



**DEPARTMENT OF THE AIR FORCE
PACIFIC AIR FORCES**

MEMORANDUM FOR SEE DISTRIBUTION

FROM: 18 WG/CC

SUBJECT: 18th Wing Energy and Water Conservation Policy

1. Executive Order 13423 mandates federal facilities to reduce energy use by 3 percent per year starting in FY06, with a total reduction of 30 percent by FY15. Executive Order also mandates federal facilities to reduce water consumption by 2 percent per year starting in FY08, with a total reduction of 26 percent by FY20. While we look forward to meeting these federal energy and water reduction goals, we are committed to balancing energy reduction with sustaining quality of life for all Team Kadena members and their families.
2. The purpose of the attached policy is to provide the most equitable solution possible given existing resources, regulatory mandates, and mission requirements. Where possible, we will make every effort to maximize occupant comfort within the operating limits of the centralized utility plants and HVAC equipment. However, the primary focus must be the elimination of energy waste including implementing more efficient operational procedures and incorporating energy-efficient technologies when and where economically feasible.
3. I cannot stress enough how important it is for us to collectively continue to evolve our energy consumption culture to one of conservation. "The Vision for the 2010 Air Force Energy Plan—Make Energy a Consideration In All We Do—highlights that energy is central to all of the interdependent functional aspects of the Air Force's mission execution." To help Kadena achieve the federally-mandated energy reduction goals, it is imperative all Team Kadena members renew their commitment to utilities and energy conservation, whether in your on-base homes, work, community or recreational facility. The attached policy applies to Kadena Air Base facilities and MFH areas located on Kadena Air Base, Chibana, O'Donnell Gardens, Camp Courtney, Camp Kinser, Camp Foster, Camp Lester, and Plaza housing. Exclusions to this policy are MFH towers and Camp McTureous.
4. If you have any questions, please contact Asset Management Flight, 718 CES/CEA at 634-2461.

//Signed, mhm, 16 Jan 12//
MATTHEW H. MOLLOY
Brigadier General, USAF
Commander, 18th Wing

4 Attachments:

1. 18th Wing Energy and Water Conservation Policy
2. Smart and Easy Ways to Improve Your Quality of Life
3. Template for Exception to Policy Submittal Letter
4. Template for Temporary Exception to Policy Submittal Letter

DISTRIBUTION:

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18th Wing Energy and Water Conservation Policy

1. **Air Conditioning and Heating Seasons:** Activation and deactivation of heating, ventilation, and air conditioning (HVAC) is determined by a combination of “No Later Than” (NLT) and “No Earlier Than” (NET) dates and a 7-day average of the daily high temperature, which takes into account actual and forecasted temperatures. Activation and Deactivation “trigger” points can be reached before the NLT/NET dates, at which time discretion is left to the 18th Civil Engineer Group Commander, or a designee. Living quarters with central heating and air conditioning (HVAC) will be the first to activate and the last to deactivate HVAC.

Note 1: Per the request of MCBJ AC/S FE, air conditioning for all Marine Corps Camp towers with centralized HVAC will have year-around air conditioning. All homes in the Camp McTureous Housing Area will also be included due to the complaints of noxious odors in that area. Air conditioning will not be deactivated and in turn, heat will not be activated. This will also be applied to Bazley Towers on Kadena Air Base.

1.1 **Air Conditioning Deactivation for O&M Facilities:**

- (a) No Later Than: 1 December.
- (b) Beginning in November, air conditioning (A/C) may be deactivated when the outdoor 7-day average high temperature is below 73°F (23°C). Once A/C is deactivated, it will remain deactivated for a minimum of 7 days prior to activation of heating.

1.2 **Air Conditioning Deactivation for centralized HVAC MFH units and Dorms:**

- (a) No Later Than: 28 December.
- (b) Beginning in December, A/C may be deactivated when the outdoor 7-day average high temperature is below 73°F (23°C). Once A/C is deactivated, it will remain deactivated for a minimum of 7 days prior to activation of heating.
- (c) Excludes MFH Towers and McTureous Housing Area. (see Note 1)

1.3 **Heating Activation for O&M Facilities:**

- (a) Normally heat is not provided to O&M facilities.
- (b) See section 9 for instructions on submitting a waiver request.

1.4 **Heating Activation for centralized HVAC MFH units and Dorms:**

- (a) Beginning in December, heat may be activated when the outdoor 7-day average high temperature is below 65°F (18°C).
- (b) Once Heat activation begins, it will remain activated for a minimum of 30 days.
- (c) Heat activation will not begin within 7 days of A/C deactivation.
- (d) Excludes MFH Towers and McTureous Housing Area. (see Note 1)

1.5 **Heating Deactivation for O&M Facilities:**

- (a) Normally heat will not be provided to O&M facilities.
- (b) Facilities with waivers are subject to the conditions of the waiver.

1.6 Heating Deactivation for centralized HVAC MFH units and Dorms:

- (a) Beginning in January, heat may be deactivated when the outdoor 7-day average high temperature is above 65°F (18°C).
- (b) Once heat is deactivated it will remain deactivated for a minimum of 7 days prior to activation of air conditioning.

1.7 Air Conditioning Activation for O&M Facilities:

- (a) No Earlier Than: 1 April.
- (b) Beginning in March, A/C may be activated when the outdoor 7-day average high temperature is above 73°F (23°C).
- (c) A/C activation will not begin within 7 days of heat deactivation.

1.8 Air Conditioning Activation for centralized HVAC MFH units and Dorms:

- (a) No Earlier Than: 1 March.
- (b) Beginning in March, A/C may be activated when the outdoor 7-day average high temperature is above 73°F (23°C).
- (c) A/C activation will not begin within 7 days of heat deactivation.

2. Air Conditioning

- a. A/C is only authorized during the season specified in Air Conditioning and Heating Seasons (see Section 1) for housing units on central HVAC and for O&M facilities. Housing units with individual controls are not subject to this policy; however, good energy conservation of A/C and heating is expected. Exceptions to the season restrictions include medical/dental clinics, clubs, schools, sit-down restaurants, military dining facilities, childcare centers, the Commissary, major AAFES public facilities, and facilities with authorized waivers. These facilities may judiciously use A/C for customer comfort.
- b. Work areas are authorized A/C only during occupied hours, in accordance with (IAW) Table 1.
- c. Portable air conditioners are not authorized for use in any MFH units or O&M facilities. Emergency exceptions will be considered on a case-by-case basis (e.g., normal climate control inoperative).
- d. Privately owned window air conditioners (or “split systems”) are not authorized in any MFH unit or O&M facilities.
- e. The use of personally owned air circulation fans is encouraged in MFH and O&M facilities, provided proper summer thermostat settings are maintained. When proper thermostat settings are maintained, the quality of life benefit provided by these fans outweighs the minor increase in electrical consumption. In humid weather, a low fan speed will draw more moisture out of the air.

3. Heating

- a. Heating is only authorized during the “season” specified in Air Conditioning and Heating Seasons (see Section 1) for housing units on central HVAC and for O&M facilities. Heating is authorized for medical/dental clinics, clubs, schools, sit-down restaurants, child care centers, and facilities with authorized waivers.
- b. Portable space heaters are not authorized in MFH or O&M facilities, with the exception of MFH units that are year-round air conditioned listed in Note 1 (space heaters must be UL listed).

Table 1 Cooling and Heating Guidelines per ETL 98-4.

Cooling (Minimum Thermostat Settings)		
Type of Facility	Occupied Hours	Unoccupied Hours
*MFH	76-80 °F (24-27°C)	80°F (27°C)
*Public Areas, AAFES, DoDDS, Gym, Child Day Care Facilities, Bowling Alleys, etc.	76-80 °F (24-27°C)	80°F (27°C)
*Hospital, clinic and related facilities	76-80 °F (24-27°C)	80°F (27°C)
Offices	76-80 °F (24-27°C)	80°F (27°C)
Cafeterias and similar facilities (Restaurants, Clubs, etc)	76-80 °F (24-27°C)	80°F (27°C)
Auditoriums and similar facilities (Theater, etc.)	76-80 °F (24-27°C)	80°F (27°C)
Computer Rooms	76-80 °F (24-27°C)	80°F (27°C)
Toilet Rooms and similar facilities (Dressing Rooms, shower facilities, etc.)	80 °F (27°C)	80°F (27°C)
Storage, equipment rooms, garages and similar facilities (warehouses, hangers, Maintenance Shops etc.)	Unconditioned	Unconditioned
Heating (Maximum Thermostat Settings)		
Type of Facility	Occupied Hours	Unoccupied Hours
*MFH	65-70°F (18-21°C)	60°F (16°C)
*Public Areas, AAFES, DoDDS, Gym, Child Day Care Facilities, Bowling Alleys, etc.	65-70°F (18-21°C)	<55°F (13°C)
*Hospital, clinic and related facilities	70-72°F (21-22°C)	60°F (16°C)
Offices	65-70°F (18-21°C)	60°F (16°C)

Corridors	65-70°F (18-21°C)	<55°F (13°C)
Long Term Warehouse Storage	55°F (13°C)	<55°F (13°C)
Cafeterias and similar facilities (Restaurants, Clubs, etc)	65-70°F (18-21°C)	<55°F (13°C)
Mechanical Rooms	55°F (13°C)	<55°F (13°C)
Vehicle Maintenance Shops and similar facilities (Maintenance Shops etc.)	55°F (13°C)	<55°F (13°C)
Occupied Storage Areas	65-70°F (18-21°C)	<55°F (13°C)
Auditoriums and similar facilities (Theater, etc.)	65-70°F (18-21°C)	<55°F (13°C)
Computer Rooms	65-70°F (18-21°C)	As required
Toilet Rooms and similar facilities (Dressing Rooms, shower facilities, etc.)	65-70°F (18-21°C)	<55°F (13°C)
Garages and similar facilities (warehouse, hanger, etc.)	Unconditioned	Unconditioned
*Not specifically identified in ETL 98-4 tables		

4. Programmable Thermostats and Energy Control Systems

Programmable thermostats and energy control systems cut back on heating, ventilation and air conditioning systems at night, on weekends and during the day when these systems are not needed. Facility improvement projects are continually in design and will incorporate programmable thermostats and energy control systems in order to increase efficiency and meet mandated energy goals. These control systems may cause buildings to feel stuffy after standard duty hours. This is a normal consequence of their energy saving function.

5. Hot Water

- a. Hot water is authorized in living quarters, medical and dental clinics, cooking and eating facilities, DoDDS, child care centers, fitness centers, the AMC terminal, and facilities with an approved waiver.
- b. Facilities with hot water tanks or water heaters, to include MFH, must have insulation jackets installed.
- c. Hot water can cause serious burns. With the exception of commercial dishwashing and commercial laundry, hot water temperatures (at point of use) shall not exceed 120°F (49°C).
- d. Commercial dishwashing and commercial laundry facilities shall utilize a booster at the point of use to generate water temperatures in excess of 120°F (49°C).

6. Lighting

- a. IAW Section 323 of the 2007 Energy Independence and Security Act (Public Law 110-40) each lighting fixture or standard light-bulb that is replaced in the normal course of maintenance shall be replaced with a lighting fixture or bulb that is energy efficient. Therefore and with limited exceptions, compact fluorescent lamps (CFLs) shall be used in place of incandescent bulbs in MFH and O&M facilities. CFLs are available at the GSA store (or another approved source) for O&M facility managers, or at Eagle Hardware for MFH residents.
- b. Minimize lighting requirements and turn off lights in unoccupied spaces.

c. Turn off outside lights during daylight hours and turn off lights at all outdoor athletic facilities before leaving.

d. Outdoor athletic lighting shall be turned on as follows:

- 1 October thru 31 January: No earlier than 1630 hours.
- 1 February thru 31 May: No earlier than 1730 hours.
- 1 January thru 30 September: No earlier than 1800 hours.

This allows adequate time for warm-up a minimum of one hour prior to sunset.

e. Decorative holiday lighting illumination is limited to the hours of dusk to 2200 hrs. The exception to this policy is the holiday itself (e.g. Christmas Eve/Day, Hanukah, New Year's Eve/Day, 4th of July, Halloween, etc.). Christmas lighting may begin the day after Thanksgiving and should end by 2 January.

f. The lighting levels specified in Table 2 represent the range for which individual light levels should be met during occupied periods and are guidelines established by the Illuminating Engineering Society (IES). The average light levels within the occupied space and during unoccupied hours would be expected to be significantly less than the lighting levels shown in Table 2. When designing a modification to or new installation of lighting, the listed minimum level shall be considered as the design maximum. Any special lighting level requirements shall be resolved by the individual unit through coordination with the Base Energy Manager (Energy and Utilities Management, 718 CES/CEAOE). Additional exceptions will be considered on a case-by-case basis and supported by an approved waiver.

Table 2 Lighting Levels.

IES Recommended Luminance Values		
Area/Activity	Foot-Candles	Lux
Classrooms	20 – 50	215 – 538
Conference Rooms	20 – 50	215 – 538
Food Service Area	10 – 50	107 – 538
General Aircraft Maintenance Area	50 – 75	528 – 807
Hallways	10 – 20	107 – 215
Maintenance Areas	20 – 50	215 – 538

Offices, General	20 – 50	215 – 538
Rest Rooms	20 – 50	215 – 538
Retail Spaces	10 – 50	107 – 538
Service Areas	30 – 50	322 – 538
Shop Areas	30 – 50	322 – 538
Storage Areas	5 – 20	53 - 215
Warehouse/Active	20 – 50	215 – 538
Warehouse/Inactive	5 – 10	53 – 107

7. Water Conservation

- a. Watering lawns is typically not necessary. Newly sodded or seeded areas can be watered until the grass takes hold. The indigenous grass is hardy for this climate and will regenerate itself. During periods of water use restrictions, watering of lawns will be prohibited.
- b. Water hoses must have an automatic shutoff nozzle (water sprayer).
- c. Report leaks immediately to the 18 CES Service Desk (634-2424/4600).
- d. Residents are not authorized to wash vehicle engines or use degreasers in MFH or dormitories due to the absence of basins to catch oils/lubricants. Residents should use the car wash near the gas station which recycles water and has basins to capture the oils/lubricants. Washing of vehicles is authorized if nozzled hoses are used and no more water is expended than a typical shower.
- e. Fundraisers are authorized, but require approval from Environmental Office, 718 CES/CEAN, 634-2600, due to drought-influenced water conservation measures.

8. Enforcement:

- a. Housing inspectors shall monitor residences accordingly and provide feedback to residents whose actions are not in compliance. Similar to other MFH guidelines, a copy of a second infraction will also be sent to the squadron commander. Further infractions will be reviewed at group and wing level, along with recommendations for additional actions, as appropriate. Infractions in O&M facilities will be reported to the owning squadron commander for correction.
- b. Facility Managers are required to maintain an aggressive energy and water conservation program within their assigned building(s). Facility Managers shall ensure effective use of utilities in their building(s) by:
 - Eliminating unnecessary lighting.
 - Establishing conservation measures including turning off lights, office equipment, and computer equipment, such as monitors and printers, during unoccupied hours.

- Encouraging facility users to keep windows and doors shut while cooling/heating units are running.
- Working with 718 CES/CEAOE to keep facility temperatures in compliance with current guidelines.
- Ensuring no space heater or portable air conditioning units are in use except in emergency situations.
- Reporting all water leaks, running toilets/faucets/showers immediately to the 18 CES Service Desk and ensuring the problem is resolved within a timely manner.
- Promote energy awareness by placing signs, posters, etc. in recognizable areas. Posters are available from 718 CES/CEA by calling 634-2461 or 634-2600.

9. Waiver Request

9.1 Permanent waivers apply to facilities that are not excluded from this policy per paragraphs 2a, 3a or 5a and are required when any of the following conditions apply:

- A/C or heat is needed during periods of seasonal shutoff.
- A/C or heat is needed during periods of daily shutoff.
- Deviations from recommended temperature settings from Table 1.
- Hot water is needed.
- Any other HVAC or water-related situation that deviates from this policy letter.

- a. Initial waiver will be submitted via request letter signed by the unit, squadron, or area commander with complete justification and documentation for the waiver. Requests shall include copies of the standards, regulations or instructions which justify an exception to policy.
- b. In most cases, an initial waiver submittal usually warrants a facility energy inspection to assess its validity.
- c. Waiver requests are attached with a letter of recommendation from the 718 CES/CEAOE, and routed to the 18th Civil Engineer Group Deputy, 18 CEG/CD, for decision.
- d. Approved waivers are in effect for two years or until a facility or mission change occurs, whichever comes first. It is the responsibility of the Facility Manager to ensure current waiver validity.
- e. At the two-year waiver assessment period, approval and continued use of the existing waiver will be determined by the 718 CES/CEAOE. A re-submittal of documentation will not be required, providing that there has been no change in mission or facility use.

9.2 Temporary waivers provide temporary change in policy to support intermittent training and/or official functions.

- a. Waiver request shall be submitted to 718 CES/CEAOE with details of the training and/or official function, the specific HVAC and/or water requirements, the duration and a POC.

- b. If the intermittent training or official function is on a fixed schedule, coordination with 718 CES/CEAOE is recommended in order to expedite the temporary waiver process.
- c. Temporary waivers are only valid for the duration approved in the submittal.

Smart and Easy Ways to Improve Your Quality of Life

Awareness and personal integrity are keys when it comes to energy and water conservation. Individual efforts combined together with the efforts of others strengthen our ability to shift funding to other needed projects, which improve the quality of life and keep us from more stringent limitations on water and energy use such as rationing.

1. “Turn Stuff OFF” (TSO). Anything that consumes electricity also produces heat. TSO is the smart easy way to improve the comfort of your home or office. Turn off appliances, televisions, lights, air conditioners, fans, computers, and other electronics when not in use.
2. Avoid eye strain and improve the comfort of your home by using task lighting instead of overhead room lights.
3. Replacing existing standard light-bulbs with compact fluorescent lights (CFL) improves your quality of life and makes your home cooler because the operational temperature of a standard light-bulb is about 450° F while CFLs are about 115° F. The light output from CFLs is more closely aligned to natural sunlight than ordinary light-bulbs and CFLs last about 7-10 times longer.
4. Installing motion/occupancy detectors indoors and outdoors make your home safer and more secure, but don't use CFLs with them unless recommended by the manufacturer.
5. Using air circulation fans year-round is a smart and easy way to improve your comfort and reduce mildew formation in your home. Ceiling fans should blow down in summer and up in winter. Air circulation reduces moisture on surfaces and discourages mildew formation. Keep fan blades clean because dirty fan blades severely restrict air circulation. Even a small amount of dust build-up can significantly reduce air flow.
6. Setting your thermostat in accordance with installation policy will reduce mildew formation during the summer and discourage dry, flaky skin formation in winter.
7. A smart easy way to make your home cooler is to avoid cooking and doing laundry during the hottest times of the day (1200 to 1600).
8. When doing laundry, open a window in the laundry room and close the laundry room door because your clothes dryer is like a huge fan that sucks all the cold air out of your home. Alternatively, opening the window nearest to your dryer, while drying clothes, will make rest of your home more comfortable.
9. Drying consecutive loads helps clothes dry faster because the dryer is already warmed up from the previous load.
10. Cook more on your BBQ and keep the heat outside where it belongs!
11. Wash or replace air conditioning filters every 30 days to get more A/C and improve your indoor air quality.
12. EnergyStar® appliances and electronic equipment last longer, perform better and produce less heat than standard equipment. EnergyStar® ratings are given to refrigerators, dishwashers, washing machines, lighting fixtures, ceiling fans, telephones, televisions, DVD and VCR players, audio equipment, computers, etc. Product listings and energy savings calculators are available on-line at www.energystar.gov.

13. Use cookware with a flat bottom that is sized for your stove's burner element. When possible, cover cookware and use the steam inside to cook food quicker. Turn down heat when food reaches proper cooking temperature and use the lowest possible heat to maintain temperature. Turn surface unit or oven off a few minutes before cooking is completed, allowing retained heat to finish the cooking. Use pressure cookers, toaster ovens, microwaves, or crock pots instead of large ovens when possible. Also limit opening the oven while cooking or baking to make your home more comfortable and speed up cooking times.

14. Cleaning your refrigerator coil at least twice a year will make the refrigerator more efficient and make your home more comfortable. Special brushes are sold to reach the coils that are located at the bottom and the rear of the refrigerator. Also, inspect the door seals for proper closure; if cracked or torn, they should be replaced. Empty and clean the drain pan periodically to prevent mildew build-up and to keep your home smelling fresh.

15. Additional tips to keep your home cooler and improve quality of life:

- a. Use a power strip to conveniently turn off computers (after properly logging off), cameras and cellular phone chargers. All of these items use standby power when not in use that makes your home hotter.
- b. Keep the heat outside, seal doorways and windows to prevent infiltration.
- c. Washing clothes in cold water makes more hot water available for showers.
- d. Taking warm showers instead of baths makes more hot water available for other family members and wingmen. Hot-steamy showers promote mildew growth and remove essential skin oils which can cause premature aging of skin.
- e. Turn off the water while brushing your teeth or shaving. An open faucet wastes at least 2 gallons of water every minute.
- f. Heat and humidity are added to your home every time you wash dishes or clothes. You will be more comfortable and there will be less humidity within the home if you wash only full loads in your washing machine and dishwasher.
- g. Turn off the heated drying feature on your dishwasher because it puts more heat in your home. Your home will be cooler if you air dry dishes.
- h. Don't use the toilet as a wastebasket or ashtray. The toilet can be the biggest water user in the home, taking up to 5 gallons of water to flush. Also, use a broom instead of a water hose to clean off sidewalks, driveways, patios, and parking areas.



DEPARTMENT OF THE AIR FORCE
PACIFIC AIR FORCES

Mmm YY

MEMORANDUM FOR 18 CEG/CD

FROM: 18 UNIT/CC

SUBJECT: Exception to Policy (Waiver) for [REASON]

1. Facility Number:

2. Justification:

a. Significant justification for “mission-essential equipment or supplies” must be provided and directive documents must be attached or waiver request may be denied. Human comfort is not sufficient justification.

b. Attachment of secondary documentation is highly recommended.

c. Physical restrictions of the facility (e.g. no windows, secure facility, etc) provide additional justification.

3. Is this an initial request or a re-justification of an existing waiver already on file?

4. If you have any questions, please contact [Title] [Name] at xxx-xxxx.

NAME, RANK, USAF
Commander, 18th xxxxx Squadron

2 Attachments:

1. Attachment #1 Title

2. Attachment #2 Title



**DEPARTMENT OF THE AIR FORCE
PACIFIC AIR FORCES**

Mmm YY

MEMORANDUM FOR 18 CEG/CD

FROM: 18 UNIT/CC

SUBJECT: TEMPORARY Exception to Policy (Waiver) for [REASON]

1. Facility Number:
2. Justification:
 - a. Details of mission-related training and/or official function.
 - b. Air conditioning requirements.
 - c. Duration (Dates and times)
 - d. Point of Contact
3. Is this intermittent function on a fixed schedule, or scheduled regularly?
4. If you have any questions, please contact [Title] [Name] at xxx-xxxx.

NAME, RANK, USAF
Commander, 18th xxxxx Squadron