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Civil Engineer

FIRE PREVENTION AND PROTECTION

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This instruction implements AFD 32-20, *Fire Protection*; AFI 32-2001, *The Fire Protection Operations and Fire Prevention Program*; AFOSH Std 91-501, and AFI 91-301, *Air Force Occupational and Environmental Safety, Fire Prevention and Health (AFOSH) Program*; National Fire Protection Association (NFPA) Standards as referenced in the text; and Military Handbook 1008C, *Fire Protection for Facilities Engineering, Design, and Construction*. NFPA Stds and Military Handbook 1008C are available for reference in the CEF, 51st Civil Engineer Squadron (51 CES/CEF). This instruction provides guidance for implementing and maintaining a sound fire prevention program and establishes responsibilities, procedures, and practices for effective control and elimination of fire hazards. It applies to all military personnel, their family members, civilian personnel (American and local national), tenants, contractors, and concessionaires that reside or work on Osan Air Base.

SUMMARY OF REVISIONS

This revision refers to the Air Force-adopted NFPA consensus standards throughout the text. It incorporates changes from military handbook 1008C and Applicable AFOSH Standards.

1. General Information:

1.1. Authority Having Jurisdiction (AHJ):

1.1.1. The Wing Commander (51 FW/CC) is designated the AHJ. The Fire marshal (51 CES/CC) serves as staff advisor to the Wing Commander, on fire protection matters. The fire marshal is authorized to halt or abate any operations or processes considered to be a fire or explosive hazard. In the absence of the 51 CES/CC, the Mission Support Group Commander serves as fire marshal.

1.1.2. The installation Fire Chief (51 CES/CEF) is responsible to the fire marshal for the management and operation of the fire protection program. The Fire Chief is responsible for the administration of this instruction.

1.2. Responsibilities Assigned:

1.2.1. Commanders are responsible for fire prevention within each activity or facility under their jurisdiction. They must:

1.2.1.1. Ensure each person receives a fire prevention orientation within 30 days after arriving on base. The organization documents this training.

1.2.1.2. Ensure fire prevention training is accomplished per AFOSH Std 91-501 within the organization on a regular basis.

1.2.1.3. Ensure building managers are assigned and they receive familiarization training on building fire protection systems, good fire prevention practices, and inspection procedures.

1.2.2. Building managers and supervisors are responsible to the commander for the fire safe condition of each building under their control. These duties include, but are not limited, to the following:

1.2.2.1. Attend the building managers training class provided by the 51 CES Production Control Center (51 CES/CEOEW).

1.2.2.2. Perform daily inspections of their area of responsibility to ensure first-aid fire fighting appliances, fire protection systems, and fire safety features are in proper condition and operation. (51 FWI 32-1001).

1.2.2.3. Accompany the fire inspector or designate an alternate during scheduled visits and take prompt corrective actions on all noted fire and life safety hazards or deficiencies. Enter fire hazards, which cannot be corrected within 30 days, into the hazard abatement program per AFI 91-301.

1.2.2.4. Provide familiarization training to all personnel within their area of responsibility on fire reporting procedures and locations and operation of first-aid fire fighting appliances.

1.2.2.5. Affix Emergency 911, Telephone Labels, to each telephone instrument. This decal can be obtained from the Fire Protection Flight (CEF) by calling 784-4710 or coming to building 671.

1.2.2.6. Enforce all provisions of this instruction and report any unsafe fire conditions beyond your control to the commander and the Fire Protection Flight.

1.3. **Fire Prevention Program Objectives.** The objectives of the fire prevention program are to prevent loss of life and property to fires and prevent interruption of the 51 FW mission.

1.4. **Korean Translation.** This instruction is available in a Hangul (Korean) translation to provide understanding for Korean nationals. Copies may be obtained from CEF by calling 784-4710 or coming to building 671.

1.5. **Fire Reporting Procedures.** Fire detection systems are installed in facilities to notify facility occupants and the fire department. Because of the limitations of these systems occupants should use the telephone as the primary means of reporting fire emergencies by dialing 911.

1.5.1. All known fires will be reported to the fire department regardless of size or type. Additionally, any condition that could result in a fire or create a hazardous situation must be reported immediately.

1.5.2. The “**SPEED**” system must be used during emergencies. “**SPEED**” utilizes the following sequence of actions:

- **S--Sound the Alarm.** Activate the fire alarm system or alert people within the facility or area.
- **P--Phone the Fire Department.** Dial 911 on base (661-9111 from off-base 031-661-9111) to reach base fire department and provide the following information: Location of the fire, building number, and your name and grade and phone number. Remain on the telephone until told to hang up. Make the phone call from a fire safe area.
- **E--Ensure Evacuation.** Alert all personnel and ensure the building is evacuated; close all doors to offices or rooms as they are exited. Evacuated personnel should assemble at a designated assembly point to be accounted for.
- **E--Extinguish if Possible.** For small fires, additional personnel in the area should be directed to use first-aid fire fighting appliances to control the fire until the fire department arrives. If there is doubt about the capability to control the fire with available resources, do not attempt to fight the fire, close the door, and exit the area.
- **D--Direct the Fire Department.** Upon arrival of the fire department, direct them to the fire.

1.6. **False Alarms and Tampering With Fire Safety Equipment.** Transmitting a false fire alarm, either by voice or installed fire detection systems, is punishable under Article 92, UCMJ. No person shall render any portable or fixed fire extinguishing system or device or any fire warning system inoperative or inaccessible. Violations are punishable under Article 92, UCMJ. Exception: As necessary during emergencies, maintenance, drills, prescribed testing, alterations, or renovations.

1.7. **Fire Evacuation Plans.** Fire evacuation plans will be placed on walls and in individual rooms in the following facilities: Child Development Centers, Billeting, dormitories, and family day care homes. Building managers are responsible for providing occupants with an understanding of evacuation procedures, stressing two means of egress.

1.8. **Public Education Available.** Fire safety training is available to any individual, group, or organization. Training may be obtained by contacting the Fire Prevention section at 784-4834.

1.9. **Base Parking and Traffic:**

1.9.1. Parking is not allowed in fire lanes; fire lanes must be free of obstructions at all time. Should it become necessary to use the fire lane for vehicle loading or unloading, the operator must remain with the vehicle. Emergency vehicle access will be maintained during all exercises. Barricades, wire, sand bags, etc. will not prevent fire department access to buildings in case of real world emergencies.

1.9.2. Vehicles parked next to street curbs must remain at least 15 feet from a fire hydrant.

1.9.3. Motor vehicles (cars, trucks, motorcycles, mopeds, forklifts, etc.) will not be parked inside buildings which have not been designated for such purposes. Any deviation must be approved in writing by CEF.

1.9.4. Streets will not be barricaded or otherwise obstructed without prior notification of CEF.

1.10. **Fire Symbols and Placards:**

1.10.1. Facilities that require the storage of mission essential munitions must request an explosive facility license per AFMAN 91-201, paragraph 2.35. EXCEPTION: Facilities storing less than

1,000 rounds of small arms ammunitions do not require an explosive facility license. Fire symbols for explosives and "Apply No Water" placards must be posted inside the buildings at the entry to the storage location. They may be posted on the exterior of buildings per AFMAN 91-201, Explosives Safety Standards.

1.10.2. Hazardous material storage areas must have hazardous material placards posted on the exterior of buildings near the storage location. NFPA 704, Identification of the Fire Hazards of Materials, and AFJMAN 23-210, Joint Service Manual (JSM) for Storage and Materials Handling, provide guidance for posting 704M hazardous material placards.

1.11. Managers of Public Assembly Facilities. Managers of places of public assembly are responsible for the overall fire prevention and life safety program within their facilities. They must:

1.11.1. Maintain a system to certify employees in fire prevention and life safety responsibilities within their work environment. It must include:

1.11.1.1. Quarterly fire drills (no building evacuation).

1.11.1.2. Fire safety training of newly hired employees within 30 days of starting to work.

1.11.1.3. Quarterly employee briefings on fire reporting procedures, location, and use of first-aid firefighting appliances, housekeeping practices, evacuation of patrons (to include handicapped), fire exits, and escapes. Adequacy of training should be measured by use of an exam (verbal or written).

1.11.2. Maintain a fire protection certification folder, binder book, or file that includes, as a minimum, a copy of this instruction, fire hazard reports, certification training documentation, a quarterly fire drill log, a record of deep fat fryer test dates, a record of hood and duct cleaning dates, and a daily closing inspection log.

1.11.3. Conduct or have the assistant manager conduct a closing inspection to ensure the facility is in a fire safe condition. This inspection cannot be delegated to janitorial personnel. A record of this inspection will be placed in the daily closing inspection log.

1.11.4. Notify the Fire Department's CEFP at 784-4834 prior to any major social event when temporary decorations, large attendance, or unusual arrangements are involved. CEFP will provide guidance to ensure appropriate fire safety measures are taken.

1.11.5. Maintain facility occupancy load information in the manager's office.

1.11.6. Ensure exit doors are unlocked and panic hardware is operational when facilities are occupied.

1.12. Services Division and Army and Air Force Exchange Service (AAFES). Concessionaires. The Services Supervisor and the General Manager, AAFES Osan, will appoint a supervisor to ensure all contracted projects and concessionaires comply with this instruction.

1.13. Fire Safety Assessments: The Fire Department's CEFP conducts fire prevention visits to all base facilities. The objective is to evaluate each organization's fire prevention program.

1.13.1. Fire Safety Deficiency (FSD) for hazards that contribute to a fire potential or risk, are assigned and managed per AFI 91-301.

1.14. Fire Extinguishers. The base standard for an extinguisher at Osan is the 10 pound multi-purpose dry chemical type. Commanders purchase approved fire extinguishers for their buildings, facili-

ties, and vehicles. Building managers or operators inspect the extinguishers for serviceability monthly. Organizational responsibilities for fire extinguishers are contained in AFOSH Std 91-501. Current National Stock Numbers (NSN) for portable fire extinguisher purchases can be obtained by calling the Fire Prevention section at 784-4834. Purchase of port fire extinguishers will be through the base supply system, as the use of Korean fire extinguishers is not permitted.

1.14.1. CEFP personnel are available to assist commanders by providing academic and practical training on hand-held and flightline wheeled fire extinguishers (fire bottle). Please call 784-4834 for information.

1.14.2. Using organizations that find an unserviceable flightline wheeled fire extinguisher or portable hand-held extinguishers will deliver it to the base CEF, bldg. 671 for exchange/repair.

1.14.3. Hand-held fire extinguishers will not be moved from their designated location except to extinguish a fire. Fire extinguishers will not be used as doorstops.

1.14.4. Because of the ozone-depleting characteristics of Halon 1211, flightline wheeled fire extinguishers will not be discharged for any reason except to extinguish fires. Any use of Halon fire extinguishers (accidental or intentional) must be reported to the fire department for environmental reporting requirements.

1.14.5. A minimum clearance of 18 inches will be maintained on each side of all portable fire extinguishers.

1.15. **Permits and Approvals.** The fire department issues permits and approvals for all open fires (including classified materials burning), welding, brazing, tar kettles, or other hot work on Osan. Permits issued will continue until revoked or for the period of time designated on the permit. Call 784-4710 for information.

1.16. **Work Request or Self-Help Projects.** AF Forms 332, Base Civil Engineer Work Request, must be coordinated with CEFP. AF Forms 332 for major renovation projects should have drawings attached, showing all details of the work involved, material list, and any information concerning fire safety. AF Form 332s arriving to the Civil Engineer for self-help work without CEF coordination will not be assigned a work order number.

1.16.1. Technical Design Reviews. CEFP will review and coordinate on all documents and shop drawings for new construction, renovations, and modifications to include SABER, AAFES, Defense Commissary Agency, RED HORSE, and Services Division projects.

1.16.2. CEFP will review all AF Forms 332, DD Forms 1391 (Military Construction Project Data), plans, specifications, and project books for technical adequacy of fire protection and life safety features.

1.16.3. CEFP functions as the civil engineer's fire safety technician. We request a minimum of two duty days for review of each project. Additional time may be required based on staffing and complexity of project.

1.17. **Security Provisions.** Areas having restricted access because of security considerations are recognized. In such cases a security/fire protection plan will be developed and coordinated with the Fire Chief.

2. Occupancy Requirements:

2.1. **Public Assembly Occupancies.** These occupancies include, but are not limited to, all buildings or portions of buildings used for gathering together 50 or more persons for such purposes as deliberations, worship, entertainment, eating, drinking, amusement, or awaiting transportation.

2.1.1. General information for fire and life safety requirements can be found in AFOSH Std 91-501 and NFPA 101, Life Safety Code.

2.2. **Educational Occupancies.** These occupancies include all buildings or portions of buildings used for educational purposes kindergarten through the 12th grade that are occupied by 6 or more persons for 4 or more hours per day or more than 12 hours per week.

2.2.1. General information for fire and life safety requirements can be found in AFOSH Std 91-501 and Department of Defense Dependents School (DoDDS) standards.

2.3. **Health Care Occupancies.** Health care occupancies include hospitals and those facilities where limited medical treatment and care is provided.

2.3.1. General information for fire and life safety requirements can be found in AFOSH Std 91-501 and NFPA 99, Health Care Facilities Code.

2.3.2. Fire drills in health care occupancies will include the transmission of a fire alarm signal to the Fire Alarm Communication Center. Drills will be conducted quarterly for each operational shift.

2.4. **Residential Occupancies.** These type occupancies provide sleeping accommodations such as hotels, apartments, dormitories, billeting, and multiple family dwellings.

2.4.1. General information for fire and life safety requirements can be found in AFOSH Std 91-501 and Base Family Housing Brochure, Osan Air Base, Korea.

2.4.2. All billeting employees will receive training each quarter in the duties they are to perform during a fire emergency. Additionally, a drill will be conducted each quarter to assess the employee's capability to perform these duties.

2.4.3. A floor diagram reflecting the actual floor arrangement, exit locations, and room identification shall be posted in a location and manner acceptable to the authority having jurisdiction on, or immediately adjacent to, every guest room door in billeting, and in every resident room in dormitories.

2.4.4. Dormitory managers will be responsible for planning and conducting semiannual fire drills using the fire alarm systems for dormitories under their control. Prior to conducting the drill, coordinate with CEF. The emphasis for dormitory drills is an orderly evacuation.

2.4.5. The following general fire safety rules apply in billeting, VOQ, and dormitories:

2.4.5.1. Draperies, curtains, and similar loosely hanging furnishings and decorations must be flame resistant.

2.4.5.2. Cooking appliances are prohibited except in approved kitchens. The use of some small cooking devices such as microwaves, blenders, hot air popcorn makers and UL approved coffee makers placed on non-combustible surfaces are authorized in individual rooms. Further information concerning cooking devices in dormitories contact CEF, at 784-4710.

2.4.5.3. Outdoor cooking equipment, barbecue grills, etc. will not be used or stored inside dor-

mitories or billeting. This includes outside exit stairwell landings. Damp charcoal will spontaneously ignite and burn. Do not discard in garbage cans inside or near buildings. Will not be used within 25 ft of facility.

2.4.5.4. Portable electric heaters will not be used in dormitories or billeting rooms except by special approval of CEF.

2.4.5.5. The burning of candles and incense in dormitories and billeting facilities is prohibited. Use of candles and incense may affect the operation of smoke detectors.

2.4.5.6. Extension cords when approved for temporary use must not be placed under carpets or rugs.

2.4.5.7. Dormitory managers are responsible to monitor clothes dryers and eliminate lint accumulation in and around the machines. Lint filters shall be cleaned after each drying operation.

2.4.5.8. Motorcycles, mopeds, etc. with or without oil or gas, will not be kept in dormitory or billeting facilities.

2.4.5.9. Explosive materials or flammable gases will not be stored in dormitory or billeting facilities.

2.4.5.10. Personal property will not be stored in exit corridors, stairwells, or lobbies.

2.4.6. Military Family Housing:

2.4.6.1. Sponsors assigned to military family housing will attend a fire prevention orientation briefing within 45 days of occupancy.

2.4.6.2. Sponsors will ensure family members are familiar with fire reporting and fire evacuation procedures and comply with the requirements of 51 FWP 32-6002, Military Family Housing. Sponsors are also encouraged to consider rental fire insurance. Additional useful information is available from CEF by calling 784-4710.

2.5. Mercantile Occupancies. These type occupancies include stores, markets, or structures for the display and sale of merchandise.

2.5.1. General information on fire and life safety requirements can be found in AFOSH Std 91-66, *General Industrial Operations*; AFOSH Std 91-501; NFPA 231, *General Storage Code*; and EOP 17-1, *AAFES Safety Procedures Manual*.

2.6. Business Occupancies. These type occupancies include facilities used for the transaction of business such as keeping of accounts and records and similar purposes.

2.6.1. General information concerning fire and life safety requirements can be found in AFOSH Std 91-66, AFOSH 91-501, and NFPA 101.

2.7. Industrial Occupancies. These type occupancies include facilities which manufacture products and conduct operations devoted to processing, assembling, mixing, packaging, finishing or decorating, and repairing.

2.7.1. General information on fire and life safety requirements can be found in AFOSH Std 91-66, AFOSH Std 91-501, and *Industrial Fire Prevention Handbook*. The latter publication is available for reference at CEF.

2.7.2. Occupants will not tamper with or modify installed fire protection and detection systems.

2.8. **Storage Occupancies.** These type occupancies include all buildings or structures used primarily for the storage or sheltering of goods, merchandise, products, vehicles, or animals.

2.8.1. General information on fire and life safety requirements can be found in AFJMAN 23-210; AFOSH Std 91-66; AFOSH Std 91-501; and NFPA 231.

2.9. **Special Structures and High-Rise Buildings.** These type occupancies include towers, under-ground structures, windowless structures, and open structures.

2.9.1. General information concerning fire and life safety requirements can be found in AFOSH Std 91-501 and NFPA 101.

3. Means of Egress:

3.1. **Means of Egress.** Means of egress is a continuous 36-inch wide unobstructed way of exit travel from any point in a building to a public way. Means of egress must be free of any obstruction that would prevent its use. Do not lock block or otherwise disable emergency exits from the inside when building is occupied.

3.2. **Aisles and Exits.** Aisles and exits must comply with NFPA 101.

3.2.1. Building managers will take immediate action to have exit doors repaired should they become inoperable.

3.3. **Marking of Means of Egress:**

3.3.1. Exits must be marked by an approved sign readily visible from any direction or exit access. EXCEPTION: Main exterior exit doors that obviously and clearly are identifiable as exits. Light Emitting Diode (LED) exit lights are preferred.

3.4. **Locks, Latches, and Alarm Devices .** Exit doors must be arranged to be readily opened from the egress side whenever the building is occupied. Locks, if provided, must not require the use of a key, tool, special knowledge, or effort for operation from the inside of the building.

3.4.1. No lock, padlock, hasp, bar, chain, or other device, or combination of devices will be installed or maintained on any door with panic hardware.

3.4.2. When persons exiting from buildings must be monitored due to pilferage problems, panic hardware may incorporate an alarm device with a sign that reads "FOR EMERGENCY EXIT ONLY." Operation of the release bar will activate an alarm signal near the door.

4. Interior Finish and Decorations:

4.1. **Temporary Decorations and Furnishings.** Decorations must be of the fire-resistive type or conform to the requirements of NFPA 703. Decorations for a one-time use may be exempted from this requirement upon recommendation from CEF.

4.1.1. Contact CEF at 784-4710, to make arrangements for a fire inspection of all major decorative scenes.

4.1.2. Open flames, including candles and incense, will not be allowed near combustible items.

4.1.3. Combustible materials will be kept away from lighting systems that produce extreme heat.

4.2. **Christmas Trees.** Natural Christmas trees are harvested at the same time. Waiting to purchase a Christmas tree does not assure freshness. Buy your tree early and place the cut end in a pale of water or damp sand until ready for decoration. Keep all trees away from heat. Trees must be placed in an appropriate container and watered daily. No decorative lighting on the tree will be left on while the facility is unattended.

4.2.1. Only noncombustible Christmas trees and decorations are authorized for installation in public assembly occupancies and individual sleeping rooms.

4.2.2. Natural Christmas trees may be used inside accompanied housing provided the following conditions are met:

4.2.3. The tree is kept clear of exits and other combustible materials.

4.2.4. Christmas tree lights and wiring have a UL or other approved testing agency label. Defective or deteriorating wiring will not be used.

4.2.5. Outdoor lights and wiring are approved for outdoor use by the manufacturer and are weatherproof.

4.2.6. When Christmas trees, lighting, or decorations are determined to present a fire hazard, they will immediately be removed from use.

5. Installed Fire Detection/Suppression Systems:

5.1. **Fire Detection Systems.** Requirements for these systems are found in NFPA 101; NFPA 72, National Fire Alarm Code, Military Handbook 1008C; AFOSH Std 91-501, and UFC 3-600-02.

5.1.1. Fire detection system inspection, testing and maintenance will be conducted by the appropriate 51 CES shop. Task will be accomplished per UFC 3-600-02 and NFPA 72.

5.1.2. Building managers and occupants who tamper with, disconnect, disable, or obstruct fire detection devices and alarm equipment may be punished under Article 92, UCMJ. Compliance with the following provisions will help ensure fire detection systems function as designed and provide early detection of a fire:

5.1.3. Items will not be stored close to fire or smoke detectors.

5.1.4. Only CEF personnel and 51 CES technicians are authorized to open fire alarm panels for silencing the bells or resetting the system.

5.1.5. Cigarette smoke, cooking smoke, aerosol spray, steam, and heat can activate smoke detectors. Proper ventilation should be made to prevent inadvertent activation of these devices.

5.1.6. Rapid rise in temperature can activate heat detectors. Efforts should be made to control the heat or cooling changes in areas where heat detectors are installed.

5.1.7. Building managers must train occupants annually on proper use of fire detection systems.

5.2. **Fire Sprinkler Systems.** Requirements for these systems are found in NFPA 101; Life Safety Code; NFPA 1, Fire Prevention Code; NFPA 13, Standard for the Installation of Sprinkler Systems; NFPA 13A, Recommended Practice for the Inspection, Testing and Maintenance of Sprinkler Systems; Military Handbook 1008C; AFOSH Std 91-501; NFPA 25, Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems; and UFC 3-600-02.

5.2.1. Fire suppression system inspection and testing are conducted by contract. CEF fire prevention section inspectors are responsible for closely monitoring the work of the contractors. Maintenance actions will be conducted by the appropriate CES zone shop. When repair work is beyond the scope of 51 CES, repair work will be initiated through AF Form 9, **Request for Purchase**.

5.2.2. Building managers and occupants will not tamper with or obstruct sprinkler system components. Compliance with the following provisions will help ensure fire suppression systems function as designed and extinguish fires in their early stages:

5.2.3. Do not paint over any sprinkler system component without approval from CEF.

5.2.4. Do not store items within 18 inches from the sprinkler head.

5.2.5. Do not park vehicles or store items within 15 feet or access to a fire department connection.

5.2.6. Welding operations will not be conducted in sprinkled facilities when the system is out of service, unless such action is conducted to restore the system to operation.

5.2.7. Building managers must train occupants annually on how their fire suppression system operates.

5.3. **Inoperative Systems.** Emergency priority will be assigned for returning inoperative fire detection and suppression systems to service. With approval of the Base Fire Chief, systems may be returned to limited service until complete repairs can be accomplished. 51 CES technicians/contractor will notify building managers and the Fire Alarm Communication Center of any system outage and provide an estimated date it will be returned to service.

6. General Fire Safety Requirements Fundamental Requirements:

6.1. New and existing building and structures will be in compliance with this instruction and NFPA 101.

6.2. Anyone who deliberately or through negligence, sets fire to, or causes the burning of any combustible material in such a manner as to endanger the safety of any person or property will be in violation of this instruction and the Uniform Code of Military Justice.

6.3. Persons will leave any overcrowded premises when told to do so by a manager, representative from CEF, or Security Forces. Overcrowding is when the occupant load exceeds the exit capacity.

6.4. When a fire alarm is activated, all personnel, except those assigned to fire fighting duties, must evacuate the building. In buildings not equipped with a fire alarm system, the person discovering a fire will make every effort to ensure all personnel are alerted and the building is evacuated. If the building has not been totally evacuated, notify CEF personnel upon their arrival.

6.5. **Electrical Fire Safety.** All electrical appliances, fixtures, or wiring will be installed and maintained per NFPA 70, *National Electrical Code*, and AFOSH Std 91-66. Only 51 CES electricians or licensed electrical contractors may alter or repair electrical wiring and outlets.

6.5.1. All switches, receptacles, junction boxes, and control panels will have suitable cover plates or panel doors.

6.5.2. Deteriorated wiring, frayed cords, and cracked and broken plugs are not authorized for use.

6.5.3. All unnecessary electrical equipment and appliances will be unplugged prior to leaving the work area or home.

6.5.4. A clearance of at least 18 inches will be maintained between electrical light fixtures and combustible materials.

6.5.5. Multi-receptacle bars (American or Korean made) used for computers and other appliances will be fused and have a UL, Korea Industrial Standard (KIS), or other approved testing agency label.

6.5.6. An extension cord or flexible wiring is prohibited from use when:

6.5.6.1. It is used as a substitute for fixed wiring of structures.

6.5.6.2. It is run through holes in walls, ceilings, or floors.

6.5.6.3. It is run through doorways, windows, or similar openings.

6.5.6.4. It is attached to building surfaces by nails, staples, or glue; wrapped around beams or columns; or hanging by hooks.

6.5.6.5. It is concealed under carpets.

6.5.6.6. It has been spliced.

6.5.6.7. Cord size is smaller than the cord of the item being used.

6.6. Smoking and Disposal of Smoking Materials. Smoking in Air Force facilities is prohibited in most cases. (AFI 40-102, Tobacco Use in the Air Force)

6.6.1. Smoking, striking matches, or operating lighters is prohibited within 50 feet of flammable liquids, fuel vehicles, and aircraft, and 100 feet of munitions storage areas and hydrant fueling systems.

6.6.2. Butt cans with self-closing lids and ashtrays with holders in the middle of the dish should be provided in all areas where smoking is allowed.

6.6.3. Ashtrays will be emptied into butt cans and not into waste baskets. Do not put trash into butt cans. Prior to disposal, ensure cigarette butts are soaked with water and placed into a sealed plastic bag.

6.6.4. All areas will be considered "NO SMOKING" areas unless a "DESIGNATED SMOKING AREA" sign is posted.

6.7. Open Outdoor Fires, Incinerators, and Barbecues:

6.7.1. Open fires (e.g., bond fires, camp fires, controlled burning) are not permitted unless approved by the 51 CES/CEF Base Fire Chief. Approved open fires will be located no closer than 25 feet from any structure and constantly attended by a competent person until they are totally extinguished. Fire extinguishers, garden hoses, buckets of water, or fire trucks must be available at the burn site.

6.7.2. Incinerators must meet environmental compliance laws of the United States and Korea. Commercial incinerators will be equipped with spark arrestors and maintained in a good state of repair. (NFPA 1, paragraph 3-4.9).

6.7.3. Barbecue grills will not be used within 25 feet of a building or 50 feet from an aircraft or flammable storage. EXCEPTION: Apartment balconies may be used for barbecue.

6.7.3.1. Use only a labeled starter fluid to start fires in the grill.

6.7.3.2. When using propane fueled barbecues, ensure the manufacturer's instructions are followed and adhered to. Propane cylinders, fuel lines, and regulators should be inspected annually.

6.7.3.3. For disposal instructions for propane cylinders, contact the 51 CES Environmental Flight (51 CES/ CEV). Do not throw them away or place them next to the street for trash pickup.

6.8. Mechanical, Boiler, Generator, and Electrical Rooms. Mechanical, boiler, generator, and electrical rooms will not be used for storage purposes. Mechanical, boiler, generator, and electrical rooms are under restricted access to qualified, trained personnel. 51 FWP 32-1001.

6.9. Commercial Cooking Equipment. Commercial cooking equipment will be maintained per AFOSH Std 91-501, NFPA 96, and building managers must enforce the following procedures:

6.9.1. Deep fat fryers will have a primary thermostat of 400 degrees Fahrenheit and a secondary thermostat to limit temperature to a maximum of 475 degrees Fahrenheit. Thermostats will be tested annually and after any repair. Documentation of the last date tested must be affixed to the unit.

6.10. Fire Doors and Fire Windows.

6.10.1. Doors, shutters, and windows must be operable at all times. They will be kept closed, latched, or arranged for automatic closing.

6.11. Fire Hydrants . Fire hydrants are for use by CEF and will not be used indiscriminately for other purposes. CEF is the approval authority for use of fire hydrants. When a fire hydrant use is terminated, it will be shut off and all caps replaced.

6.11.1. Fire hydrants will not be obstructed with fences, bushes, or other barriers.

6.12. Housekeeping. Good housekeeping relative to fire safety, is the responsibility of commanders, supervisors, building managers, and military housing sponsors.

6.12.1. Greasy and oily rags, paint rags, and polishing cloths must be kept in self-closing metal containers when not in use.

6.12.2. Trash must be taken from shops, buildings, and work areas daily, unless custodial contract prohibits it.

6.12.3. Plastic, polyethylene, and combustible trash cans will not be used in areas where smoking is permitted.

6.12.4. Mops and brooms must be stored on outside racks or in utility rooms designed for that purpose. Ensure mop heads are cleaned after used on oil or chemical spills use to reduce the possibility of spontaneous combustion.

6.12.5. Extra boxes, papers, furniture, and equipment will be kept in rooms designed for storage, not in mechanical or boiler rooms.

7. Special Processes and Material Handling:

7.1. Flammable and Combustible Liquids. Flammable and combustible liquids, including spray cans, will be handled and stored per AFOSH Std 91-501 and AFJMAN 23-210. *Material Safety Data Sheets* should be available on products used in the work center.

7.1.1. Mission-essential or daily-use requirements of flammable and combustible liquids or sprays that do not exceed 5 gallons may be used in facilities for less than 10 days without special storage. Facilities that use amounts exceeding 5 gallons must store the liquids and sprays in Occupational Safety and Health Administration (OSHA)-approved metal cabinets. EXCEPTION: Incidental storage of flammable liquids in metal lockers marked "FLAMMABLE--KEEP FIRE AWAY" is permitted for industrial occupancies per AFOSH Std 91-501. Storage amounts cannot exceed 11 gallons.

7.2. **Fireworks and Model Rocketry.** Fireworks intended for outdoor display must comply with the requirements of NFPA 1123, Outdoor Display of Fireworks. Model rocketry must comply with NFPA 1122, Code for Model Rocketry.

7.2.1. Fireworks are prohibited on Osan Air Base. EXCEPTION: Authorized training devices and public displays of fireworks.

7.3. **Heating Appliances.** The installation of fixed or portable fuel fired heating systems will comply with NFPA 31, Installation of Oil-Burning Equipment. Portable electrical heaters must comply with NFPA 1, paragraph 32-3.

7.3.1. Use of portable kerosene space heaters is prohibited in all Osan Air Base facilities.

EXCEPTION: Heaters used in tent operations for mobility training that is designed for such purposes.

7.3.2. Portable electric space heaters are permitted. However, they must be equipped to shut off electric power to the unit when tilted or turned over.

7.3.3. Space heaters will be kept at least 36 inches away from combustible materials such as papers, furniture, or curtains.

7.3.4. The AHJ (paragraph 1.1.) is authorized to prohibit the use of portable heaters in facilities or situations in which such use or operation would present an undue danger to life or property.

7.4. **Spray Application Using Flammable and Combustible Materials.** Operations involving the spray application of flammable and combustible materials will comply with AFOSH Std 91-17, *Interior Spray Finishing*, and NFPA 33, *Standard for Spray Application Using Flammable and Combustible Materials*.

7.4.1. Spray painting of aircraft inside hangars is prohibited unless approval is granted by the Fire Department, 51 FW/SE, and 51 CES/CEV, 51 AMDS/SGPB.

7.5. **Welding, Cutting, and Use of Torches.** Welding, cutting, and open flame operations will comply with AFOSH Std 91-5, *Welding, Cutting and Brazing*, and NFPA 51B, *Standard for Fire Prevention in Use of Cutting and Welding Processes*. The leading cause of fire in the Air Force is due to by products or heat from welding operations.

7.5.1. All welding or torch operations will be performed by qualified personnel and, if possible, in booths or rooms constructed for that purpose.

7.5.2. When welding or torch operations are to be accomplished outside authorized welding booths or rooms, CEF will be contacted to inspect the work site and equipment. If the operation is safe, AF Form 592, **USAF Welding, Cutting and Brazing Permit**, will be issued per AFOSH Std 127-5.

7.5.3. Welding shop workers will be scheduled for annual fire safety training with CEF.

7.5.4. Personnel performing welding or cutting operations will ensure the appropriate fire extinguisher is readily available prior to beginning work.

7.5.5. Prior to any welding or cutting on piping, tanks, or containers that contain or contained flammable liquids, they will be thoroughly purged and vented. Detection equipment will be used to sample for explosive mixtures. The supervisor of the operation will contact 51 FW/SE, 51 CES/CEF, and 51 CES/CEV to inspect the work site.

7.6. **Explosive Materials.** The manufacture, transportation, storage, sale, and use of explosive materials will comply with AFMAN 91-201, *Explosives Safety Standards*, and NFPA 495, *Explosive Materials Code*, and 498, *Standard for Explosives Motor Vehicle Terminals*. Notify CEF at 784-4710 prior to any transportation and movement of explosives and provide them with the departure point and time, destination, and anticipated arrival time.

7.7. **Refueling.** Operations involving aviation fuels, ground equipment fuels, aircraft hydrant equipment, and ground fuels dispensing systems must comply and T.O. 00-125-172.

7.7.1. Fuel spills, regardless of size, will be immediately reported to CEF in the most expedient manner possible. Personnel responsible for the fuel spill must have the equipment and training to take cleanup actions. Corrective action must be taken to prevent recurrence of spills.

7.8. **Battery Shop Operations.** Battery shops will be operated per AFOSH Std 91-66, AFOSH Std 161-2, and NFPA 70.

7.8.1. No more than two batteries will be charged at any one time in areas other than authorized battery shops.

7.8.2. Charging operations will not be conducted near flammable or combustible materials.

7.8.3. Charging operations will be discontinued when facilities or shops are not occupied.

7.9. **Treatment of Floors.** Sanding, varnishing, and polishing of large floor areas such as gyms and bowling lanes create a serious explosive hazard.

7.9.1. CEF will be contacted in advance before any floor treatment begins.

7.9.2. All unnecessary electrical exhaust fans, lights, motors, and pilot lights will be shut off prior to any treatment of floors.

7.9.3. All electrical equipment used during floor treatment will be in good repair and conform to NFPA 70. Buffers must be equipped with spark arrestors. No open-flame devices are authorized. Doors and windows will be opened for ventilation.

7.10. **Construction Fire Safety.** Contractors and all base personnel performing construction or self-help renovations must conduct their activities per Federal Acquisition Regulations (FAR), AFOSH Std 91-66, and NFPA 241, Std for Safeguarding Construction, Alteration, and Demolition Operations.

7.10.1. Contractor supervisors and base contract monitors are responsible for fire prevention at construction sites.

7.10.2. The AHJ (paragraph 1.1.) is authorized to stop contractor work only if a severe fire or life safety hazard exists.

7.10.3. Contractors will not place dumpster trash closer than 15 feet to any building or fire hydrant.

7.10.4. Contractors will not store flammable liquids inside buildings, next to buildings, or near exit ways. Limit inside quantities to one-day supply only.

7.10.5. When welding, cutting, soldering, or use of open-flame devices is required, contractors will notify the contract monitor, who will initiate action to obtain a site inspection and issue of an AF Form 592 prior to work beginning.

7.10.6. Access for fire fighting vehicles must be maintained at all construction sites. Requirements of NFPA 241 will be adhered to.

7.10.7. Use of asphalt kettles must comply with NFPA 241. Prior to any kettle operation, approval must be obtained from the FPF. Kettle operations must be supervised at all times and the appropriate fire extinguisher will be readily available. Mop heads and associated debris from work areas will be removed from the site on a daily basis.

WILLIAM L. HOLLAND, Brigadier General, USAF
Commander

Attachment 1

AIRCRAFT WELDING OPERATION CHECKLIST

Aircraft Type:

Tail No.:

Part to be worked on:

SPECIFY IN DETAIL, E.G., "INLET VANES ON NO. 3 ENGINE"

Location of work, (Spot/Hanger #):

Name of Mechanic:

Name of Fire Watch:

Welding Supervisor:

Date of Work:

Aircraft Welding Fire Safety Checklist

Safeguarding Fuel Systems	Yes	No
Fuel system closed on aircraft being welding		
Portions of fuel system on adjacent aircraft within 100 ft (30m) from welding point closed		
Fuel tank access plates in place		
Fuel tank fill and vent openings closed, covered, or plugged		
Fuel lines, valves, manifolds in place, secured, or capped		
Streamers attached to covered fuel vents		
Pressure removed from fuel systems		
<i>NOTE: Prior to the start of welding and at least every 15 minutes during the welding operation, a qualified person shall check with a combustible gas analyzer to assure that flammable vapors do not reach 20% of the lower explosive limit</i>		
Area including hanger floor drains checked within combustible gas analyzer Ramp area work location checked for sources of flammable/combustible vapors		
All other work suspended within 20 feet (6 m) of welding point		
Rope off or segregate the welding operation by physical barrier		
Area placarded: "Welding Operation in Progress"		
Adjacent workers notified prior to start of operation		
Welding supervisor has thoroughly briefed the senior flightline supervisor on the planned welding operation		
Housekeeping		
Area cleaned where weld is to be made		
Combustible materials removed or covered within 35 feet		

Area cleared of any oil or fuel spills		
Drains checked in area for oil contamination		
Welding Equipment		
Generators 5 feet (1.5 m) clear of aircraft engine or fuel tanks		
Electrical equipment 18 inches (375 mm) minimum off floor		
Ground leads clamped to grounding plug		
Gas cylinder(s) securely fastened to prevent tipping		
Regulators and gauges working properly		
Mobility of Aircraft		
Aircraft parking brakes off and wheels chocked		
Tug available – tow bar attached		
Hanger doors open		
Path cleared to permit towing aircraft outside		
Qualified tug operator available and alerted		
Fire Protection		
Handheld portable fire extinguisher (20-B rating minimum) immediately adjacent		
Wheeled flightline fire extinguisher (80-B rating minimum) within 100 feet (30 m)		
Automatic sprinkler system operable		
Fire watch assigned, on duty		

Stop welding operation immediately if hazardous condition develops. Call 911 in case of emergency.