

**BY ORDER OF THE COMMANDER  
TINKER AIR FORCE BASE**



**TINKER AIR FORCE BASE  
INSTRUCTION  
90-1701**

**18 SEPTEMBER 2019**

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***Special Management***

***FACILITY INFRASTRUCTURE  
INSTALLATION ENERGY AND WATER  
MANAGEMENT***

**COMPLIANCE WITH THIS PUBLICATION IS MANDATORY**

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This instruction implements Air Force Instruction (AFI) 90-1701, *Installation Energy and Water Management*, and establishes policies and procedures for the management of installation energy and water used by Tinker Air Force Base (TAFB). This AFI applies to all military and civilian Air Force personnel, Air Force Reserve units, and other tenant organizations, except where noted otherwise. Failure to comply with this publication is punishable as a violation of Article 92 of the Uniform Code of Military Justice. This publication applies to contractors or other persons through a contract or other legally binding agreement with the Department of the Air Force or other Department of Defense agency. Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using Air Force (AF) Form 847, *Recommendation for Change of Publication*; route AF Form 847 from the field through appropriate functional chain of command. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with (IAW) Air Force Manual (AFMAN) 33-363, *Management of Records*, and disposed of IAW the Air Force Records Information Management System (AFRIMS) Records Disposition Schedule (RDS). This publication may not be supplemented or further implemented/extended. No waivers may be granted for any part of this publication.

### **SUMMARY OF CHANGES**

This has been substantially revised and needs to be completely reviewed. The revised document is based on new Department of Defense (DoD) and AF policies; outdated requirements have

been removed and new terms have been clarified. The Tinker AFB Energy Steering Group has been renamed to Tinker AFB Energy Assurance Steering Group (EASG), to continue meeting in conjunction with quarterly Facilities Board meetings. Emphasized in the revision is the “*Air Force Energy Flight Plan 2017-2036*” requirement to reduce installation energy usage per square foot by 25% by FY25, compared to FY15. Heating and cooling temperature set points established by 72 ABW/CC in 2011 remain the same, except for reducing 78 degree peak-hour cooling temperature set points to 76 degrees (all areas serviced by refrigerated air conditioning systems will be set at 76 degrees during working hours during cooling season, for consistency throughout the organization’s work day). This instruction establishes a working-level Energy Assurance Working Group (EAWG), to consist of Facilities Board Working Group members. This instruction outlines the base space heater approval process in detail, in addition to establishing a formal waiver approval process for temperature set point adjustments, for approval by the Base Energy Manager.

**1. General Policy.** Commanders and executive officers shall promote and accomplish every reasonable action required to achieve Federal, United States Air Force (USAF), Air Force Materiel Command (AFMC), Air Force Systems Command (AFSC) and Tinker AFB energy and water conservation policies. Reasonable actions shall enhance military readiness, safety and effectiveness and reduce negative impacts on the environment. Leadership at all levels is essential to the success of Tinker AFB energy conservation efforts.

1.1. The primary focus of the Air Force energy and water management programs is to provide mission assurance through energy and water assurance.

1.2. Installation energy management includes energy use, conservation, assurance, and resilience.

1.3. Water management includes water use, conservation, and resilience.

**2. Tinker AFB Energy Assurance Steering Group Organization.** The chairperson for the Tinker AFB Energy Assurance Steering Group (Tinker EASG) is the 72 ABW/CC or 72 ABW/CV. This group will meet regularly in conjunction with the Facilities Board quarterly meetings; additional meetings may be held at the discretion of the chairperson. The group will oversee all energy and water management programs at Tinker AFB, focusing on ensuring energy and water conservation and resilience to meet mission requirements. The “*Air Force Energy Flight Plan 2017-2036*” has an overall Air Force strategic objective to reduce energy usage per square foot of 25% by FY25, compared to FY15.

2.1. The Tinker EASG shall consist of members of the Facilities Board. 72 ABW/CENPE, Base Energy Manager, will act as facilitator at Tinker EASG meetings, to be held in conjunction with quarterly Facilities Board meetings.

2.2. A working-level base Energy Assurance Working Group (EAWG), consisting of Facilities Board Working Group members, will meet a minimum of once a quarter to provide a cross-functional forum for discussing energy resiliency initiatives and issues in advance of quarterly EASG meetings that are held in conjunction with quarterly Facilities Board meetings. The Tinker AFB EAWG meetings will be chaired by the Base Energy Manager. EAWG members will also act as their respective Organization Energy Managers and shall promote energy awareness, monitor energy use within their organization, and assist the Base Energy Manager in ensuring Facility Managers are able to perform their duties in

accomplishing quarterly energy inspections and encouraging occupants to follow energy conservation procedures.

**3. Tinker Easg Roles And Responsibilities.** The Tinker EASG shall develop and validate energy plans to support or supplement DoD, Air Force, AFMC, and AFSC policies and their execution. The Tinker EASG shall be briefed as to the current status of base energy goals and objectives during quarterly meetings held in conjunction with quarterly Facilities Board meetings.

3.1. 72 ABW/CC, AIR BASE WING COMMANDER (or 72 ABW/CV). Convene and chair the Tinker EASG meeting.

3.2. 72 ABW/CENPE, BASE ENERGY MANAGER. The Energy Management Program is managed within 72 ABW/CENPE, Energy Management Section. The goal of the Energy Management Program is to identify and facilitate action on energy conservation initiatives. This effort includes tracking energy usage, working with Facility Managers to initiate energy related improvements, obtain funding for large energy conservation projects, and providing actions everyone can accomplish. The Base Energy Manager oversees the overall installation energy program and facilitates Tinker EASG meetings. The Base Energy Manager also serves and accomplishes the duties of the Installation Energy Manager as specified in AFMAN 32-1061, Providing Utilities to U.S. Air Force Installations, and AFI 90-1701, *Installation Energy and Water Management*. The Base Energy Manager oversees facility energy program awareness, sustainability, and opportunities to decrease energy and water consumption. The Base Energy Manager acts as the focal point for coordinating engineering, operations, real property, financial management, contracting and legal activities required for the management, supply, purchase, and sale of utility services.

3.3. TINKER EASG MEMBERS. Facilities Board members will also act as the representative members for the Tinker EASG and retain similar rights and privileges therein. Tinker EASG members may designate an alternate representative to attend, if needed. Members must represent their organization's energy and water concerns, be prepared to present for discussion their organization's energy initiatives and also act as a conduit to their organization on energy matters discussed at Tinker EASG meetings. Tinker EASG members will identify mission requirements with potential vulnerabilities due to a denial of energy and/or water service and promote a decrease in energy and water consumption in their respective organizations.

3.4. 72 ABW/PA, PUBLIC AFFAIRS (PA). PA will provide a public awareness program consisting of articles on energy conservation tips and progress toward base energy goals and provide other energy information to the base populace. Energy awareness month shall be in October, with the main focus being public awareness to promote a culture that supports energy efficiency in all aspects of the work environment. The goal focuses on exceeding energy conservation milestones and establishing a more efficient work force without interrupting the base mission. Tinker AFB tackles these milestones through comprehensive public awareness campaigns focused on necessary action.

3.5. FACILITIES BOARD RECORDER. The recorder will summarize the Tinker EASG meeting actions in the Facilities Board minutes and maintain and dispose of records according to Air Force Records Information Management System (AFRIMS) Records Disposition Schedule (RDS).

#### 4. General Roles And Responsibilities.

4.1. WING/GROUP/DIRECTORATE LEVEL COMMANDERS AND EQUIVALENT CIVILIAN MANAGERS/SUPERVISORS. Wing/Group/Directorate-level commanders and equivalent civilian managers/supervisors shall:

4.1.1. Validate exemptions to base policy.

4.1.2. Ensure assigned personnel follow base energy conservation goals and guidance.

4.1.3. Enforce facility energy conservation measures.

4.1.4. Ensure compliance with energy directives within individual units, including keeping building doors/windows and hangar doors closed at all times, except for minimal times in use.

4.1.5. Will appoint primary/alternate Facility Managers and/or Organizational Building Representatives as directed by TAFBI 32-9001, *Facility Management Guidelines*. Appointments of Facility Managers shall be made such that Facility Manager responsibilities shall include working within organizations to implement base energy policies and coordinate with base energy management staff.

4.2. SQUADRON/DIVISION LEVEL COMMANDERS AND EQUIVALENT CIVILIAN MANAGERS/SUPERVISORS. Validate compliance with energy policies and initiatives within their units to maximize energy conservation and minimize energy waste.

4.2.1. Shall ensure that heating and cooling systems are working properly and providing adequate climate control in their facilities, without wasting energy. Ensure each organizational Facility Manager completes the facility energy conservation checklist quarterly and that the Facility Manager contacts CE Customer Service to ensure work orders are submitted to repair discrepancies. Ensure HVAC systems are programmed to maintain the set points identified in [Paragraphs 6](#) and [7](#) and notify the Base Energy Manager when production schedules change that affect set point programming.

4.2.2. Space heaters shall not be utilized to supplement existing climate control. Facility Managers shall contact 72 ABW/CE Customer Service (734-3117) to address unsatisfactory climate control issues. On a by-exception basis, commanders and/or equivalent civilian supervisors (squadron/division or higher) may verbally contact the Base Energy Manager if a short-term emergency warrants temporary space heater usage for other than medical reasons due to a short-term heating problem.

4.2.3. On a by-exception basis, commanders and/or equivalent civilian supervisors (squadron/division or higher) will make unit level determination of use and recommend approval of personal space heaters within a facility for medical reasons, with a recommendation from a doctor in writing, and will submit a request for the use of personal space heaters for medical reasons in writing to the organization's Safety Office for coordination and then, in turn, to the Base Energy Manager, who retains ultimate Tinker AFB approval authority. Supervisors will ensure that all non-approved space heaters are removed from work areas to eliminate energy waste.

4.2.4. Space heaters coordinated on by the Organization's Safety Office and approved by the Base Energy Manager shall meet the following:

- 4.2.4.1. UL-listed, equipped with automatic shut-off device that will shut off the heater if it tips over, overheat protection device, and an automatic thermostat control.
  - 4.2.4.2. The manufacturer's information must be on hand.
  - 4.2.4.3. Verification that the circuit capacity is adequate and that Civil Engineering (CE) has been contacted to evaluate/repair the heating system must be on hand.
  - 4.2.4.4. Plugged directly into a wall outlet, not into multiple outlet strips or cubicle outlets; extension cords are not permitted.
  - 4.2.4.5. Must not be located within 20 feet of a thermostat or sensor.
  - 4.2.4.6. Must be a 36-inch minimum distance or in accordance with manufacturer's recommendations between heater and combustibles (the more restrictive of the guidance will apply), attended when in use, unplugged when not in use and at the end of day or shift.
  - 4.2.4.7. The use of space heaters in any hazardous location is prohibited.
  - 4.2.4.8. If approved by the Base Energy Manager, the waiver will be posted near each space heater being used, for the duration of the waiver period, not to exceed one year.
- 4.2.5. Commanders/Supervisors will ensure that personal refrigerators, coffee makers and microwaves are consolidated into community break areas where possible to minimize energy consumption.
- 4.2.6. Commanders/Supervisors will review procedures within a unit, along with their applicable Facility Managers, to turn off unnecessary interior and exterior lighting at the end of shift, except those required for safety and security requirements, and update procedures as needed. Units shall make all reasonable, cost effective efforts to reduce energy and water use.
- 4.3. SUPERVISORS (ALL LEVELS, INCLUDING FIRST-LINE SUPERVISORS). Will check work areas periodically to ensure lighting, appliances and other equipment are being turned off when not required to be in use. Help develop individuals to become good stewards in energy conservation. Promote the submission of good ideas to Base Energy Management via email ([72ABW.CE.Energy@us.af.mil](mailto:72ABW.CE.Energy@us.af.mil)). Implement innovations in duty section to conserve energy, brief personnel on base energy conservation policies, initiatives, results/decisions/findings of the TAFB EASG and EAWG, etc. Notify Facility Managers of deficiencies such as building lighting, HVAC, and water.
- 4.4. FACILITY MANAGERS/ORGANIZATIONAL BUILDING REPRESENTATIVES (OBRs). Will support energy conservation through cooperative effort with the organization energy manager and report wasteful facility energy use to the Base Energy Manager. Facility Managers/OBRs will complete a Facility Energy Conservation Checklist every quarter, as a minimum, and submit checklist to [72ABW.CE.Energy@us.af.mil](mailto:72ABW.CE.Energy@us.af.mil) upon completion. The Facility Energy Conservation Checklist is located at the following link: <https://org2.eis.af.mil/sites/22463/CENP/Energy/Forms/AllItems.aspx?RootFolder=%2Fsites%2F22463%2FCENP%2FEnergy%2FFacility%20Manager%20Energy%20Program%20Guidance&FolderCTID=0x012000052B1FDE18C072418A74EA3125AAF9C1&View=%7B7C49D893%2DE95D%2D4395%2DB7E8%2DA1575B81D1E3%7D>

4.4.1. Remove non-energy efficient appliances (such as old refrigerators). **Note:** The remainder of this paragraph contains recommendations for which Facility Managers should make reasonable efforts to ensure energy conservation within their facilities. It is understood that CE work orders, service calls (direct scheduled work) or even projects may be required to resolve some issues, but should be identified by the Facility Managers or Organizational Building Representatives and reported to CE for applicable follow up.

4.4.2. Report inoperable photocells and timers on exterior lighting and cracks and air leaks in the building exterior (walls, windows, doors and frames) to 72 ABW/CE Customer Service (734-3117) for repair.

4.4.3. Ensure lighting fixtures are clean and well maintained. Ensure LED (Light Emitting Diode) exit signs are installed (in place of incandescent signs).

4.4.4. Check to ensure facility utilizes low-flow faucets and toilets and notify CE if fixtures need to be replaced. Ensure the visible water system is free of drips or leaks. This may include, but is not limited to, leaking faucets, toilets continuously flowing or leaking, broken spigots and leaking interior or exterior water lines.

4.4.5. Ensure that unnecessary loads are turned off when not in use (i.e., displays, fans, coffee pots, radios, etc.).

4.4.6. Ensure heating, ventilation and air conditioning (HVAC) ventilation grilles are free from obstructions (books, flowers, debris, etc.). Notify CE if visible air filters need replacement. Submit a work order with 72 ABW/CE Customer Service (734-3117). Ensure portable electric space heaters are not being utilized as per guidance herein. Ensure air diffusers and registers are clean. If work areas contain locally adjustable thermostats, adjust temperature set points on heating and air conditioning systems to comply with requirements in [Paragraphs 6](#) and [7](#) for heating and cooling, respectively.

4.5. **INDIVIDUALS.** Energy conservation is everyone's responsibility. Pay special attention to energy conservation items daily. Ensure equipment and lights are turned off in unoccupied areas during the day, including individual offices when leaving for more than 5 minutes. Where possible, utilize daylight from windows and available task lighting to reduce need for overhead lighting. Report wasteful facility energy use to the Facility Manager, the organization energy manager, or the Base Energy Manager. Reduce use of personally procured appliances in government offices (radios, electronics, fans, etc.). Turn them off when not in use and never leave devices on at the end of duty day. Turn off unused equipment during the duty day when not in use, including:

4.5.1. Standalone printers, scanners and other computer peripherals

4.5.2. Computer monitors

4.5.3. Other personal appliances (i.e., coffee pots, radios, etc.)

4.6. **72 ABW/CEE, ENGINEERING.** Evaluate proposed energy projects and provide information for energy conservation construction projects.

4.7. **72 ABW/CEIA, ASSET ACCOUNTABILITY BRANCH.** Pay the utility bills for the base on time and ensure reimbursable customers are billed appropriately and timely. Perform annual reviews on purchased utility contracts. Review utility contracts and sales agreements to ensure records are current and accurate.

4.8. 72 ABW/CECO, CIVIL ENGINEERING OPERATIONS. Operate the Utility Monitoring and Control System (UMCS). UMCS is a computerized monitoring and control system used to manipulate Heating Ventilating and Air Conditioning (HVAC) in a facility to save energy and energy dollars. Civil Engineering Operations shall, through the use of the UMCS, carry out the control strategies set forth in this document through various local computerized systems. Also, CE Operations shall maintain and read utility meters installed throughout the base to obtain data for energy usage analyses and to ensure proper billing.

4.9. TENANT UNIT CIVIL ENGINEERING ORGANIZATIONS. In order to provide flexibility to specific and often unscheduled mission requirements, units with internal Civil Engineering organizations (i.e., 552 ACW, 507 ARW, Navy SCW-1) may manage their own energy settings where the control infrastructure allows. All set points and setbacks must comply with base policy herein unless temporarily modified per mission requirements. Permission for local control authority will be obtained from the Base Energy Manager.

**5. Utility Conservation Policy And Exceptions.** The following policy below shall be implemented in managing energy resources at Tinker AFB. Exceptions to this policy include, but are not limited to the protection and operation of computers, communications, medical operations, test measurement and diagnostic equipment (TMDE) and other laboratories and all areas requiring special climate considerations through Engineering Technical Letter (ETL) or Technical Order (TO). It is understood that CE will be responsible for setting set points and setbacks on all systems controlled by CE. Systems controlled by local thermostat or where control has been delegated to CE organizations within tenant units shall be controlled by that unit and must comply with the requirements herein. Pre-selected thermostat settings help achieve higher energy savings. Building occupants are encouraged to dress appropriately to ensure personal comfort. Problems with heating, ventilation, and air conditioning (HVAC) systems shall be referred to CE Customer Service at 734-3117. The Base Energy Manager is authorized to allow temporary deviations from set points for spaces with broken systems, exterior envelope issues, temporary changes in occupancy, and dramatic temporary variations (as determined by the Base Energy Manager). Requests for a temporary waiver from Tinker AFB established set points for maximum heating and minimum cooling temperatures as noted below must be submitted via email directly to the Base Energy Manager or to [72ABW.CE.Energy@us.af.mil](mailto:72ABW.CE.Energy@us.af.mil) for consideration, with documentation noting what is being done to correct HVAC system root-cause problems, i.e., there should be a plan in place to correct the issue prior to the Base Energy Manager approving a waiver. The Base Energy Manager will review requests submitted and, pending all information being submitted appropriately, provide as prompt of a waiver approval as possible. Waivers will only be granted for a maximum of 12 months, pending resolution of HVAC root-cause issues creating the need for the waiver in the first place. Changes to production schedules may also result in a request to temporarily or permanently adjust set point temperatures for heating and/or cooling and requests shall be submitted the same way as waiver requests noted above.

**6. Heating.** Set heating system controls to the following maximum heating space temperatures in the following types of spaces:

6.1. In areas where heat is required to protect material and installed equipment from freezing (unoccupied areas): Forty Degrees Fahrenheit (40°F), unless otherwise approved by the Base Energy Manager in writing.

6.2. In hangars and warehouse spaces: Sixty Degrees Fahrenheit (60°F), with setback to 50°F during non-duty (unoccupied) hours, unless otherwise approved by the Base Energy Manager in writing.

6.3. In areas of shop spaces: Sixty-five Degrees Fahrenheit (65°F), with setback to 55°F during non-duty (unoccupied) hours, unless otherwise approved by the Base Energy Manager in writing.

6.4. In administrative/classroom spaces: Sixty-eight Degrees Fahrenheit (68°F), with setback to 55°F during non-duty (unoccupied) hours, unless otherwise approved by the Base Energy Manager in writing.

6.5. Military family housing and unaccompanied housing: Residents are encouraged to maintain reduced temperature settings consistent with family needs. Recommended maximum heating temperature is 68°F.

6.6. Areas governed under special guidance provided by ETL or TO that require special climate considerations are exempt from these requirements (i.e. medical facilities, paint booths, etc.).

**7. Cooling.** Cooling system controls in all facilities with refrigerated air conditioning will be set to maintain an average space temperature of 76°F during normal duty hours. Operation of these systems during non-duty hours and intermediate seasons shall be kept to a minimum and appropriate setback temperatures determined by 72 ABW/CE shall be employed on all capable systems with the typical setback for unoccupied spaces being 84°F when systems and facilities allow and are properly sized to do so. The use of circulating fans is authorized unless otherwise prohibited due to industrial processes or work practices. If used, circulating fans shall be turned off during non-duty hours and during extended time away from the office. Cooling system controls shall be set to the following minimum cooling space temperatures:

7.1. Seventy-six Degrees Fahrenheit (76°F). All areas served by refrigerated air conditioning systems for climate control purposes, unless otherwise approved by the Base Energy Manager in writing.

7.2. Military family housing and unaccompanied housing residents are encouraged to maintain temperature settings consistent with family needs. Recommended minimum cooling temperature is 76°F. When using air conditioning, residents are encouraged to conserve energy by raising thermostats when leaving their home.

7.3. Areas governed under special guidance provided by ETL, TO, or other guiding document, that require special climate considerations, are exempt from this requirement (i.e. medical facilities, paint booths, etc.). **Note:** Most shop and warehouse spaces are not currently cooled with refrigerated air conditioning systems. Refrigerated air conditioning systems shall not be installed in these areas unless authorized by ETL, TO, or other guiding document, and approved by the Base Energy Manager and/or the Tinker AFB Energy Assurance Steering Group.

**8. Hot Water.** Where operationally practical, domestic hot water (not process water) temperature controls shall be set to maintain the following hot water temperatures:

8.1. Latrines and toilet facilities without showers or tubs: the actual measured temperature of hot water delivered to the user shall not exceed 105°F.

8.2. Latrines and toilet facilities with showers or tubs: the actual measured temperature of hot water delivered to the user shall not exceed 110°F.

8.3. In buildings, such as unaccompanied enlisted quarters where there may be toilet facilities with and without showers or tubs where there is heavy and frequent use of bathing facilities and where there is a common hot water supply system, the delivered temperature of 110°F may be used throughout the facility.

8.4. Where laundry facilities are provided, occupants shall be advised of the water temperature and to use cold water type detergents if washing difficulties are encountered at 110°F.

**9. Lights.** Lighting intensities in base facilities should not exceed lighting levels for various work areas as identified in the latest edition of the Illuminating Engineering Society (IES) Handbook or applicable Unified Facilities Guide Specification (UFGS). Areas governed under special guidance provided by ETL or TO that require special considerations are exempt from this requirement.

9.1. When and where practical, turn off all lights and electrical equipment when rooms will be vacant for more than five minutes, including during the lunch hour. When and where practical, occupancy sensors shall be employed. Contact CE Customer Service (734-3117) to discuss installation of occupancy sensors where warranted.

9.2. All lights with the exception of safety, security and exit lights shall be shut off when not in use and after work hours.

**10. Control Program.** The objective of an Energy Management Program is to lower utility costs and energy/water consumption and to encourage sound conservation practices. Where practical, energy management control systems shall be installed and used in all new renovation and construction and coordinated with the Base Energy Manager throughout the planning, design, and construction phases of all projects. Control systems are provided by a number of different vendors and go by various trade names, with the intent of monitoring and controlling energy usage in facilities. Changes to the temperature limits identified in this instruction in non-ETL/TO governed facilities or dictated by mission requirements shall require approval by the Base Energy Manager through a written request submitted to the Base Energy Manager for consideration.

**11. Water Conservation.** The Base Civil Engineer directs the water conservation program. The water management program strives to eliminate water waste through implementation of the Federal Water Efficiency Best Management Practices (BMPs). The program achieves this goal through awareness and training efforts across the base and in military family housing, renovation and retrofit programs in areas such as water management planning, water-efficient landscaping, water-efficient irrigation, and various types of facility fixtures (toilets, urinals, faucets, showerheads, etc.). For more details, reference: <https://www.energy.gov/eere/femp/best-management-practices-water-efficiency>.

**12. General Energy Conservation.** Designs for new construction shall achieve 30% energy consumption reduction from the baseline per ASHRAE Standard 90.1, *Energy Standard for Buildings Except Low-Rise Residential Buildings*, and major renovation of installation buildings shall achieve energy consumption reduction per options outlined in Unified Facilities Criteria (UFC) 1-200-02, *High Performance and Sustainable Building Requirements*, if life-cycle cost-

effective (LCCE). Materials, energy efficient equipment including electric motors, temperature control systems, shading, daylighting, demand control ventilation, etc. shall be utilized to the extent possible to provide energy efficient facilities IAW ASHRAE 90.1.

PAUL G. FILCEK, Colonel, USAF  
Commander

**Attachment 1****GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

AFI 90-1701, Installation Energy and Water Management, 16 July 2009

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

AFMAN 32-1061, Providing Utilities to U.S. Air Force Installations, 16 July 2019

TAFBI 32-9001, *Facility Management Guidelines*, 13 February 2019

ASHRAE Standard 90.1, *Energy Standard for Buildings Except Low-Rise Residential Buildings*, 2016.

UFC 1-200-02, *High Performance and Sustainable Building Requirements*, 1 December 2016

United States Air Force Energy Flight Plan 2017-2036, 6 January 2017

***Adopted Forms***

AF Form 847, *Recommendation for Change of Publication*

***Abbreviations and Acronyms***

**AF**—Air Force

**AFB**—Air Force Base

**AFI**—Air Force Instruction

**AFMAN**—Air Force Manual

**AFMC**—Air Force Materiel Command

**AFPD**—Air Force Policy Directive

**AFRIMS**—Air Force Records Information Management System

**AFSC**—Air Force Systems Command

**ASHRAE**—American Society of Heating, Refrigerating and Air-Conditioning Engineers

**BMP**—Best Management Practice

**CE**—Civil Engineering

**DoD**—Department of Defense

**EASG**—Energy Assurance Steering Group

**EAWG**—Energy Assurance Working Group

**ETL**—Engineering Technical Letter

**HVAC**—Heating Ventilation and Air Conditioning

**IAW**—In Accordance With

**IES**—Illuminating Engineering Society

**LCCE**—Life-Cycle Cost-Effective  
**LED**—Light Emitting Diode  
**OBR**—Organizational Building Representative  
**OPR**—Office of Primary Responsibility  
**PA**—Public Affairs  
**RDS**—Records Disposition Schedule  
**TAFB**—Tinker Air Force Base  
**TAFBI**—Tinker Air Force Base Instruction  
**TMDE**—Test, Measurement, and Diagnostic Equipment  
**TO**—Technical Order  
**UFC**—Unified Facilities Criteria  
**UFGS**—Unified Facilities Guide Specification  
**UMCS**—Utility Monitoring and Control System  
**USAF**—United States Air Force