UNITED STATES MARINE CORPS
HEADQUARTERS MARINE CORPS AIR STATION MIRAMAR
PO BOX 452000
SAN DIEGO CA 92145-2000

StaO 11300.2
G-4
1 DEC 1999

Station Order 11300.2

From: Commanding General
To: Distribution List

Subj: ENERGY CONSERVATION PROGRAM

Ref: (a) Executive Order 12902, Energy Efficiency and Water Conservation at Federal Facilities
(b) Navy Energy Manager's Handbook
(c) MCO P11000.9C, Facilities Projects Manual
(d) Station Order 11014.2, Building Manager Program

Encl: (1) Energy Conservation Checklist

1. Purpose. To define the duties and responsibilities of personnel in the station and aircraft wing chains of command in implementing Federal and Marine Corps Energy Conservation policies and goals.

2. Cancellation. StaO 11300

3. Information. Federal energy conservation policy was established by reference (a), which sets a goal of achieving at least a 30 percent energy reduction between FY85 and FY2005 at federal facilities.

4. Duties and Responsibilities

a. Chief of Staff: Per reference (b), the Chief of Staff shall chair the Utilities Conservation and Appraisal Board (UCAB) established by reference (c). The UCAB shall meet quarterly and perform the duties described in reference (c).

b. Assistant Chief of Staff (AC/S), G-4 Installation and Logistics (I & L): UCAB member.

c. Assistant Chief of Staff, G-8 Comptroller: UCAB member.

d. 3d MAW AC/S G-4: UCAB member.

e. Public Works Officer (PWO): UCAB member who acts on behalf of the Commanding General to coordinate the implementation and enforcement of Station policies and regulations. The PWO is designated as the Station's Energy Conservation Officer and shall establish all energy conservation goals and be responsible for the overall energy conservation program. The PWO shall designate an Energy Conservation Manager.

f. Energy Conservation Manager: Coordinate all energy conservation matters with direction and guidance from the PWO, and perform the following duties:

(1) Non-voting member of UCAB.

(2) Develop a five-year plan for programming energy conservation studies, repair, and construction projects.

(3) Promote energy awareness by making training presentations at building monitor meetings, writing articles for the station newspaper, establishing an energy conservation booth at public events, and distributing energy related information.

(4) Develop and implement plans to reduce energy consumption and utility costs.

(5) Program energy surveys and audits.

(6) Forecast and track utility consumption and costs. Verify the accuracy of utility bills.

(7) Review facility repair and new construction project submittals (plans, specifications and calculations) to ensure that the designs address the items identified in enclosure (1).

g. G-4 I & L Department; Public Works Division: Public Works Center; and Southwest Division, Naval Facilities Engineering Command personnel engaged in design review of plans and specifications for MCAS Miramar facility projects shall be responsible for ensuring that the applicable items identified in enclosure (1) are incorporated into the plans and specifications.

h. Squadron Commanding Officers, Officers-in-Charge, and Department Heads: Appoint Building Managers per reference (d).

i. Building Managers: Responsible for the implementation of energy conservation measures within assigned buildings as follows:

(1) Ensure reasonable conservation practices are implemented and make building spot checks to identify energy saving opportunities. Enclosure (1) is provided to assist in the accomplishment of this task.

(2) Establish, with the cooperation of supervisors or department heads, which equipment can be turned off during peak electrical demand periods.

(3) Become generally familiar with the building environmental systems, such as boilers, furnaces, air handlers, heat pumps, and chillers.

(4) Distribute energy conservation articles, newsletters, and pamphlets. Post pertinent energy information on official bulletin boards and conservation reminders on light switches or in the vicinity of major energy consuming equipment.

(5) Recommend personnel for awards as a result of their energy conservation efforts.

(6) Attend quarterly energy conservation meetings initiated by the Energy Conservation Manager in conjunction with the regularly scheduled Building Monitor meetings.

(7) Initiate service calls for energy waste caused by malfunctioning or improperly used equipment.

(8) Initiate work requests for new energy conservation projects.

(9) Educate new personnel about energy conservation techniques and policies particular to their work environment.

(10) Ensure that unneeded lights and equipment are turned off and that windows and doors are closed during heating and cooling periods.

(11) Become familiar with the Public Works Center replacement schedules for air filters in furnaces, air conditioners, heat pumps and central station air handlers. If it appears that replacement of the air filters has been neglected for a substantial period of time, call the Public Works Division Trouble Desk at extension 7-1609.

(12) Contact the Energy Conservation Manager at extension 7-1107, regarding any energy/utility problems or questions.

j. Provost Marshal's Office: During late night patrols, look for lights that are left on in administrative buildings or buildings that should not be occupied at that time of night. Report these incidents to the Command Duty Officer (CDO) who shall notify the appropriate facility OD/supervisor to immediately secure the lighting. During daylight patrols, look for street and parking lot lights that are left on and report these to the Energy

Conservation Manager, at extension 7-1107. The photocells that usually control street and parking lot lights sometimes malfunction and fail to turn the lights off.

k. Joint Public Affairs Office: Include energy conservation articles in the "Flight Jacket" with the assistance of the Station's Energy Conservation Manager.

l. Unit Duty Officers: Incorporate inspections for energy waste into operating procedures and directives for standing watch.

m. All Station and Aircraft Wing personnel:

(1) Turn off lights in unoccupied rooms or areas of a building.

(2) Do not reset or tamper with thermostats without the permission of the Building Monitor.

(3) Keep windows and exterior doors closed when building heating or cooling systems are in operation.

(4) Do not use any portable electric heaters unless authorized by the PWO.

(5) Do not install window air conditioners unless authorized by the PWO.

(6) Do not use electric hot plates for heating food or liquids. Microwave ovens are permissible.

(7) Secure computers, office and shop equipment when not in use.

(8) Report exterior lighting left on during daylight hours to the Building Monitor.

(9) Report water or compressed air leaks to the Building Monitor.

(10) Report flooding caused by landscape irrigation systems being left on to the Building Monitor.

(11) Report damaged insulation, window, or door seals to the Building Monitor.

(12) Defrost refrigerators on a regular basis.

(13) During the summer months (1 May - 30 Sept) attempt to schedule the use of industrial electrical equipment such as air compressors, motor generator sets, pumps, and exhaust fans during the morning (before 1100) or early evening (after 1800) hours.

(14) Avoid using fresh water to hose down streets, driveways, patios, parking lots, and buildings.

5. Concurrence. The Commanding General of the 3rd Marine Aircraft Wing and the Commanding Officer of Marine Aircraft Group 46 concur in the provisions of this order.

T. A. CAUGHLAN
Chief of Staff

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ENERGY CONSERVATION CHECKLIST

DESIGN CONSIDERATIONS FOR ENERGY CONSERVATION MANAGER AND PERSONNEL ENGAGED IN DESIGN REVIEW OF PLANS AND SPECIFICATIONS:

1. BUILDING ENVELOPE:

a. Windows that open so that ventilation can be provided if the building air conditioning is shut off because of scheduled or emergency electrical load shedding.

b. Weatherstripping for doors and windows.

c. Insulation for roof and walls.

d. Double glass window frames.

e. Solar film on windows.

f. Window shading by using structural additions, drapes, blinds or planting trees in front of windows.

g. Automatic door closers or revolving doors when practical.

h. Air curtains when practical.

i. An entrance vestibule when practical.

j. Suspended ceilings when roof is higher than ten feet.

k. Reflective roof coatings.

l. Swimming pool covers.

2. HEATING:

a. Programmable time clocks or thermostats

b. Variable speed fans and hot water pumps.

c. Automatic adjustment of hot water temperature based on outside air temperature.

d. Solar water heating when practical.

e. Insulate piping and air ducts.

ENCLOSURE (1)

f. Avoid heating using electric furnaces or domestic hot water heaters.

g. Automatic flue gas analyzing equipment on boilers.

h. Automatic blowdown controls on boilers.

i. Preheat boiler feedwater using solar heating or waste heat from other sources such as cooling water from emergency generator engines, hydraulic pumps, air and refrigeration compressors.

j. For boiler combustion air use preheated air by using exhaust air from air handlers or air from the conditioned space.

k. Radiant gas heating in shop or high bay areas.

3. COOLING:

a. Programmable time clocks or thermostats with night set back.

b. Variable speed fans and chilled water pumps.

c. Automatically adjust chilled water temperature based on outside air temperature.

d. Consider using natural gas powered chillers over electrically driven chillers.

e. Consider using geothermal heat pumps at locations were there is a high water table, there are large irrigated areas like ball fields and parks, and residential housing areas where the landscaping is regularly watered.

f. Consider using water cooled chillers instead of air cooled chillers when a large tonnage of refrigeration is required or when a number of smaller chillers serving different buildings can be fed from a centralized cooling tower. Also consider the applicability of thermal energy storage systems for the installation if electrically driven chillers are used to offset peak electrical demand.

g. Consider using water cooled air conditioners or heat pumps when a large number units can be connected to a centralized cooling tower.

h. In buildings with significant internal heat loads from lighting, computers, or office equipment, install economizer air damper controls to take advantage of the cooling provided by outside air.

4. LIGHTING:

a. Control interior lighting using occupancy sensors where practical.

b. Use natural light whenever possible by installing skylights. Install lighting controls using photocells or electronic dimming to automatically reduce lighting in areas with sufficient natural lighting.

c. Use photocells or programmable time clocks to control exterior lighting.

d. Use high pressure sodium lighting for exterior or hangar bay lights.

e. Replace interior incandescent lighting with fluorescent lights.

f. Replace T-12 fluorescent lights and magnetic ballasts with T-8 lights and electronic ballasts in existing light fixtures.

g. Maintain the following lighting intensity levels suggested by the Illuminating Engineering Society (IES):

AREA	INTENSITY (FT. CANDLES)
Cafeterias	25
Classrooms	70
Computer Rooms	50
Conference Rooms	30
Corridors	15
Drafting	75
General Office Areas	50
High Bay Hangars	30
Mechanical Rooms	15
Parking Lots	0.5
Emergency Lighting	0.1
Rest Rooms	20
Stairways	20
Shops (Maintenance)	50
Shops (Testing)	70
Warehouse	10

5. EQUIPMENT:

a. Use reciprocating or centrifugal air compressors instead of the screw type.

b. Replace 400 Hz motor generator sets with solid state inverters.

c. Use pressure modulated variable speed aircraft refueling pumps instead of constant speed pumps with relief valve pressure modulation. NAVFAC design approval is required for all aircraft refueling system renovations or new installations.

6. WATER CONSERVATION:

a. The installation of water consuming equipment and plumbing fixtures shall be in compliance with MIL. HANDBOOK 1165, "Water Conservation."

b. Use drought resistant plants for landscaping. Landscape designs shall be in compliance with MIL. HANDBOOK 1165, "Water Conservation, Use of Low Water Demand Plants."

c. Maximize the use of decorative rock in landscape designs.

d. Irrigation systems shall equipped with time clocks and moisture sensors.

e. Consider drip type irrigation systems.

f. Once-through water cooling systems are prohibited.

g. Consider waterless urinals.

INSPECTIONS PERFORMED BY BUILDING MONITORS:

1. BUILDING ENVELOPE:

a. Periodically check door and window weatherstripping. Submit work requests for damaged weatherstripping.

b. Periodically inspect the operation of doors and windows to insure that they completely close. Submit work requests if repairs are required.

c. Periodically inspect interior ceilings for water damage caused from a leaking roof or piping. Submit work requests if repairs are required.

2. HEATING:

a. As suggested by OPNAV Instruction 4100.5 and NAVFAC Instruction 11300.37, room heating thermostats are to be adjusted as follows:

TYPE OF SPACE	TEMPERATURE (DEG F)
BOQ	70
Administrative Spaces	70
Navy Lodges	70
Family Housing	70
Laboratories	55
Shops	55
Warehouses	55
Exchanges	70

b. Periodically check room thermostats and time clocks controlling heating equipment to ensure proper settings.

c. Submit work requests for lockable thermostat covers to prevent tampering.

d. Periodically inspect mechanical equipment rooms for leaking piping, domestic water heaters and boilers. Submit work requests if repairs are required.

3. COOLING:

a. As suggested by OPNAV Instruction 4100.5 and NAVFAC Instruction 11300.37 room air conditioning thermostats are to be adjusted as follows:

TYPE OF SPACE	TEMPERATURE (DEG F)
BOQ	76
Administrative Spaces	76
Navy Lodges	76
Family Housing	76
Exchanges	70

b. Periodically check room thermostats and time clocks controlling cooling equipment to ensure proper settings.

c. Periodically inspect cooling towers for leakage or overflowing caused from improperly adjusted float valves or buildup of hard water deposits. Submit work requests if repairs are required. Inspect the towers from ground level, do not attempt to climb on to the cooling tower.

4. LIGHTING:

a. Periodically inspect exterior lighting during daylight to ensure that photocells or time clocks are functioning properly by turning off the lights.

5. EQUIPMENT:

a. Periodically inspect compressed air piping for leaks. Submit work requests if repairs are required.

6. WATER CONSERVATION:

a. Periodically inspect for leaking underground water piping and excessive runoff from landscape irrigation sprinklers. Notify PWO about excessive irrigation runoff and submit work requests for pipe leaks.