

**BY ORDER OF THE COMMANDER  
8TH FIGHTER WING**

**8TH FIGHTER WING INSTRUCTION 23-302**

**6 JUNE 2013**



**Material Management**

**ENERGY CONSERVATION**

**COMPLIANCE WITH THIS PUBLICATION IS MANDATORY**

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**RELEASABILITY:** There are no releasability restrictions on this publication

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OPR: 8 CES/CEA

Certified by: 8 MSG/CC  
(Colonel Joseph Atkins)

Supersedes: 8 FWI 23-302, 03 May 2012

Pages: 12

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This instruction implements Air Force Policy Directive (AFPD) 90-17, *Energy Management*. It establishes responsibilities and procedures outlining energy conservation policies for Kunsan Air Base. This instruction applies to all units/ staff agencies, assigned to the 8th Fighter Wing, Kunsan AB, Korea. Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using the AF Form 847, *Recommendation for Change of Publication*; route the AF Forms 847 from the field through the appropriate functional chain of command. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with Air Force Manual (AFMAN) 33-363, *Management of Records*, and disposed of in accordance with Air Force Records Information Management System (AFRIMS) Records Disposition Schedule (RDS). The use of the name or mark of any specific manufacturer, commercial product, commodity, or service in this publication does not imply endorsement by the Air Force.

**SUMMARY OF CHANGES**

This revision updates reference documentation associated with Energy Management and expands on the responsibilities of personnel who work and live at Kunsan AB.

**1. Purpose:** This policy will help decrease Kunsan Air Base's energy consumption in an effort to meet the energy reduction goals mandated by Executive Order 13423, *Strengthening Federal Environmental, Energy, and Transportation Management*, and outlined in AFI 90-1701, *Energy Management*, for all government facilities. It outlines the responsibilities for energy conservation in all facilities.

**2. Lighting Standards:** Lighting standards shall be observed throughout Kunsan AB.

2.1. Interior Lighting: Facility and dormitory managers must maintain lighting at acceptable illumination levels according to 41CFR 102-74.180. In general, this may be accomplished by ensuring that facilities comply with the interior lighting levels shown in Table 1. *Allowable Interior Lighting Levels* unless the Base Civil Engineer (BCE) determines that special circumstances exist. The 8th Civil Engineer Squadron (8 CES) will evaluate lighting levels for energy consumption determinations using a foot-candle meter as well as the Illuminance Selection guidelines provided by the IES Lighting Handbook published by the Illumination Engineering Society (IES).

**Table 1. Allowable Interior Lighting Levels**

Level of Lighting (ft-candles)	Location in Facility
50	Work station surfaces and where visually difficult or critical tasks are accomplished.
30	General work areas.
10	Non-work areas and storage areas.
1-3	Corridors and stairwells.
As required	Safety* and security devices.

**NOTE:** The National Fire Protection Association 101 Life Safety Code DOES allow for the use of lighting controlled by occupancy sensors even for illumination of a means of egress provided relevant technical requirements are met.

2.1.1. Facility Managers will be responsible for turning off all interior lighting in shared areas when buildings are unoccupied. Exceptions include lighting required by the 8 CES Fire Emergency Services Flight (8 CES/CEF), 8th Fighter Wing Safety (8 FW/SE), and 8th Security Forces Squadron (8 SFS).

2.1.2. Hardened Aircraft Shelter (HAS) lighting will be turned off if unoccupied and an aircraft is not scheduled to return for maintenance that day.

2.1.3. Dorm occupants are responsible for ensuring lights are off when they are not in their rooms. Dorm managers will document energy waste on dormitory inspection sheets.

2.1.4. Dorm residents are encouraged to use task lighting instead of using overhead lights when at their desk, as it uses less energy.

2.2. Exterior Lighting: When feasible, exterior lighting circuits and fixtures should be adjusted (with timers, photocells, etc.) to provide minimal safe lighting dusk to dawn. Give consideration to force protection requirements, safety, and facilities supporting 24-hour operations. Facility managers are responsible for ensuring exterior lights are off during daylight hours.

2.3. Plug in Loads: Unplug appliances that drain energy even when not in use (i.e. cell phone chargers, fans, coffee makers, radios, toasters, game consoles, etc.).

2.3.1. Dorm residents should ensure all appliances are unplugged when rooms are unoccupied. This is particularly important during mid tour leave. Give consideration to appliances with standby power modes or when it is not feasible (i.e. alarm clocks, refrigerators, etc.).

2.3.2. In order to prevent mold growth during the summer months; dorm residents may leave dehumidifiers plugged in. Dorm residents must ensure they have someone checking dehumidifier water levels while they are on leave in order to prevent water damage to the room.

**3. Temperature Standards:** All base activities will observe the minimum and maximum thermostat temperature standards outlined in Table 2. *Minimum and Maximum Temperature Settings*, unless waived by the base energy manager per paragraph 6 in this instruction.

**Table 2. Minimum and Maximum Thermostat Settings**

Facility Classification	Minimum Air Conditioning	Maximum Heating
Offices, classrooms, laboratories, recreational facilities, dining facilities, chapel.	78° F	68° F
Dormitories, VOQs, and VAQs.	76° F	68° F
Shops, hangars, warehouses, and other facilities buildings where employees work is physically active.	No A/C	55° F
Supply buildings and mechanical rooms – heat required to protect material and installed equipment from freezing. No heat will be permitted where stocking and withdrawal is the only operation. Heat equipment spaces as specified in manufacturer’s warranty, service manual, or equipment service contract.	No A/C	40° F

3.1. Heating, Ventilating, and Air Conditioning (HVAC): HVAC systems are primarily the responsibility of 8 CES. Base personnel can give assistance in the area of HVAC problem identification. Keep in touch with your surroundings and report HVAC systems that are running inefficiently to your facility manager.

3.1.1. Examples of improper or inefficient HVAC use include:

3.1.1.1. Reliance on computers and other heat radiating office equipment running 24 hours a day in the winter in order to keep a room from getting too cool; this is an energy conservation situation which should be reported immediately for improvement.

3.1.1.2. Opening doors and windows to control the temperature of an area when the HVAC is running. Personnel should report problems to their facility or dormitory manager who will have 8 CES adjust the HVAC settings.

3.1.2. Close all windows and doors when air conditioners, heaters, or collective protection systems are on.

3.1.3. Turn off air conditioners in large administrative facilities during non-duty hours 1800-0700 with the exception of mission critical facilities. 8 CES/CEOIH will install timers where feasible.

3.2. Personal Fans: The use of personal fans is encouraged if maintaining proper summer thermostat settings of 78°F. The quality-of-life benefit provided by use of fans outweighs the minor increase in electrical consumption if maintaining proper thermostat settings.

3.3. Air Diffusers: Building occupants will not adjust air diffusers or block them with paper, cardboard, or other materials. When a diffuser problem occurs, the closure of the diffuser may temporarily solve the problem, but it creates a chain reaction that results in an unbalanced air system. The unbalanced air system can waste energy since the air conditioning may be required to run longer in order to provide comfort to the unbalanced areas. Occupants should notify the facility manager or dorm manager to submit a work order request.

3.4. Space Heaters: The use of space heaters should be strictly limited due to high-energy costs and safety concerns. Submit requests for space heaters to the facility or dormitory manager.

3.4.1. All space heaters must be UL listed or FM approved. Use space heaters in accordance to the manufacturer recommendations and do not leave them unattended. Safe use of the space heater will be the responsibility of the user.

3.4.2. The use of space heaters will generally be approved for the following reasons:

3.4.2.1. No other heating source is available.

3.4.2.2. Existing heating equipment fails to maintain an appropriate temperature. (See Table 3.1.)

3.5. Windows: Dorm rooms and office occupants should take advantage of the placement of the sun to keep their areas at comfortable temperatures.

3.5.1. Summer: Keep rooms cool during the hot summer months by closing window shades, drapes, or blinds.

3.5.2. Winter: Use the sun's rays to keep room warm by opening window shades, drapes, or blinds.

**4. Mild Weather Season:** During fall and spring, 8 CES will monitor temperatures and turn the HVAC systems off or on according to the guidelines stated below. The 8 FW/CC can override these guidelines with the understanding that energy conservation may be impacted. The 8 FW/CC may balance energy use by turning on or off HVAC systems in lodging/domicile facilities to improve quality of rest while keeping HVAC systems in some work locations on or off to maintain a similar level of energy conservation.

4.1. Fall: During late September, October and November, 8 CES will monitor weather conditions and turn off air-cooling systems and activate heating systems according to the following weather conditions:

4.1.1. Air-cooling systems off: This will occur after three consecutive days where the mean temperature is below 70°F. Historically, when the average daily temperature

decreases to this temperature for three days, the temperature will remain in a comfortable range.

4.1.2. Heat systems on: This will occur after three consecutive days where the mean temperature is below 55°F for dormitory facilities only and after three consecutive days of 50 °F for all other facilities on base.

4.2. Spring: During March, April, May, and June, 8 CES will monitor weather conditions and turn off heating systems and activate cooling systems according to the following weather conditions:

4.2.1. Heat systems off: This will occur after three consecutive days where the mean temperature is above 50°F for all facilities on base excluding dormitories which will have heat turned off after three consecutive days where the mean temperature is above 55 °F. Historically, when the average daily temperature increases above this temperature for three days, the temperature will remain in a comfortable range.

4.2.2. Air-cooling systems on: This will occur after three consecutive days where the mean temperature is above 70°F and forecast to remain above 70 °F. Table 3. *Monthly Average Temperatures* shows monthly average temperatures that can be expected at Kunsan AB.

**Table 3. Monthly Average Temperatures**

<b>Month</b>	<b>Avg Temp</b>	<b>Avg High</b>	<b>Avg Low</b>
<b>January</b>	32	38	25
<b>February</b>	34	40	28
<b>March</b>	42	48	36
<b>April</b>	53	59	46
<b>May</b>	62	69	56
<b>June</b>	70	76	65
<b>July</b>	78	83	74
<b>August</b>	80	86	75
<b>September</b>	71	78	65
<b>October</b>	60	68	53
<b>November</b>	48	56	41
<b>December</b>	37	44	31
<b>Annual</b>	<b>56</b>	<b>62</b>	<b>50</b>
<i>Note:</i> This data was taken from the Kunsan Climatology table maintained by 8 OSS/OSW. Statistics are based on a Period of Record (POR) from Aug 1951 - Sep 2005.			

4.3. Mild Weather Heat/Cool Policy and Quality of Life: Organizational commanders will encourage personnel to dress appropriately during periods when indoor temperatures may be cool or warm.

4.3.1. Facility managers will maximize the use of outside air in lieu of air conditioning and heating. Facility managers will implement this policy and will have personnel in

their building open windows and doors and use fans when the air conditioning is not running to keep the facility at a comfortable temperature.

4.3.2. Facility and dormitory managers will ensure personnel are not opening windows and doors to cool the facility in the winter when the heat is running. Facility managers will call the 8 CES Customer Service Desk and request for the HVAC shop to adjust the temperature of the heater or investigate if the system is off balance.

## **5. Office Equipment:**

5.1. Computer Hard Drives: Personnel must shut down all programs and log off their desktop computers at the end of the duty day. The 8th Communications Squadron (8 CS) requires hard drives to remain powered on for maintenance and upgrades.

5.2. Computer Monitors: Kunsan AB employs a Standard Desktop Configuration (SDC) that automatically powers off monitors within 30 minutes or less. On those computers for which the SDC is not activated, the user must turn off monitors at the end of the duty day.

5.2.1. For those computers not utilizing the SDC, screen savers are not to be used, as they waste energy. Use an appropriate "screen saver option" to lock the computer for communications or operations security.

5.2.1.1. For those computers not utilizing the SDC, personnel will set their computer so the monitor will automatically shut off in ten minutes and the hard drive will automatically go into "standby" mode in one hour using "Power Options" under "Control Panel."

5.2.1.2. Contact the unit Client Support Administrator (CSA) for assistance in setting the energy savings options.

5.3. Copy Machines and Printers: Turn off at the end of the duty day.

5.4. Miscellaneous Equipment and Appliances: Unplug equipment and appliances that drain energy even when not in use (i.e. cell phone chargers, fans, coffee makers, radios, etc).

**6. Energy Policy Exemptions:** The base energy manager, with the assistance of 8 CES/CEF and as allowed by paragraph 6.1 below, will approve/disapprove all exemptions to energy policy that are set out by this instruction only. Organizations must provide documentation supporting waiver requests (AFI, Operating Instructions, Technical Specifications, etc.).

6.1. Components of the energy policy mandated by law or Air Force Instruction cannot be waived.

6.2. Requestors will route exemption requests through their facility manager and commander to the base energy manager. (Please note paragraph 4.3. prior to submitting requests for temperature exemptions.).

6.3. Exemptions are typically limited to lighting levels and temperature standards: Permanent exemptions may be granted for some facilities. The list of facilities permanently exempted from the mild season heat/cool policy is attached (See Attachment 2). All other facilities must annually resubmit exemption requests.

## 7. New Facility Design and Construction:

7.1. All designs for new construction and renovations will comply with the applicable portions of the most recent Uniform Facilities Criteria (UFC) 3-400-01, Energy Conservation.

7.2. The United States Green Building Council's (USGBC) "Leadership in Energy and Environmental Design" (LEED) Green Building Rating System is a preferred self-assessment metric to apply the principles of sustainable development. Kunsan AB shall apply sustainable development concepts in the planning, design, construction, environmental management, operation, maintenance and disposal of facilities and infrastructure projects, consistent with the spirit of the most recent Sustainable Design and Development Policy distributed on June 02, 2011 in the memorandum entitled "Air Force Sustainable Design and Development (SDD) Implementation Guidance". Accordingly, LEED criteria shall be employed to incorporate sustainable development at Kunsan Air Base.

## 8. Contractors and other Tenants:

8.1. Construction contractors are required to participate in the energy conservation program.

8.2. The government may provide utilities (i.e. water, electricity, natural gas, etc.) to the contractor without charge if stated in the Statement of Work/Contract. If utilities are provided without charge, the contractor may still be required to provide their plan to turn off and conserve utilities, especially during hours when utilities are not being used. Construction inspectors must advise contractors of their energy management responsibility and ensure the contractors do not waste energy.

8.3. The Base Civil Engineer reserves the right to require contractors to pay for utilities used.

8.4. This Energy Conservation instruction applies to all permit and out grant license holders on Kunsan Air base (i.e. Korean Employee Union ).

## 9. Government Motor Vehicles (GMVs)

9.1. The use of GMVs will be in accordance with AFI 24-301, *Vehicle Operations*, which restricts the use of GMVs for official business.

**10. Green Procurement:** The reduction of green house gas emissions, which are harmful to the environment, is a second order effect of reducing energy consumption. Purchasing environmentally friendly products also protects the environment.

10.1. All energy-consuming products shall, when feasible, be either ENERGY STAR qualified or Federal Energy Management Program (FEMP) recommended.

10.1.1. Preferment to ENERGY STAR qualified or Federal Energy Management Program (FEMP) recommended appliances is in accordance with Executive Order 13423.

10.1.2. These products are in the top 25 percent of energy efficiency in their class. Additional details regarding these purchasing requirements can be found at [www.energystar.gov/products](http://www.energystar.gov/products) and [www.eere.energy.gov/femp/procurement](http://www.eere.energy.gov/femp/procurement).

10.2. When feasible, environmentally friendly goods and services should be chosen over those that are not. Environmentally friendly goods and services include: Products manufactured from recycled and reclaimed materials, bio-based products, energy efficient products, alternatives to ozone-depleting substances, substitutes for EPA Priority Chemicals, and the purchase of alternative fueled vehicles (AFV), alternative fuels and fuel-efficient vehicles.

S. CLINTON HINOTE, Colonel, USAF  
Commander

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

AFPD 90-17, *Energy Management*, 29 Nov 2011

AFI 24-301, *Vehicle Operations*, 01 Nov 2008

AFI 90-1701, *Energy Management*, 16 Jul 2009

AFMAN33-363, *Management of Records*, 1 Mar 2008

41CFR 102-74.180, *What illumination levels must Federal agencies maintain on Federal facilities?*, 01 July 2009

Air Force Sustainable Design and Development (SDD) Implementation Guidance, 02 June 2011

Executive Order 13423, *Strengthening Federal Environmental, Energy, and Transportation Management*, 26 January 2007

Uniform Facilities Criteria (UFC) 3-400-01 including Change 4, *Energy Conservation*, 04 Aug 2008

***Adopted Forms***

AF Form 847, *Recommendation for Change of Publication*

***Abbreviations and Acronyms***

**AB**—Air Base

**AFI**—Air Force Instruction

**AFN**—Armed Forces Network

**AFKN**—Air Force Korean Network

**AFV**—Alternative Fueled Vehicle

**AMU**—Aircraft Maintenance Unit

**ASR**—Airport Surveillance Radar

**BCE**—Base Civil Engineer

**CAS**—Close Air Support

**CSA**—Client Support Administrator

**DPI**—Data Processing Installation

**ECM**—Electronic Counter Measures

**EMSG**—Energy Management Steering Group

**FEMP**—Federal Energy Management Program

**GMV**—Government Motor Vehicle

**HAS**—Hardened Aircraft Shelter

**HVAC**—Heating, Ventilating, and Air Conditioning  
**IES**—Illumination Engineering Society  
**LE**—Law Enforcement  
**LEED**—Leadership in Energy and Environmental Design  
**MOC**—Maintenance Operations Center  
**MWR**—Moral and Welfare Recreation  
**NEC**—National Electrical Code  
**PAR**—Precision Approach Radar  
**PMEL**—Precision Measurement Equipment Laboratory  
**POR**—Period of Record  
**RAPCON**—Radar Approach CONTROL  
**SDC**—Standard Desktop Configuration  
**SDD**—Sustainable Design and Development  
**UFC**—Uniform Facilities Criteria  
**USGBC**—United States Green Building Council  
**VAQ**—Visitor Airmen Quarter  
**VOQ**—Visitor Officers Quarter

## Attachment 2

## CRITICAL AIR CONDITIONING AND HEATING FACILITY LIST

Figure A2.1. Year Round Heat/Cool – Mission Critical

<b>Bldg</b>	<b>Description</b>
PB 48	RAPCON support located by Bldg. 2029
PB 50	PAR Radar Located on Flight Line
PB 51	ASR Radar Located on Flight Line
PB 52	Localizer
PB 53	Glides Lope
405	X-Ray Room 167
422	Computer Room (No. 109).
511	Data Automation
702	CES (Computer Room)
720	PMEL Lab
724	Flight Simulator
755	MWR (Computer Room No. 210A) and MSS (Computer Room No. 218)
765	ECM Pod Shop
766	DPI (Computer Area)
908	Digital Switch Area-Communications Facility
911	MOC
952	Transmitter Site
1305	Command Post (1st Floor) including the Telephone Red-switch room
2595	Communications Receiver Site
2715	Area 12 Maintenance and Inspection Building
2719	CAS-B Computer Facility
2814	Telephone Exchange-Communications Facility
2829	Control Tower, 5th, 6th, and 7th Floor
2844	RAPCON

**Note:** Climate control equipment may operate year round in the above facilities.

**Figure A2.2. Extended Heat/Cool – Dining establishments, medical facilities, and other high use facilities**

<b>Bldg</b>	<b>Description</b>
387	Korean Garden Restaurant
405	Hospital
410	Medical Supply Warehouse
421	Medical Supply Warehouse
432	Radio Relay Facility
501	Chapel
550	O'Malley Dining Facility
568	CPTS (Computer Room)
590	LE Desk
607	AFKN
833	Medical Supply Warehouse
902	80th Squadron Operations
908	Telephone Exchange-Communications Facility
915	80th Sortie Generation Building
1102	Base Exchange
1025	Loring Club
1027	Falcon Community Center
1055	Fitness Center
1057	Bowling Center
1101	AFN Studio
2548	35th Squadron Operations
2565	35th AMU
2627	Fuels Analysis Lab
2815	Fire Department
2820	Corrosion Control Facility
2850	C-Pad
2858	Base Operations (Room 10)

**Note:** The above facilities are candidates to have their A/C and Heat turned off last. If temperatures become unseasonably hot or cold early in the season, these facilities may be the first to have A/C or heat turned on.