (15 percent), and some non-FSD work (15 percent) would be rated as an overall FSD II project in the project scoring process.

3.7. Fire Protection Engineering Analysis. UFC 3-600-01, paragraph 1-4, requires every design to receive a fire protection design analysis; paragraph 1-5 requires this analysis be conducted by a qualified fire protection engineer for major projects. In some cases the results of the analysis is —no analysis is required. Attachment 3 provides a matrix describing when an analysis is required and what type of analysis is required.

3.7.1. Phased projects will be considered cumulatively when determining whether or not the project requires an analysis in accordance with UFC 3-600-01, paragraph 1-4 or 1-5.

3.7.2. Phased projects will be considered cumulatively when determining the percentage of the facility involved and cost of the work versus the replacement cost of the facility.

3.7.3. The initial analysis of phased projects will evaluate all phases together and a comprehensive documentation package will be developed and follow all phases through the design, construction, maintenance, or repair process.

#### **4. Fire and Emergency Reporting Methods and Procedures:**

4.1. EMERGENCY REPORTING: When a fire is discovered, the first and primary objective is to implement the emergency action plan for the facility or area. This plan should include evacuation procedures, instruction on activating the fire alarm system and directions to call 911. All fires and emergency incidents must be reported by calling 911, even if the fire has been extinguished. If a fire alarm is activated in a building, occupants should still

call 911 after evacuating the facility to provide additional information. When reporting an emergency, include as much information as possible, including the facility address or building number, nature of the emergency, your name and telephone number.

4.2. FALSE ALARMS: If the alarm activation is known to be an accident, please call 911 immediately to cancel the emergency response.

## 5. General Fire Prevention Practices:

5.1. Extension cords shall not be used as a substitute for permanent wiring. They cannot be attached to structures, run through doors, doorways, windows, holes in walls, ceilings, under carpet, etc. Extension cords will be in serviceable condition and approved by a recognized testing agency or laboratory. Only three wire cords may be used; frayed, deteriorated, spliced, or otherwise degraded cords will not be used. Multi-outlet assemblies must have a built-in surge protector. The use of surge protectors and/or extension cords, in combination, is prohibited.

5.2. Mechanical rooms, including communication rooms, shall not be used to store items other than those necessary for the function of installed equipment.

5.3. All combustible or flammable liquids will be stored in approved flammable storage cabinets or lockers unless the facility is specifically designed for flammable liquids storage.

5.4. Welding, cutting, or brazing will not be accomplished until a valid AF Form 592, *USAF Hot Work Permit*, has been issued by the Fire Department. Permits are not required for authorized welding shops.

5.5. No open fires, other than campfires in an approved area, are permitted unless approved by the Fire Department. The use of charcoal or propane fueled BBQ grills, chimeneas or fire pits are allowed on the Academy and during all events hosted at the Falcon Football Stadium parking lots. These cooking and/or warming fires must be attended while in use. Unattended fires will be extinguished.

5.6. Only Underwriters Laboratory (UL) listed space heaters equipped with automatic shut-off devices that will shut off the heater if it tips over are authorized. There must be at least 36 inches of clearance from combustibles such as drapes, trashcans, or furniture. Space heaters must be plugged directly into a wall receptacle; they may not be plugged into multiple outlet strips or an extension cord. Space heaters must be unplugged at the end of each workday shift.

5.7. Storage of items must provide a minimum of 18 inches clearance between ceilings, and any fire detection devices or appliances, and fire sprinkler heads. Users must maintain a minimum of 3 feet clearance in front of and to the sides of electrical circuit panels.

5.8. The use of open-flame devices such as candles, liquid or solid fuel burners, incense, etc., are prohibited unless approved by the Fire Prevention Office.

5.9. Personal fireworks are prohibited on the Air Force Academy.

5.10. Cooking is prohibited in all buildings except those areas specifically designated for kitchen use. Microwave cooking is allowed in common areas. No hotplates, forman grills, electric woks, or any heat creating cooking appliance is allowed in dormitory rooms. Cooking appliances will not be left unattended when in use. Lids should be readily available

for the control of grease fires when cooking. Do not attempt to remove a burning pan from the stove. Place a lid on the pan; turn off the heat, then call 911. Turkey fryers or similar open flame cooking appliances shall not be operated indoors, on combustible decking, or within 25 feet of any structure. A fire extinguisher must be present when using a turkey fryer or similar open flame cooking appliance.

## **6. Decorations and Arrangements for Special Events and Gatherings:**

6.1. NOTIFICATION OF SPECIAL EVENTS: The Fire Prevention office (333-2051) must be notified prior to all special events held in base facilities where the occupant load may be exceeded.

6.2. DECORATIONS AND FURNISHINGS: Decorations, curtains, drapes, etc., must not obstruct installed fire protection devices, hang from installed fire protection devices, block egress routes or exits, or interfere with the normal function of exits. For special events a formal review/approval can be requested through the Fire Prevention Office.

6.2.1. Holiday tree lighting and wiring must bear the UL seal of approval and be in good condition. Holiday lighting should not be left plugged in when the facility is unoccupied. Outdoor lighting and extension cords used for that purpose will be weatherproof and will be specifically designed for use outdoors.

6.2.2. Live holiday trees are prohibited in the following types of occupancies: dormitories, public assembly, medical facilities, and schools. In other occupancies, trees shall not obstruct egress to exits and must be kept away from sources of heat.

6.3. OCCUPANT LOAD: The fire prevention office will provide maximum occupant load information for any facility or area, upon request. It is the facility manager's responsibility to ensure the posted occupant load is not exceeded. An exception to the occupant load can be approved by the Fire Chief in accordance with the Life Safety Code.

## **7. COMMERCIAL KITCHENS:**

7.1. Food preparation or cooking that emits grease-laden vapors shall be protected with a hood and duct system that is equipped with an installed fire-suppression system. The duct system will vent to the outside of the facility.

7.2. Openings in hoods leading to the duct will be protected with filters that fit tightly. Cooking shall not be accomplished when these filters are not in place, or if the filters are not properly secured.

7.3. Kitchen ranges, hoods, filters, and surrounding area below the filters shall be cleaned at least daily or more often as needed by the employees.

7.4. Cooking appliances must be completely aligned under hoods at all times while in operation.

7.5. Thermostats on deep fat fryers will be tested at least annually. Tags or other appropriate documentation indicating the test results shall be maintained for each appliance tested.

JIMMY J. JEOUN, Lt. Col., USAF  
Commander



**Attachment 1**

**GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION**

***References***

AFPD 32-20, *Fire Emergency Services*, 10 Jul 2018

AFH 33-337, *The Tongue and Quill*, 27 May 2015

AFI 32-2001, *Fire and Emergency Services (F&ES) Program*, 28 September 2018

AFI 33-360, *Publications and Forms Management*, 1 December 2015

AFMAN 91-203, *Air Force Consolidated Occupational Safety Instruction*, 11 December 2018

AFMAN 33-363, *Management of Records*, 1 March 2008

NFPA Codes and Standards

***Adopted Forms***

AF Form 592, *USAF Hot Work Permit*

AF Form 847, *Recommendation for Change of Publication*