

**BY ORDER OF THE  
SECRETARY OF THE AIR FORCE**

**AIR FORCE INSTRUCTION 32-10141**

**15 MAY 2019**



**Civil Engineering**

**PLANNING AND PROGRAMMING  
FIRE SAFETY DEFICIENCY  
CORRECTION PROJECTS**

**COMPLIANCE WITH THIS PUBLICATION IS MANDATORY**

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This publication implements Air Force Policy Directive (AFPD) 32-10, *Installations and Facilities*, and supports processes implemented by AFPD 32-20, *Fire Emergency Services*. It establishes a program to identify, manage, classify, correct, defer and report fire safety deficiencies (FSD) as defined within this instruction. This instruction applies to uniformed members and civilian employees of the Regular Air Force, Air Force Reserve and Air National Guard performing duties at installations and activities in the United States and at enduring locations outside the United States. It does not apply at contingency locations. This publication may be supplemented at any level, but all direct supplements must be routed to the office of primary responsibility (OPR) of this publication for coordination prior to certification and approval. The authorities to waive wing/unit level requirements in this publication are identified with a Tier ("T-0, T-1, T-2, and T-3") number following the compliance statement. See Air Force Instruction (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, or, alternately, to the requestor's commander for non-tiered compliance items.

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

This document has been substantially revised and needs to be completely reviewed. Major changes include paragraph renumbering, removing tier numbers that reflect Major Command (MAJCOM) level and above waiver authority due to redundancy, and modifying waiver requirements to comply with new parent AFI requirements. This revision also clarifies the intent of the FSD program to mirror established processes in other directives, and it will streamline the FSD management process and ensure more ownership of the risk at the installation level.

## Chapter 1

### OVERVIEW

**1.1. Purpose.** This instruction defines roles and responsibilities and is designed to help effectively identify, plan, program, and advocate for the resources required to fix existing fire safety deficiencies (FSD) and avoid them during new construction.

**1.2. Scope.** This instruction implements the fire protection engineering policies established for the Air Force in Unified Facilities Criteria (UFC) 3-600-01, *Fire Protection Engineering for Facilities*.

## Chapter 2

### ROLES AND RESPONSIBILITIES

**2.1. Deputy Assistant Secretary of the Air Force for Environment, Safety, and Infrastructure (SAF/IEE).** Establishes and provides oversight of policies relating to real property, real property systems and components, engineering services, and grants waivers to those policies in appropriate circumstances.

**2.2. Director of Civil Engineers Headquarters (AF/A4C).** Provides programming guidance, oversight, and policy as required. AF/A4C will review, validate and approve operation and maintenance (O&M) funded projects classified as repair, unspecified minor military construction, or for operational requirements exceeding the active Air Force MAJCOM commander's delegated approval authority. (T-1). AF/A4C, through the Installation Support Panel, makes recommendations to the Assistant Secretary of the Air Force for Financial Management and Comptroller (SAF/FM), and the Air Force Group, Board, and Council on requirements for, and appropriate allocation of resources.

**2.3. Reserve Component Headquarters/Major Command/Field Operating Agency/Direct Reporting Unit.** Ensure compliance with the law and Department of Defense (DoD) and Air Force (AF) policies. Major Commands (MAJCOMs) are responsible for establishing quality standards; providing MAJCOM-unique guidance to supplement AF policies, procedures, and instructions; validating requirements identified by their installations; developing and promoting for sustainment, restoration, and modernization (S/R&M) projects; promoting timely obligation of funds; project approval within assigned approval authorities; and execution of projects. The Air National Guard (ANG) Civil Engineer (CE) and Air Force Reserve Command (AFRC) CE perform these MAJCOM functions for their installations. The ANG CE and AFRC CE will process packages for SAF/IEE approval for O&M-funded (repair or unspecified minor military construction) projects IAW thresholds identified in AFI 32-1032, *Planning and Programming Appropriated Fund Maintenance, Repair, and Construction Projects*. The ANG CE and the AFRC CE define ANG and Air Force Reserve installations' responsibilities if the organizational structure at the installation does include the following roles.

#### **2.4. Installation Commander**

2.4.1. Provide workplaces for all Air Force employees that are free from fire safety deficiencies to the extent possible and require unit commanders, tenant commanders, functional managers, and supervisors to enforce program requirements within their areas of responsibility. If fire safety deficiencies exist, eliminate or control them through engineering, substitution, isolation, administrative controls, revised procedures, special training, or personal protective clothing and equipment (PPE). (T-3).

2.4.2. Ensure qualified personnel evaluate and assign FSDs. (T-1).

2.4.3. Review FSD abatement projects and approve the Facility Board's established priorities in accordance with AFI 32-10142, *Facilities Board*. (T-1).

**2.5. Air Force Civil Engineer Center.** The Air Force Civil Engineer Center is responsible for the following:

2.5.1. Exemptions/Waivers. Receiving and processing all technical requests for waivers/deviations to Unified Facilities Criteria (UFC) and Facilities Criteria (FC) established by Department of Defense or the Air Force using the process and procedures in Military Standard 3007 (MIL STD 3007).

2.5.2. Subject Matter Experts (SME). Provide the technical expertise responsible for the development, interpretation and processing of UFC/FC waivers and deviations, determining alternatives, equivalencies and exceptions to technical guidance, and criteria related to design, construction, repair, sustainment, operations and maintenance of facilities and infrastructure.

**2.6. Functional Users or Functional Managers.** The organizational commander or director responsible for the care, custody, and protection of assigned real property will initiate the process to correct existing FSDs and assist in preventing the creation of new FSDs. (T-1). Responsibilities also include ensuring compliance with fire prevention requirements in their areas of responsibility and providing workplaces that are free from fire safety deficiencies.

**2.7. Facility Manager (Building Manager).** Conducts self-inspections for fire safety hazards and defects. Responsible for submitting work requests, or calling in work orders to correct FSDs. The installation fire prevention office is available to assist the facility manager in completing the work request by identifying necessary corrective actions and the applicable design standard.

**2.8. Base Civil Engineer (BCE).** Approves all FSD Code assignments. The BCE semi-annually briefs the Environment, Safety and Occupational Health Council (ESOHC) on FSDs I and II remaining open or completed since the last briefing and annually briefs the ESOHC on the total number of FSD IIIs corrected during the past year in accordance AFI 90-801, *Environment, Safety, And Occupational Health Councils*.

**2.9. Civil Engineering Flight (CEN).** Responsible for ensuring that projects meet the requirements in Unified Facilities Criteria (UFC) 3-600-01. (T-0). The engineering flight chief certifies the fire protection engineering analysis is conducted in accordance with UFC 3-600-1 paragraph 1-7, as well as Table 2.9 below. (T-1). Programmers are responsible for developing the documentation for the project (e.g., Defense Department (DD) Form 1391, *Fiscal Year Military Construction Project Data*) in accordance with AFI 32-1032. (T-1). Programmers need to confirm areas with FSDs have complete solution sets, correctly annotated, and no new FSDs are entered into the Civil Engineer Project Management database.

**Table 2.1. Fire Protection Engineering Analysis/Review Matrix.**

<b>Rule</b>	<b>If work involves</b>	<b>and</b>	<b>then the following is required</b>	<b>and</b>
	a sprinkler system	<p>any of the following exist:</p> <p>(a) providing a new or relocated point of connection to the water distribution system for installed water-based fire suppression systems. Connections must comply with AWWA Manuals 14 and 31. (T-1).</p> <p>(b) determining the applicable International Building Code requirements and NFPA standards to be applied, or, in the case where no such standard exists, the engineering study, judgments, and/or performance-based analysis and conclusions.</p> <p>(c) classifying room or area occupancy group.</p> <p>(d) establishing the design approach (this includes system type, densities, device temperature rating, and spacing for each separate hazard occupancy).</p> <p>(e) establishing the characteristics of water supply to be used, such as main size and location, whether it is dead-end or circulating; and if dead-end, the distance to the nearest circulating main, as well as its minimum duration and reliability for the most hydraulically demanding design area.</p> <p>(f) evaluating when private or public water supplies are used, the flow test data, including date and time of test, who conducted test or supplied information, test elevation, static gauge pressure at no flow, flow rate with residual gauge pressure, hydrant butt coefficient, and location of test in relation to the hydraulic point of service.</p> <p>(g) determining the valving and alarm requirements to minimize potential for impairments and unrecognized flow of water.</p> <p>(h) designing to prevent microbial induced corrosion (MIC). The engineer of record shall make reasonable efforts to identify water supplies that could lead to MIC. (T-1). Such efforts may consist of discussions with the local water purveyor and/or fire official, familiarity with conditions in the local area, or laboratory testing of water supplies. When conditions are found that may result in MIC contamination of the fire protection piping, the engineer shall design corrective measures. (T-1).</p> <p>(i) determining required backflow prevention</p>	analysis IAW UFC 3-600-01, paragraph 1-7	stamped / sealed / signed analysis and drawings.
<b>Rule</b>	<b>If work involves</b>	<b>and</b>	<b>then the following is required</b>	<b>and</b>

		local water purveyor requirements, including maximum allowable pressure drop. (j) establishing the performance specifications of all yard and interior fire protection components.		
2	a sprinkler system	relocating, replacing, installing 10 or fewer sprinkler heads and Rule 1 does not apply	analysis not required	N/A
3	a sprinkler system	relocating, replacing, installing 11 or more sprinkler heads and Rule 1 does not apply	analysis IAW UFC 3-600-01, paragraph 1-7.2.2	documented with project file.
4	a sprinkler system	relocating, replacing, installing 50 or more sprinkler heads	analysis IAW UFC 3-600-01, paragraph 1-7.2.2	stamped / sealed / signed analysis and drawings.
5	a detection and alarm system device	relocating, replacing, installing 5 or fewer devices and/or appliances	analysis not required	N/A
6	a detection and alarm system	relocating, replacing, installing 6 to 24 devices and/or appliances	analysis IAW UFC 3-600-01, paragraph 1-7.2	documented with project file.
7	a detection and alarm system	relocating, replacing, installing 25 or more devices and/or appliances	analysis IAW UFC 3-600-01, paragraph 1-7.1.1	stamped / sealed / signed analysis and drawings.
8	a fire protection control panel	relocating	analysis not required	N/A
9	a fire protection control panel	replacing, or installing (and Rule 5 or 6 applies)	analysis IAW UFC 3-600-01, paragraph 1-7.2.1	documented with project file.
10	a fire protection control panel	replacing, or installing (and Rule 7 applies)	analysis IAW UFC 3-600-01, paragraph 1-7.1.1	stamped / sealed / signed analysis and drawings.
11	a special fire suppression system (gaseous agents, dry chemical agents, carbon dioxide, etc.)	relocating, replacing, installing	analysis IAW UFC 3-600-01, paragraph 1-7.1.1	stamped / sealed / signed analysis and drawings.
12	a wet chemical fire suppression system over cooking equipment	relocating, replacing, installing	analysis IAW UFC 3-600-01, paragraph 1-7.2.1	documented with project file.
13	changes to the interior building structure/layout	less than 5% of the gross floor area is involved and the project does not add or move existing walls or change doors/openings	analysis not required	N/A

<b>Rule</b>	<b>If work involves</b>	<b>and</b>	<b>then the following is required</b>	<b>and</b>
14	changes to the interior building structure/layout	more than 5% of the gross floor area is involved or the project moves existing walls, or adds new walls or changes doors/openings	analysis IAW UFC 3-600-01, paragraph 1-7.2.1	documented with project file.
15	changes to the interior building structure/layout	constructed through the S/R&M process	analysis IAW UFC 3-600-01, paragraph 1-7.1.1	stamped / sealed / signed analysis and drawings.
16	changes to the interior building structure/layout	constructed through the Military Construction Process. (MCP)	analysis IAW UFC 3-600-01, paragraph 1-7.1.1	stamped / sealed / signed analysis and drawings.
17	an addition to an existing building	the original building and the adjacent building are not separated by a firewall meeting the requirements of the IBC or not all openings protected and the gross combined floor area is: a) < 15,000 square ft for Type I and II construction; or b) < 5,000 square ft for Type III, IV, and V construction	analysis IAW UFC 3-600-01, paragraph 1-7.2.1	documented with project file.
18	an addition to an existing building	the original building and the adjacent building are separated by a firewall meeting the requirements of the IBC with all openings protected and the gross combined floor area is: a) > 15,000 square ft for Type I and II construction; or b) > 5,000 square ft for Type III, IV, and V construction	analysis IAW UFC 3-600-01, paragraph 1-7.2.1	documented with project file; FPE review not required.
19	an addition to an existing building	the original building and the adjacent building are not separated by a firewall meeting the requirements of the IBC or not all openings protected and the gross combined floor area is: a) > 15,000 square ft for Type I and II construction; or b) > 5,000 square ft for Type III, IV, and V construction	analysis IAW UFC 3-600-01, paragraph 1-7.1.1	stamped / sealed / signed analysis and drawings.
20	an addition to an existing building	constructed through the MCP process	analysis IAW UFC 3-600-01, paragraph 1-7.1.1	stamped / sealed / signed analysis and drawings.
21	a new building	that is less than 3,000 square ft and does not involve any special occupancies listed in UFC 3-600-01, B-1.4	analysis IAW UFC 3-600-01, paragraph 1-7.2.1	documented with project file.
22	a new building	that is 3,000 square ft or greater	analysis IAW UFC 3-600-01, paragraph 1-7.1.1	stamped / sealed / signed analysis and drawings.
23	a new building	is any special occupancies specifically addressed in UFC 3-600-01, B-1.4	analysis IAW UFC 3-600-01, paragraph 1-7.1.1	stamped / sealed / signed analysis and drawings.



Rule	If work involves	and	then the following is required	and
24	a new building	constructed through the MCP process	analysis IAW UFC 3-600-01, paragraph 1-7.1.1	stamped / sealed / signed analysis and drawings.
25	the potable water distribution system	repairing without upgrading, modernizing, or relocating	analysis not required	N/A
26	the potable water distribution system	repair including upgrading, modernizing, relocating, or replacing, or new installations	analysis IAW UFC 3-600-01, paragraph 1-7.1.1	stamped / sealed / signed analysis and drawings.
27	a non-potable water system	upgrading, modernizing, relocating, replacing, or installing and where the system does not support fire suppression systems nor fire hydrants	analysis not required	N/A
28	a non-potable fire protection water system	upgrading, modernizing, relocating, replacing, or installing	analysis IAW UFC 3-600-01, paragraph 1-7.1.1	stamped / sealed / signed analysis and drawings.
29	the electrical distribution system	upgrading, modernizing, relocating, replacing, or new installations; and transformers or substations are not located within 50 feet of any structure	analysis not required	N/A
30	the electrical distribution system	upgrading, modernizing, relocating, replacing, or new installations; and transformers or substations are located within 50 feet of any structure	analysis IAW UFC 3-600-01, paragraph 1-7.1.1	stamped / sealed / signed analysis and drawings.
31	a phased project	all phased projects will be considered cumulatively when determining the percentage of building involved and to determine if any other rule applies to the project	the initial analysis will evaluate all phases together IAW 3-600-01, 34-2, <i>Phased Projects</i>	documented with project file through all phases of construction.

**2.10. Fire and Emergency Services Flight (F&ES).** Normally responsible for identifying FSDs. Once defined, the F&ES flight shall be involved in the work order review boards, facility working group meetings, and/or design review meetings. (T-2). The F&ES flight will attend pre-construction meetings and final facility inspections to certify fire safety policies, practices, and that the FSD is appropriately corrected. (T-1).

2.10.1. Additional F&ES responsibilities:

2.10.1.1. Conduct fire protection inspections and assessments. (T-1).

2.10.1.2. Evaluate fire hazard reports and coordinate actions with installation occupational safety personnel as required. (T-1).

2.10.1.3. Assign risk assessment codes (RACs) to fire-related hazards in accordance with AFI 91-202, *The United States Air Force Mishap Prevention Program*, and/or FSD rating

to FSDs in accordance with this instruction and coordinate them with safety officials as required. (T-1).

2.10.1.4. Maintain a file of approved permanent exemptions or alternative/equivalency exemptions related to fire protection standards and requirements. (T-1).

2.10.1.5. Maintain a file of approved mitigation/corrective action plans developed under this guidance to fire-related standards. (T-3).

## Chapter 3

### FIRE SAFETY DEFICIENCY (FSD)

**3.1. Existing Facilities.** Existing facilities on which no work is planned or underway are assumed to have been correctly constructed in accordance with codes and standards in effect at the time of design and/or construction. Standards in effect at the time the original construction project reached the 35 percent design complete stage are generally considered to be the design basis for the fire protection features of the facility.

3.1.1. A Fire Safety Deficiency (FSD) exists when it can be demonstrated that some function within the facility individually did not meet the minimum construction standards in effect at the time of design or construction.

3.1.2. An FSD exists when it can be shown the facility was modified or renovated and it can be demonstrated that the modified or renovated feature specifically did not meet the minimum construction standards in effect at the time of design, modification, or construction.

3.1.3. An FSD exists when it can be shown the facility occupancy (classification) changed and the building features did not meet the minimum construction standards in effect at the time of the occupancy change.

3.1.4. An FSD occurs in an existing facility when current codes or standards explicitly require retroactive level of installed fire protection or life safety features. Do not consider FSDs for different or additional fire protection features unless specified in the code or standard.

3.1.5. Generally, National Fire Protection Association (NFPA) standard 101, *Life Safety Code*®, establishes the minimum fire protection requirements for existing buildings. However, there are other standards, examples include NFPA 99, *Health Care Facilities Code*, the American Disabilities Act, and International Building Codes, which address specific occupancy requirements. These standards could also determine FSDs and be applied to all buildings immediately. A new requirement must have guidelines stating the technical specifications mandatory in all existing buildings (much like NFPA 101 has specific chapters establishing standards for existing occupancies). Failure to comply with Life Safety Code may be a hazard and therefore qualify for a risk assessment code (RAC). Consult with the safety office for this determination.

3.1.6. An FSD exists when the current installed fire protection features (e.g., construction elements, separation elements, fire detection/alarm systems, fire suppression systems) are not adequate for the current conditions (e.g., assets, materials, mission) in the facility. These conditions may result from changes in commodity configurations and/or materials, changes in function operations (such as open storage to rack storage), change in process from a manual operation to an automatic or electronic operation, change from routine administrative operations to 24/7 command and control, and change from a test platform to an operational mission platform.

3.1.7. An FSD exists when facility operations or mission changed and the building features did not meet the minimum construction standards in effect at the time of the change. FSDs are not created merely because current or future criteria require additional or different fire protection features than those currently installed in an existing facility. An FSD only exists if there is a protection deficiency, unless there is a specific changes in risk exposure.

3.1.8. An FSD identified during a fire inspection and not corrected during the visit, will require the inspector to prepare an AF Form 1487, *Fire Prevention Visit Report*. (T-1). The Fire Prevention Visit Report, in turn, may require the fire inspector to assist the facility manager with creating a job order (minor work) or work request to correct the deficiency.

**3.2. New Facilities.** New facilities shall include all the fire protection features required by applicable codes and standards. Any failure to meet any fire protection feature will create an FSD. (T-1). The fire chief or designated representative provides consultation and design recommendations regarding operational firefighting requirements. The fire chief is not responsible for fire protection or life safety system designs. The fire chief coordinates on design drawings to signify for the fire department that firefighting operational recommendations have been incorporated. This coordination does not indicate acceptance or approval of the fire protection engineering design. (T-2).

**3.3. Conflicting Criteria.** If conflicts exist among criteria, Unified Facilities Criteria (UFC) 3-600-01, *Fire Protection Engineering for Facilities*, will take precedence. (T-0). (**Note:** “Use the most stringent requirement” does not apply). In cases where conflicts among criteria are not resolved by the technical guidance in UFC 3-600-01, request clarification from the Air Force Installation and Mission Support Center (AFIMSC) Detachment designated fire protection engineer (DFPE) supporting the Major Command or in the absence of a DFPE, Air Force Civil Engineer Center, Engineer Division (AFCEC/COS). (T-1). For overseas installations, where UFC and the host nation fire protection engineering criteria conflict, the UFC criteria will apply unless an applicable international agreement requires the use of host nation criteria. Disputes in the technical features standards and approvals used to comply with the protection requirements will apply the host nation equipment standards and approvals. Request specific clarification from the AFIMSC Detachment designated fire protection engineer (DFPE) supporting the Major Command or in the absence of a DFPE, AFCEC/COS for a different correlation of the United States and Host Nation codes and criteria. (T-1).

**3.4. Fire Safety Deficiency (FSD) Codes.** An FSD is a condition which reduces fire safety below an acceptable level, including noncompliance with standards, but by itself cannot cause a fire to occur. FSDs have three ratings listed below and as determined by Attachment 2 of this document.

3.4.1. FSD I's include missing fire protection systems or missing NFPA 101 features in any building or process. Any facility FSD which is non-compliant with the following is considered an FSD I. (T-1).

3.4.1.1. New Facilities. New facilities must meet the requirements specified in UFC 3-600-01. (T-0). Such facilities shall not be considered as complete and usable until the deficiency is corrected. (T-2).

3.4.1.2. Modernized, Renovated, Repaired, Restored, Upgraded and Change-of-Occupancy Facilities. These facilities must meet the requirements of UFC 3-600-01. (T-0).

3.4.1.3. Existing Facilities. Existing facilities must meet the minimum requirements of NFPA 101 for existing occupancies in accordance with UFC 3-600-01. (T-0).

3.4.1.4. Impairments. Identified fire safety feature impairments for existing occupancies required by NFPA 101 which are not corrected within 72 hours. (T-1).

3.4.1.5. Other Deficiencies. Deficiencies in mission-priority facilities which impact mission continuity or generate a loss potential in excess of \$5 million and have been evaluated and approved by the installation fire marshal. (T-2).

3.4.2. FSD II's include deficiencies in existing fire protection systems or features in any building or process that fail to meet a fire or life safety requirement of a UFC or other document and items not covered by paragraph 3.4.1. of this instruction. (T-2).

3.4.3. FSD III are all other FSDs not covered by paragraphs 3.4. of this instruction are classified FSD IIIs. (T-2).

**3.5. FSD Code Decision Matrix.** Attachment 2 is a decision matrix to classify FSDs for various situations correctly.

## Chapter 4

### MANAGING FSDS

**4.1. Management of 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 Risk Management (RM) plan is intended to fulfill the requirements outlined in AFI 90-802, *Risk Management*. (T-1). 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 of repair or correction determined by the specific defect.

**4.2. Risk Management Plans.** The RM plan will be developed as a temporary deviation in accordance with AFI 32-2001, *Fire and Emergency Services (F&ES) Program*. (T-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. (T-1).

4.2.1. The RM plan shall be prepared by the facility user with the support of F&ES and wing safety as needed. (T-2). The RM package must also identify the remaining mission risk exposure due to the temporary deviation. (T-1). In the absence of interim control measures, the facility shall be evacuated, or operations stopped. (T-1).

4.2.2. Interim control measures implementation are not considered a permanent fix and shall not reduce the priority required to correct the impairment. The RM plan shall be approved in accordance with AFI 32-2001, chapter 2.7.1. (T-1).

**4.3. Corrective Action Plans.** Facility users prepare CAPs with the support of the Fire and Emergency Services, Engineering and/or Operations flights (as appropriate). The plan should identify the actions that are needed to correct the identified deficiency. The CAP may be programming, in-house work, or another means of repair or correction determined by the specific defect. The Base Civil Engineer is the signature authority for all CAPs. An approved and funded job order or work order represents the installation's commitment of resources to a corrective action and is considered the corrective action plan. No additional approval is needed outside the in-service work plan process.

**4.4. FSD III Deficiencies.** FSD IIIs indicate a deficiency with the least risk to life, mission continuity and or existing property capability. Facilities may routinely be occupied with an identified FSD III. Identify, track, and correct FSD IIIs during scheduled facility renovation or maintenance work. The RM and CAP requirement can be satisfied by tracking a work order within the operations maintenance system for FSD IIIs.

**4.5. Prioritization of Deficiencies.** Give highest priority to identified impairments that affect the performance of installed fire protection features in the appropriate repair work identification and management system. Immediate correction is required.

4.5.1. Establish an FSD 1 when impairments exist for more than 72 hours. The installation facility maintenance team, F&ES flight and facility user collaborate to develop a RM plan with written control measures, as a temporary deviation. The jointly developed package must identify the remaining mission risk exposure due to the temporary deviation, in accordance

with AFI 32-2001. (T-1). In the absence of interim control measures, the facility shall be evacuated and operations stopped. (T-1).

4.5.2. The maintenance activity must regularly inform the installation and/or operational commanders, not less than twice a year, on the status of system impairments, in-place compensatory measures, projected corrective actions, and corrective actions completed since the last report. (T-1).

**4.6. In-House Work.** Deficiencies identified during the fire prevention inspection process or the recurring maintenance and repair process are initially considered for correction through the in-service work program. The description of work should identify FSD I, II or III or RAC to elevate task to a higher work priority in the system. If Civil Engineering Operations (CEO) approves the work to be accomplished in-house, then the CE shops will accomplish the work and fill out the appropriate CE application system.

**4.7. Alternatives/Equivalencies.** Requests for approval of alternative or equivalent methods to meet the intent of a criteria requirement must be submitted in accordance with MIL STD 3007. (T-0). The Air Force agency for submitting alternative or equivalent methods is Facility Engineering Directorate Technical Services (AFCEC/CFT). Alternative and equivalency requests must be submitted in the format prescribed in MIL STD-3007. (T-0). AFCEC/CFT will route the package to the appropriate subject matter expert for evaluation and approval/disapproval. (T-0).

**4.8. Exemptions.** Requests for permanent exemption to criteria must be submitted in accordance with MIL STD 3007 to AFCEC/CFT by the Wing Commander. (T-0). Alternative and equivalency requests must be submitted in the format prescribed in MIL STD 3007. (T-0). AFCEC/CFT will route the package to the appropriate (SME) for evaluation. The SME will forward all exemptions recommended for approval for final evaluation and signature by AF/A4C. (T-0). The package submission must explain how the increased mission continuity risk can be tolerated/assumed by the Air Force.

**4.9. 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. (T-2).

**4.10. New Project.** 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 CEOs database must be reentered into the Civil Engineering Project Management database. (T-3).

**4.11. Staffing FSD Management packages.** FSD management packages should be completed on an AF Form 4437, *Deliberate Risk Acceptance Worksheet*. The form needs to contain a synopsis of the Corrective Action Plan as well as the Risk Management Plan.

4.11.1. Forward AF Form 4437 for approval in accordance with AFI 32-2001 as a temporary deviation. (T-1).

4.11.2. The submission package must contain the completed AF Form 4437, completed AF Form 1487, as well as an appropriate electronic staff summary sheet routing to the correct approval level. (T-1).

4.11.3. The wing commander shall coordinate on all FSD I's or Extremely High hazard packages before forwarding to AFIMSC Detachments and AF/A4C for informational purposes. (T-1).

4.11.4. Submit the completed Risk Acceptance Worksheet as supporting information with any alternative, equivalency or exemption approval request.

4.11.5. At the local level identify the office of primary responsibility for creating and maintaining a tracking database for ongoing open FSDs. This will be the clearing house for all FSDs between the installation stakeholders, F&ES, Operational Safety, Civil Engineer and installation commander.

**4.12. Authority Having Jurisdiction (AHJ).** The office responsible for approving exemptions and plans and interpreting technical criteria issues varies depending on the issue and its technical complexity.



## Chapter 5

### MILITARY CHILD CARE FACILITIES

**5.1. Military Child Care Facilities.** United States Code (USC) Title 10, Section 1794, *Child Abuse Prevention and Safety at Facilities*, requires immediate correction of life-threatening fire safety deficiencies at each child development and youth program facility. Correct non-life threatening fire safety violations at a child development or youth program facility within 90-days or close the facility until the violation is corrected.

**5.2.** An exemption to correct a non-life threatening deficiency may be available to authorize the facility to remain open in a case in which the violation cannot reasonably be remedied within those 90 days or in which major facility reconstruction is required. (T-0).

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## Attachment 1

## GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

**References**

AFI 32-1021, *Planning and Programming Military Construction (MILCON) Projects*, 14 June 2010  
 AFI 32-1032, *Planning and Programming Appropriated Fund Maintenance, Repair, and Construction Projects*, 24 September 2015  
 AFI 32-2001, *Fire and Emergency Services (F&ES) Program*, 28 September 2018  
 AFI 32-10142, *Facilities Board*, 06 October 2016  
 AFI 33-360, *Publications and Forms Management*, 01 December 2015  
 AFI 90-801, *Environment, Safety, and Occupational Health Councils*, 04 August 2016  
 AFI 90-802, *Risk Management*, 15 May 2017  
 AFI 91-202, *The U.S. Air Force Mishap Prevention Program*, 24 June 2015  
 AFMAN 33-363, *Management of Records*, 01 March 2008  
 AFD 32-10, *Installations and Facilities*, 04 March 2010  
 AFD 32-20, *Fire Emergency Services*, 10 July 2018  
 AWWA Manual 14, *Recommended Practice for Backflow Prevention and Cross-Connection Control*, 2015  
 AWWA Manual 31, *Distribution System Requirements for Fire Protection, Fourth Edition*, 2008  
 DoDI 6055.6, *DoD Fire and Emergency Services (F&ES) Program, IC*, 31 August 2018  
**MIL STD-3007**, *Standard Practice for Unified Facilities Criteria and Unified Facilities Guide Specifications*, 13 December 2006  
 NFPA 101: *Life Safety Code®*, 6 September 2017  
*The International Building Code*, November 2018  
 UFC 3-600-01, *Fire Protection Engineering for Facilities*, Change 2, 25 March 2018  
 10 USC Sec. 1794, *Child Abuse Prevention and Safety at Facilities*, 3 January 2007

**Adopted Forms**

AF Form 847, *Recommendation for Change of Publication*  
 AF Form 1487, *Fire Prevention Visit Report*  
 AF Form 4437, *Deliberate Risk Assessment Worksheet*  
 DD Form 1391, *Fiscal Year Military Construction Project Data*

**Abbreviations and Acronyms**

**AF/A4C**—Director of Civil Engineers Headquarters  
**AFCEC**—Air Force Civil Engineer Center  
**AFCEC/COS**—Air Force Civil Engineer Center, Engineer Division  
**AFCEC/CFT**—Facility Engineering Directorate Technical Services  
**ACGIH**—American Conference of Governmental Industrial Hygienists  
**AFI**—Air Force Instruction  
**AFIMSC**—Air Force Installation and Mission Support Center  
**AFPD**—Air Force Policy Directive  
**AFRC**—Air Force Reserve Command  
**AHJ**—Authority Having Jurisdiction  
**ANG**—Air National Guard  
**ANSI**—American National Standards Institute  
**AWWA**—American Water Works Association  
**BCE**—Base Civil Engineer

**CE**—Civil Engineering  
**CEO**—Civil Engineering, Operations Flight  
**CEN**—Civil Engineering, Engineering Flight  
**CGA**—Compressed Gas Association  
**DFPE**—Designated Fire Protection Engineer  
**ESOHC**—Environmental, Safety and Occupational Health Council  
**FC**—Facilities Criteria  
**FSD**—Fire Safety Deficiencies  
**IBC**—International Building Codes  
**MAJCOM**—Major Command  
**MCP**—Military Construction Process  
**NATO**—North Atlantic Treaty Organization  
**NFPA**—National Fire Protection Association  
**NIOSH**—National Institute for Occupational Safety and Health  
**O&M**—Operations and Maintenance  
**RM**—Risk Management  
**OSHA**—Occupational Safety and Health Administration  
**PPE**—Personal Protective Equipment  
**RAC**—Risk Assessment Code  
**S/R&M**—Sustainment/Restoration and Modernization  
**SAF/FM**—Assistant Secretary of the Air Force for Financial Management and Comptroller  
**SAF/IEE**—Deputy Assistant Secretary of the Air Force for Environment, Safety, and Infrastructure  
**SME**—Subject Matter Expert  
**UFC**—Unified Facilities Criteria  
**USC**—United States Code  
**24/7**—24 hours a day, seven days a week

**Terms**

**Active Air Force**—Members of the Regular Air Force, United States Air Force Academy Cadets, and Air National Guard and United States Air Force Reserve members serving on extended active duty (i.e., they are assigned to an active duty unit and their accountability is against active force strength).

**Administrative Control**—Direction or exercise of authority over subordinate or other organizations in respect to administrative matters such as personnel management, supply, services, and other matters not included in operational missions of the subordinate or other organizations.

**Air Force Reserve**—The Air Force Reserve is a reserve component of the Air Force to provide a reserve for active duty. It consists of the members of the officers' section of the Air Force Reserve and of the enlisted section of the Air Force Reserve. It includes all Reserves of the Air Force who are not members of the Air National Guard of the United States. The purpose of each reserve component is to provide trained units and qualified persons available for active duty in the armed forces, in time of war or national emergency, and at such other times as the national security may require, to fill the needs of the armed forces whenever more units and persons are needed than are in the regular components.

**Air Force Reserve Command**—A MAJCOM of the United States Air Force, with its headquarters stationed at Robins Air Force Base, Georgia.

**Air National Guard**—Federally recognized ANG of each state, the District of Columbia, Commonwealth of Puerto Rico, Guam, and the Virgin Islands.

**Approval Authority**—Senior leader responsible for contributing to and implementing policies and guidance/procedures pertaining to his/her functional area(s) (e.g., heads of functional two-letter offices).

**Authority Having Jurisdiction (AHJ)**—An organization or office responsible for enforcing the requirements of a code or standard, or for approving equipment, materials, an installation, or a procedure.

**Corrective Action**—A determination derived from command action.

**Distribution System**—Refers to the combination of the physical hardware required to deliver the commodity to end-use customers and the procedures and processes used to perform the actual delivery.

**Exemption**—An approved permanent change to a procedure, criterion, or rule prescribed in standards which provide an equivalent degree of protection to personnel.

**Facility Manager (Building Manager)**—The unit commander designates, in writing, an officer, senior noncommissioned officer, or civilian of equal rank as primary and alternate building manager for each facility assigned to the organization. The building manager is the representative and official contact whenever the building needs base civil engineering (BCE) work.

**Financial Management**—The combination of the two core functions of resource management and finance support.

**Fire Hazard**—A condition that can cause a fire to occur. The distinction between fire hazard and fire safety deficiency (FSD) is important because the documentation, reporting, and correction procedures differ for each. Only fire hazards are included in the Hazard Abatement Plan and FSDs are managed separately.

**Fire Prevention**—The office in the F&ES flight that deals with preventing the outbreak of fire by eliminating fire hazards through such activities as inspection, code enforcement, education, and investigation programs.

**Fire Protection**—Methods used to control or extinguish a fire, which includes actions taken to limit the adverse environmental, social, political, economic, and life-threatening effects of fire.

**Fire Safety Deficiency (FSD)**—A condition which reduces fire safety below an acceptable level, including noncompliance with standards, but by itself cannot cause a fire to occur. See Occupational Deficiency.

**Functional Managers**—The senior operating official at all levels exercising managerial control of an activity or operation. This individual usually can acquire and commit resources for the abatement of occupational safety and health hazards. Functional managers are designated by MAJCOM/FOA/DRU or installation commanders.

**Host Nation**—A nation which receives the forces and/or supplies of allied nations and/or North Atlantic Treaty Organization to be located on, to operate in, or to transit through its territory.

**Imminent Danger**—Conditions or practices in a workplace which could reasonably be expected to cause death or severe physical harm immediately or before such dangers can be eliminated through normal abatement procedures.

**Impairment**—Conditions which cause a fire safety feature to not perform as designed or intended by code or standard. Impairments include a much broader number of features than just detection or suppression systems.

**Installation Commander**—The individual responsible for all operations performed by an installation.

**Interim Control Measures**—Temporary actions taken to reduce the degree of risk associated with a hazard or deficiency pending completion of an abatement project. Interim control measures may not provide complete compliance with the required code or standard.

**Major Command**—For the purpose of this instruction, includes all USAF Major Commands plus the Air National Guard Readiness Center, Air Force Reserve Command, Direct Reporting Units, and Field Operating Agencies.

**Military Construction**—Any construction, alteration, development, conversion, or extension of any kind carried out with respect to a military installation.

**Corrective Action Plan**—A detailed plan to mitigate the deficiency risk present in facilities/locations with non-compliant facilities/equipment. The plan can be one of several different actions all design to remedy the issue.

**National Consensus Standards**—Standards published by recognized standards organizations such as the American National Standards Institute (ANSI), National Fire Protection Association (NFPA), American Conference of Governmental Industrial Hygienists (ACGIH), Compressed Gas Association (CGA), and National Institute for Occupational Safety and Health (NIOSH). National consensus standards adopted by Occupational Safety and Health Administration (OSHA) are part of OSHA standards.

**Occupational Deficiency**—Conditions, procedures and practices not compliant with OSHA or AFOSH requirements, but do not, in themselves, create a potential for producing an occupational injury or illness mishap. Deficiencies may, however, create a potential for secondary injuries or illnesses or may contribute to the severity of an injury or illness that has already occurred.

**Occupational Hazard**—Conditions, procedures, and practices directly related to the workplace that can create a potential for producing occupational injuries, property or equipment damage, mission degradation, damage to the environment, or illnesses. These hazards are normally assigned Risk Assessment Code (RAC) 1, RAC 2, or RAC 3.

**Operation And Maintenance**—Maintenance and repair of real property, operation of utilities, and provision of other services such as refuse collection and disposal, entomology, snow removal, and ice alleviation.

**Overseas**—A geographic area outside the jurisdiction of the United States (e.g., a foreign country).

**Protective Clothing**—Clothing especially designed, fabricated, or treated to protect personnel against hazards.

**Qualified Personnel**—Refers to those individuals with the technical skills required to perform various functions relating to corrective actions, inspection, production, and preventive maintenance activities. An individual is considered “qualified” if that individual has been trained to the level necessary to perform specific activities or functions under this technical order. Technical qualifications will vary by function being performed and technical competency required. For example, an individual qualified to troubleshoot a system will require more specialty/technical training than an individual qualified to remove and install a part. An individual qualified to remove and install a part will require more specialty/technical training than a custodian who conducts operational inspections and assessments.

**Real Property**—Means land, buildings, structures, utility systems, improvements, and appurtenances. Includes equipment attached to and part of buildings and structures, such as heating systems, but not movable equipment, such as plant equipment.

**Reserve Component**—The Air National Guard and Air Force Reserve of the United States.

**Risk Assessment Code (RAC)**—An expression of the degree of risk associated with an occupational hazard that combines hazard severity and mishap probability into a single numeric identifier. RAC 1 hazards are classified as imminent danger.

**United States**—The several States, District of Columbia, Commonwealths of Puerto Rico and Northern Mariana Islands, American Samoa, Guam, Midway and Wake Islands, United States Virgin Islands, any other territory or possession of the United States, and associated navigable waters, contiguous zones, and ocean waters of which the natural resources are under the exclusive management authority of the United States.

**Work Order**—A specific or blanket authorization to perform certain work.

## Attachment 2

## FIRE SAFETY DEFICIENCY CODE DECISION MATRIX

Table A2.1. Fire Safety Deficiency Code Decision Matrix.

Rule	If the deficiency is a result of	then the FSD code is
1	failure to meet the minimum NFPA 101 requirements for an <b>existing</b> building occupancy	1
2	failure to meet a fire or life safety requirement of a UFC or other document for an <b>existing</b> building and not covered under Rule 1	2
3	any deficiency in fire safety features resulting from new construction which does not meet the minimum construction requirements of UFC 3-600-01, 1-12	1
4	any deficiency in fire safety features which results from a modernization, renovation, repair, restoration, upgrade, or change of occupancy project which does not meet the minimum construction requirements of UFC 3-600-01, 1-12.13	1
5	any out-of-service or impaired means of egress feature required by NFPA 101 for an <b>existing</b> occupancy not corrected within 24 hours	1
6	any out-of-service or impaired means of egress feature and not covered under Rule 5	2
7	an out-of-service or impaired fire alarm and notification system required by NFPA 101 for an <b>existing</b> occupancy	1
8	a facility fire alarm system which does not report fire alarm signals to the fire alarm receiving center or other constantly attended location operated by trained personnel and protecting any facility used for sleeping or command, communications and control (C <sup>3</sup> ) facility (excludes battery-operated smoke detectors and similar alarms that are not part of the facility central fire alarm system)	1
9	an out-of-service fire alarm and notification system and not covered under Rules 7 and 8	2
10	a facility fire alarm which does not report fire alarm signals to the fire alarm receiving center or other 24/7 attended location operated by trained personnel and not covered under Rule 7	2
11	an out-of-service or impaired fire detection system required by NFPA 101 for an <b>existing</b> occupancy	1
12	an out-of-service or impaired fire detection system and not covered under Rule 11	2
13	an out-of-service or impaired fire suppression system required by NFPA 101 or UFC 3-600-01 for an <b>existing</b> occupancy	1
14	an out-of-service or impaired fire suppression system and not covered under Rule 13	2
15	any impairment which would prevent a fire suppression system, fire detection system or fire alarm/notification system from automatically responding to a fire event not covered by Rules 3, 7, 11, or 13	2
16	an air compressor or supplementary air supply either out of service or out of automatic service serving any type of dry-pipe or pre-action sprinkler system	1
17	two (2) or more fire pumps either out of service or out of automatic service in a fire protection water pump system/facility required by NFPA 101 for an <b>existing</b> occupancy	1
18	a fire pump either out of service or out of automatic service and not covered under Rule 17	2
19	one (1) or more pressure booster fire pumps is either out of service or out of automatic service providing supplementary pressure to fire suppression systems required by NFPA 101 for an <b>existing</b> occupancy	2
20	a fire protection system pressure maintenance (jockey) pump out of service, out of automatic-service, or constantly running	2
21	all other FSDs	3

**Note:** Failure to meet NFPA requirements may qualify for RAC vs FSD if the non-compliance is classified as a hazard. Examples include lack of emergency lighting or missing smoke detectors in sleeping quarters. Contact the safety office if questions arise.