DEPARTMENT OF THE NAVY
COMMANDER, FLEET ACTIVITIES, YOKOSUKA
PSC 473 BOX 1
FPO AP 96349-0001

COMFLEACTINST 11300.2G
N4
DEC 1 2011

COMFLEACT YOKOSUKA INSTRUCTION 11300.2G

From: Commander, Fleet Activities, Yokosuka

Subj: ENERGY MANAGEMENT PROGRAM

Ref: (a) Energy Policy Act of 2005
(b) Energy Independence and Security Act (EISA) of 2007
(c) Executive Order 13423 of 24 Jan 07, Strengthening Federal Environmental, Energy, and Transportation Management
(d) Executive Order 13514 of 5 Oct 09, Federal Leadership in Environmental, Energy, and Economic Performance
(e) OPNAVINST 4100.5D
(f) COMNAVFORJAPANINST 4101.2B
(g) UFC 4-030-01 "Sustainable Development", 21 Dec 07

Encl: (1) Energy Goals for the Navy
(2) Energy Definitions
(3) Energy Project Guidelines
(4) Conservation Projects
(5) Heating and Cooling
(6) Building Energy Monitors
(7) Demerit Guidelines

1. Purpose. To provide policy, responsibilities and procedures for effective implementation of the Navy Energy and Water Conservation Program at Commander, Fleet Activities (COMFLEACT), Yokosuka, as mandated in references (a) through (g) and enclosures (1) through (7).

2. Cancellations. COMFLEACTINST 11300.2F.

3. Scope. This instruction applies to all personnel located aboard COMFLEACT, Yokosuka. This instruction is designed to promote utilities conservation and complement references (e) and (f).

4. Background. The federal government is the nation's largest single energy consumer. Since the mid 1970's, Congress and the Executive Branch have developed several programs to improve energy efficiency in federal facilities. Improving energy

efficiency has many benefits, both for the Navy and for the nation. A comprehensive program and conservation through efficient energy use is necessary to reduce consumption. As resources become more limited, the Navy must continue to save energy.

5. Policy. To support the conservation goals of the Navy, COMFLEACT, Yokosuka has the ongoing responsibility of minimizing energy and water consumption where practical, without compromising military readiness, mission objectives, and safety. References to energy and energy projects in this instruction also refer to water conservation and water projects, unless specifically stated otherwise.

6. Goals. The overall goal is to reduce energy consumption by means of conservation and efficiency. Reference (e) establishes Navy wide conservation goals for shore facilities. Where practical, these goals should be used as guides for daily operations and maintenance at COMFLEACT, Yokosuka.

7. Duties and Responsibilities

a. The Installation Commander is responsible for implementing and enforcing COMFLEACT, Yokosuka's Energy Conservation Program.

b. Fleet Activities (FLEACT), Yokosuka Public Works Officer (PWO) will keep the Commander advised of all energy conservation matters, and steps taken to ensure that COMFLEACT, Yokosuka makes progress toward meeting mandated energy goals.

c. FLEACT, Yokosuka PWD Energy Manager will act as the technical advisor on energy conservation matters and will:

(1) Create and administer COMFLEACT, Yokosuka's Energy Conservation Program and drive program planning and strategy to align the installation with federal energy mandates (references (a) through (d)) and Navy energy goals.

(2) Coordinate with tenant commands for implementation of energy conservation projects and measures within their facilities.

(3) Review utilities consumption reports to identify major consumers, track usage and demand trends, monitor progress toward energy goals, and identify high value targets for energy projects.

(4) Review energy conservation suggestions from Building Energy Monitors (BEM).

(5) Coordinate, promote, and participate in "Energy Awareness Week".

(6) Make recommendations to the Commander when the heating and cooling seasons will begin and end for all tenant commands at COMFLEACT, Yokosuka.

c. The BEM will:

(1) Monitor assigned areas or facilities for energy conservation measures and opportunities.

(2) Be responsible for the effective day to day execution of the energy conservation measures.

(3) Report and track violations of prescribed energy policy.

d. Tenant commands will follow energy user responsibilities and expectations.

D. A. OWEN

Distribution:
COMFLEACTINST 5215.2K
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ENERGY GOALS FOR THE NAVY

The below table summarizes the major energy goals for the Navy with the corresponding reference.

Goal	Requirement	Reference
Energy Reduction	3% reduction in energy intensity (MBTU/kSF) relative to a FY2003 baseline through FY2015 leading to an overall 30% reduction.	Energy Independence and Security Act of 2007
	All new construction and renovations >$2.5M require a reduction in fossil fuel usage by 55% in FY2010 and 100% by FY2030.	
Water Reduction	2% reduction in water intensity (kGal/kSF) relative to a FY2007 baseline through FY2020 leading to an overall 26% reduction.	Executive Order 13514
Renewable Energy	3% of electrical consumption comes from renewable sources in FY2007 - FY2009.	Energy Policy Act of 2005
	5% of electrical consumption comes from renewable sources in FY2010 - FY2012.	
	7.5% of electrical consumption comes from renewable sources by FY2013.	
	25% of electrical consumption comes from renewable sources in FY2025 and thereafter.	National Defense Authorization Act of 2007
Sustainable Design	15% of existing facilities must meet the criteria of the Federal Leadership in High Performance and Sustainable Buildings by FY2015. (Secretary of the Navy may exempt overseas installations).	Executive Order 13514
	Buildings must be designed to 30% below the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) standard, Application of Sustainable Design Principles.	Energy Policy Act of 2005
	Leadership in Energy and Environmental Design (LEED) Silver certification on all Military Constructions for FY2009 and beyond.	Department of Defense Policy
Metering	Install advanced meters on all facilities with an annual electric bill of $20K or greater.	Department of Defense Policy
	Natural gas and steam metering must be installed on facilities.	Energy Independence and Security Act of 2007
	Electric metering with hourly measurement required on all federal buildings end of 2012 (where practicable).	Energy Policy Act of 2005
Energy Efficient Product Purchase	Procure Energy Star and Federal Energy Management Program recommended electronic products and equipment.	Executive Order 13514

ENERGY DEFINITIONS

Energy Conservation Project: Energy Conservation projects must save energy (electricity or fuel oil).

Water Conservation Project: Water conservation projects must conserve water that is already being consumed.

Life Cycle Cost Analysis (LCCA): An LCCA considers the cost of product versus the energy savings over the course of the life of a product.

Simple Pay-back: This is the basic calculation of the amount of time that a project will pay for itself, without discounting for the time-value of money, or estimated escalation of utility rates. (Simple Pay-back = cost of project/annual cost savings at current year utility rate)

Savings to Investment Ratio (SIR): The SIR uses the time value of money to determine a rating of how quickly the Navy will realize return on investment for an energy conservation measure.

Energy Efficiency: Refers to the ratio of energy input compared with the effective energy output as a percentage.

Energy - Return on Investment (E-ROI): A Navy developed spreadsheet analysis tool used to evaluate a project's value in terms of energy conservation.

E-ROI score: The resultant value of an e-ROI spreadsheet analysis considering many weighted factors.

Energy Conservation Improvement Program (ECIP): Energy Program approved by Congress that funds renewable projects.

Cooling Season: Period during which air-conditioning is authorized for use at Commander, Fleet Activities (COMFLEACT), Yokosuka.

Heating Season: Period during which heating equipment is authorized for use at COMFLEACT, Yokosuka.

Space Heater: Plug-in equipment that uses electrical resistance elements to generate heat.

Building Energy Monitor: Person designated as the responsible person for inspection and monitoring of a specific facility for compliance with COMFLEACT, Yokosuka Energy Management Program.

Energy Manager: Member of Fleet Activities (FLEACT), Yokosuka Public Works Department (PWD) Energy team that develops and manages the COMFLEACT, Yokosuka Energy Management Program.

COMFLEACT, Yokosuka Energy Management Project Developer: Member of FLEACT, Yokosuka PWD Energy team that develops and manages energy projects.

Energy Demerits: Chits (forms) recognizing a COMFLEACT, Yokosuka energy policy infraction/violation that is assigned a point value.

ENERGY PROJECT GUIDELINES

1. For a project to receive energy funding consideration it must be submitted via Fleet Activities (FLEACT), Yokosuka Public Works Department (PWD) Energy Project Developer or FLEACT, Yokosuka PWD Energy Manager. These individuals will analyze the project's energy savings estimates and costs benefits for accuracy and validity. It is important to work with either FLEACT, Yokosuka PWD Energy Project Developer or Energy Manager at an early stage of project development as both are the installation subject matter experts on energy conservation projects.

2. An energy conservation project must save energy and should be financially advantageous to the Navy. The installation of technologically advanced equipment may conserve energy, but the project will not be implemented if the overall project economics yield a Savings to Investment Ratio less than 1.0 in accordance with reference (e).

3. Projects that save money are not considered energy conservation projects unless those projects also reduce consumed energy as per reference (e).

4. Project energy savings must be in terms of the source energy that is purchased by the government.

5. Every energy conservation project that is to be considered for government funding shall have a Life Cycle Cost Analysis (LCCA).

6. FLEACT, Yokosuka PWD Energy Manager reviews all assumptions and LCCA analyses to ensure that Energy Project Execution Guidelines (developed by Naval Facilities Engineering Service Center) were followed. After the initial design and check of energy projects, they will then be added to the installation energy project list. The energy project list will be reviewed and approved periodically by the Public Works Officer.

7. Following project approval, a funding source for the energy project will be identified and used for project execution.

CONSERVATION PROJECTS

1. Energy Conservation Projects

a. Building lighting retrofit: Replace existing inefficient lighting fixtures (incandescent, T-12 with magnetic ballast, mercury vapor) with energy efficient type (compact fluorescent, Light Emitting Diode, T-8 with electronic ballast, T-5, or induction lamps).

b. Double Pane Windows: Replace single pane windows with force protection tinted double pane windows with thermal breaks.

c. Replace standard efficiency motors greater than 1 horsepower (0.746 kW) with high efficiency motors.

d. Install occupancy sensor controls for lighting.

e. Temperature setback controls for Heating, Ventilation, and Air Conditioning (HVAC) systems.

f. Reducing the amount of light fixtures in over-lit areas.

g. Increasing thermal resistance of walls and roofs (insulation).

h. Installation of variable frequency drives on variable speed equipment.

2. Water Conservation Projects

a. Water conservation projects must save water that is currently being wasted. Water conservation projects have the same funding considerations as energy conservation projects:

(1) Install lower-flow water faucet/fixtures (sinks, shower heads, spigots).

(2) Using harvested rainwater for cooling tower make-up water, flushing toilets, and irrigation.

(3) Discovery and repair of water leaks.

3. Renewable Energy Projects:

b. Renewable energy projects are typically funded by the Energy Conservation Improvement Program (ECIP). Renewable energy projects approved by the Energy Manager will be reviewed

by the Region and forwarded to Naval Facilities Engineering Service Center for ECIP funding. Examples of renewable energy projects include:

(1) Photovoltaic panel projects.

(2) Wind turbine projects.

(3) Solar thermal projects.

(4) Biomass and refuse-derived fuel projects.

HEATING AND COOLING

1. Cooling Season

a. The start of the cooling season is identified by Fleet Activities (FLEACT), Yokosuka Public Works Department (PWD) Energy Manager. FLEACT, Yokosuka PWD Energy Manager will monitor the daily high and low temperatures. When a daily high temperature of 78°F (25.5°C) and rising is observed, FLEACT, Yokosuka PWD Energy Manager will make the recommendation to the Commander, Fleet Activities (COMFLEACT), Yokosuka to authorize the use of air conditioning at COMFLEACT, Yokosuka. Until the schedule is approved by COMFLEACT, Yokosuka, air conditioners are to remain turned off.

b. Some housing units have the ability to turn on air conditioning units before the official designation of the cooling season. This is not authorized.

c. Certain facilities that have unique cooling requirements due to sensitive equipment and specific building overheating issues may apply for waivers. Until the waiver is approved, the activity is not authorized to use their air conditioning equipment.

d. Once the start of the cooling season has been announced, the following order of precedence shall be followed for the turn on of the air conditioning units:

(1) **First tier: Living areas** (family housing, barracks, lodging facilities, Child Development Centers (CDCs) and schools).

(2) **Second tier: Common areas** (retail stores, clubs, gyms, movie theatres, etc.).

(3) **Third tier: Office areas** (general offices and administrative areas).

(4) **Fourth tier: Industrial** (warehouses and industrial shops).

e. When air conditioning equipment is put into use, it is the responsibility of the occupants to ensure that the correct temperature set points are followed. It is COMFLEACT, Yokosuka policy that during the cooling season the thermostats shall be set no lower than 78°F (25.5°C). If your Japanese thermostat is

not capable of being set to half degree increments than it shall be set to 26°C. Occupants of a space not adhering to the 78°F (25.5°C/26°C) policy will be issued demerits.

f. When air conditioning units are in use, all openings to the outside shall be secured. Do not leave doors or windows open in air conditioned spaces. This will lead to mold issues and wastes energy.

g. If the air conditioning unit/system is not functioning properly, do not set it to a lower temperature. Contact your facility manager so they can inform the Public Works Department of the situation. Public Works will send over qualified personnel to evaluate your air conditioning unit/system to confirm whether your air conditioning unit/system is functioning properly. If Public Works determines that the unit/system is not functioning properly they will initiate a work request to fix the situation. At that time they may direct you to set the thermostat temperature to a lower setting than the COMFLEACT, Yokosuka policy.

h. As summer heat decreases, and daily high temperatures of 78°F (25.5°C) and falling are observed, the Energy Manager will make the recommendation to COMFLEACT, Yokosuka to end the cooling season at COMFLEACT, Yokosuka. After approval of the schedule by COMFLEACT, Yokosuka to end cooling season, air conditioners should remain off.

i. Some housing units have the ability to turn on air conditioning units outside of the officially designated cooling season. This is not authorized.

j. Certain facilities that have unique cooling requirements may apply for a waiver to run their air conditioning equipment. Until the waiver is approved, the activity is not authorized to use the air conditioning equipment. Categories of facilities listed previously shall have air conditioning secured in the opposite order listed (i.e. start with fourth tier facilities).

2. Heating Season:

a. The start of the heating season is identified by FLEACT, Yokosuka PWD Energy Manager. FLEACT, Yokosuka PWD Energy Manager will monitor the daily high and low temperatures. When the average of daily high and low temperatures reaches a level of 63°F and falling, FLEACT, Yokosuka PWD Energy Manager will make the recommendation to COMFLEACT, Yokosuka to authorize

the use of heating equipment for the first and second tier facilities. Until that time, heating equipment should remain off.

b. Some housing units have the ability to turn on heating units before the official designation of the heating season. This is not authorized.

c. Third and fourth tier facilities will be authorized to begin heating season when the average of daily high and low temperature is observed by the Energy Manager to be 58°F and falling.

d. Once the start of the heating season has been announced the following order of precedence shall be followed:

(1) **First tier: Living areas** (family housing, barracks, lodging facilities, CDCs and schools).

(2) **Second tier: Common areas** (retail stores, clubs, gyms, movie theatres, etc.).

(3) **Third tier: Office areas** (general offices and administrative areas).

(4) **Fourth tier: Industrial** (warehouses and industrial shops).

e. When heating equipment is in use, it is the responsibility of the occupants of each space to ensure that the correct temperature set points are followed. It is COMFLEACT, Yokosuka policy that during the heating season thermostats shall be set no higher than 68°F (20°C). Occupants of a space not adhering to the 68°F (20°C) policy shall be issued demerits.

f. When heating units are in use, all openings to the outside shall be secured. Do not leave doors or windows open in heated spaces.

g. If the heating unit/system is not functioning properly, do not set it to a higher temperature. Contact your facility manager so they can inform FLEACT, Yokosuka PWD of the situation. Public Works will send over qualified personnel to evaluate your heating unit/system to confirm whether your heating unit/system is functioning properly. If Public Works determines that the unit/system is not functioning properly, they will initiate a work request to fix the situation. At that time they may direct you to set the thermostat temperature to a higher setting than COMFLEACT, Yokosuka policy.

h. As outdoor temperatures become more moderate with the following spring season approaching, and average daily highs and lows are 58°F and rising, the Energy Manager will make the recommendation to COMFLEACT, Yokosuka to end the heating season at COMFLEACT, Yokosuka. After approval of the schedule by COMFLEACT, Yokosuka to end the heating season, heating equipment should be secured, and remain off.

i. Some housing units have the ability to turn on heating units outside of the officially designated heating season. This is not authorized.

j. Categories of facilities listed above shall have heating equipment secured in the opposite order listed (starting with fourth tier facilities).

k. Should the average daily temperatures linger below 63°F, first and second tier facilities may remain in the heating season per the discretion of COMFLEACT, Yokosuka.

l. When daily average temperatures rise above 63°F, the Energy Manager will notify COMFLEACT, Yokosuka, who will then authorize FLEACT, Yokosuka PWD to secure heating in the first and second tier facilities.

3. Space Heaters:

a. Space heaters are not authorized for usage on board COMFLEACT, Yokosuka. Any person found possessing a space heater shall have it confiscated and be issued demerits. Space heaters are not only inefficient, they also pose a fire hazard.

BUILDING ENERGY MONITORS

1. Purpose of a Building Energy Monitor

a. The Navy has determined that having energy responsible personnel at each facility is essential to a successful energy management program. It is impossible for Fleet Activities (FLEACT), Yokosuka Public Works Department (PWD) Energy Manager and Energy Project Developer to know everything about the day to day operations of the large inventory of facilities at Commander, Fleet Activities (COMFLEACT), Yokosuka. For this reason the Building Energy Monitor (BEM) program was established. BEMs are valuable 'boots on the ground' personnel for each facility that can support a successful installation energy program. The BEM observes the daily operations within his facility and identifies energy conservation opportunities. The BEM will be responsible for deciding if there are possible energy conservation strategies to implement within their facilities. The BEM is responsible for informing the occupants of the facility of new base energy policies and reduction initiatives.

2. Designation as a BEM

a. Once identified by your command, the BEMs will receive a signed designation letter from FLEACT, Yokosuka PWD Energy Manager as the BEM for a specific facility. Commands will provide the designated BEM's name, phone number, and e-mail to FLEACT, Yokosuka PWD Energy Manager. BEMs would ideally be military or civilian individuals who work at the specified facility. FLEACT, Yokosuka PWD Energy Manager will add the newly designated BEMs to their roster for various tracking purposes (upcoming energy training, new energy policies, etc).

b. Upon designation as a BEM, FLEACT, Yokosuka PWD Energy Manager will direct the BEM to the required BEM training. The newly appointed BEM will complete the training and submit their signed certificate of completion to FLEACT, Yokosuka PWD Energy Manager. Refresher training will be conducted annually for all BEMs. It is imperative that BEMs are familiar with COMFLEACTINST 11300.2G and all policies defined within. Upon familiarization with this instruction, FLEACT, Yokosuka Energy Manager or Energy Project Developer will confirm that the new BEM is qualified to carry out his or her responsibilities. If a BEM is found to be unsatisfactory, FLEACT, Yokosuka PWD Energy Manager or Energy Project Developer will request replacement via the parent command.

3. Responsibilities of a BEM. BEMs are required to inspect their assigned facilities once a month at a minimum. BEMs shall check at random times of the day to detect any wasteful activity such as lights, computers, monitors, heating or air conditioning systems, or any other office or industrial equipment which has been left on and are not being used. During their inspections, BEMs are required to identify and correct energy policy discrepancies. The BEM has the authority to assign demerits to individuals for failure to adhere to the energy policy. The following is a checklist of some items that the BEM should monitor during their inspections:

BUILDING ENERGY MONITOR CHECKLIST	Y	N	# of Demerits
Lights turned off in vacant spaces.			
Thermostats set to the correct temperatures (78°F or higher during heating season, 68°F or lower during cooling season).			
Computers and monitors turned off in spaces not occupied (ie. Personnel on leave or Temporary Additional Duty).			
IF there is sufficient ambient light, are lights turned off in stairwells and hallways.			
Air conditioners/heaters turned off in unoccupied spaces.			
Windows and doors closed while air conditioning/ heating units are in operation.			
Are space heaters being used.			
Ensure all office equipment is turned off at the end of the day (copy machines, fax machines, desktop computers, monitors, and monitors).			
Exterior lights turned on during the day time hours.			
Any other noted discrepancies:			
Visit Mechanical Room and report maintenance issues to facility manager (noisy machinery, leaking pipes/equipment, broken belts, steam leaks, collapsed duct work, etc.).			

In addition BEMs will be required to attend the quarterly energy conservation board meetings to:

a. Explain how their facility is functioning in terms of energy efficiency.

b. Receive feedback from FLEACT, Yokosuka PWD Energy Manager on status of their facilities energy consumption.

c. Share energy conservation opportunities that they have identified/implemented at their facility.

d. Learn about changes in energy policy, new energy efficient technology available, and new energy initiatives.

e. Report energy violations.

f. Submit energy conservation concepts for funding/project development.

4. BEMs are responsible for tracking energy demerits assigned (template provided) to personnel. It is essential that BEMs retain a copy of each demerit issued. Below are the actions that follow after accumulation of a certain amount of demerits:

a. Twenty accumulated demerits require additional training from the Energy Manager or Energy Project Developer.

b. Sixty accumulated demerits require a meeting with the FLEACT, Yokosuka Chief Staff Officer to discuss non-compliant energy behavior patterns of the violator.

5. BEMs are responsible for managing special requirements that may be needed at their facilities. Heating and/or air conditioning 'early turn on' requests are usually the most common situations that will need to be addressed. If the BEM feels that the request is warranted, a waiver may be submitted for COMFLEACT, Yokosuka approval.

COMFLEACT, YOKOSUKA
WAIVER FOR AIR CONDITIONING AND HEATING REQUIREMENTS

Date: _____

Requesting Activity:

_____
(Command, Do Not Abbreviate)

Location: _____
(Building Number)

Building Monitor or Requestor Information

Name: _____

Telephone: _____ Email: _____

Justification for Approval:
(Completed by Requestor)

_____
_____
_____
_____
_____
_____
_____

Approval Chain:

Building Energy Monitor: _____ Date: _____ Yes/No

Energy Manager: _____ Date: _____ Yes/No

Public Works Officer: _____ Date: _____ Yes/No

Commanding Officer: _____ Date: _____ Approve/Disapprove

Comments:
(Completed by Building Energy Monitor/Energy Manager/Public Works Officer)

_____
_____
_____
_____
_____
_____
_____
_____
_____

Retain this slip for each specifically approved AC/Heating Unit and forward a copy to Building Energy Monitor/Energy Manager.

DEMERIT GUIDELINES

Failure to comply with the energy policies set forth in this instruction will result in the issuance of energy demerits. Demerits can be issued by Fleet Activities (FLEACT), Yokosuka Public Works Department (PWD) Energy Team (consisting of FLEACT, Yokosuka PWD Energy Manager, Project Developer, Building Energy Monitor) to a command or an individual. The following table delineates the associated point value of each demerit.

Demerit Description	Points
Using a space heater (includes confiscation of heater).	10
Failure to adhere to the official start of the cooling and heating seasons.	10
Leaving windows open, doors open when HVAC system is in operation.	5
Leaving the water running.	5
Failure to set correct temperature on thermostat.	3
Failure to turn off computer and monitor at the end of the day.	3
Leaving lights on in vacant space.	2
Exterior lights left on during the day.	2
Failure to turn off office equipment at the end of the day.	2
All other violations not captured.	1

Subsequent failures will result in additional demerits at twice the prior point value.

Demerit Assessment:

Accumulated Points	Action
20	Attend Commander, Fleet Activities, Yokosuka Energy Expectations and Responsibilities Brief.
60	Command representative escort member to meet with FLEACT, Yokosuka Chief Staff Officer to discuss non-compliance.