

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF BOATING AND OCEAN RECREATION
4 SAND ISLAND ACCESS ROAD
HONOLULU, HAWAII 96819

December 15, 2017

NOTICE OF ELECTRICAL DEFICIENCIES AND IMMEDIATE ACTION

Dear Honokohau Small Boat Harbor Tenant:

At the request of many harbor users and slip permittees, a study was conducted to investigate the source of suspected electrical current leakage into Honokohau Small Boat Harbor (HSBH) waters, causing advanced galvanic corrosion and resulting in many zinc anodes on vessels to corrode much faster than previously experienced. In addition to inspecting for electrical current leakage, the study included an overall assessment of the electrical systems in place at HSBH.

The results of the electrical study at HSBH can be found at the DOBOR website: <https://dlnr.hawaii.gov/dobor/>. Based on the findings of the report, several major electrical deficiencies at HSBH were identified that pose significant hazards and require immediate action, both on the part of DOBOR and on the individual HSBH tenants.

The following is a list of the critical electrical system deficiencies identified and the immediate action steps that must be undertaken by DOBOR and HSBH tenants. Other deficiencies and hazards noted in the report will be addressed and corrected separately from this notice.

DOBOR Electrical System Deficiencies and Immediate Action

Coin Operated Power Pedestals

Deficiency: The coin operated power pedestals throughout the harbor are in disrepair. Many have been vandalized or tampered with to access power and lack appropriate ground fault circuit interrupters (GFCI) or circuit breakers.

Immediate Action: All coin operated power pedestals will be disconnected and removed.

Electrical Circuit to Lighting on I and J Piers

Deficiency: The junction boxes do not meet current minimum height requirements and non-waterproof splices are used. Many of the junction boxes show evidence of water intrusion at high tides that present an immediate hazard.

Immediate Action: Electrical circuits to lighting I and J piers will either be disconnected or repaired to meet current electrical codes. Solar powered lighting will be installed to provide temporary lighting until a permanent lighting system that meets current electrical code is installed.

HSBH Tenant Electrical System Deficiencies and Immediate Action

Ground Fault Circuit Interrupters (GFCI)

Deficiency: Almost all power receptacles (outlets) installed by HSBH tenants do not meet NFPA requirements, do not have proper GFCI devices, and do not have NEMA 4X rated outdoor enclosures. These devices are required to prevent electrocution, fire, or other hazardous conditions.

Immediate Action: ALL harbor tenants shall replace ALL existing non - conforming vessel shore power receptacles with proper marine standard twist – lock receptacles in one of the following formats:

- A. 30 amp 125 volt receptacles must be NEMA L5-30R type
- B. 50 amp 125 volt receptacles must be NEMA L5-50R type
- C. 50 amp 125 / 250 volt receptacles must be NEMA SS2-50R type

All 120 volt 15 amp convenience outlets must be NEMA 5-15 type with integrated GFCI device.

All receptacles must be installed in a proper NEMA 4X raintight enclosure, with a gasketed weathertight cover to seal the receptacle against moisture when the receptacle is not in use.

All circuit breakers supplying vessel shore power receptacles must be GFCI devices with a leakage trip rating of 30mA. This includes ALL receptacles installed along the A, B, C, D, E, F, G, and H Docks, I and J Piers, along the Fuel Dock, and within the Outer Basin. ALL shore power receptacles/connections installed at the individual slip loading platforms or steps to the vessels must also be replaced with or have 30mA GFCI devices installed. Replacement of receptacles and shore power connections should be done by a licensed electrical contractor familiar with current National Electric Codes and National Fire Protection Association Standard 303.

Vessel Shore Power Cords and Extension Cords

Deficiency: Many vessels are using undersize or deteriorated extension cords for transferring shore power to the moored vessels. This creates a fire and shock hazard on board the vessel or in the marina

Immediate Action: All cords directly connected to a vessel shore power inlet fitting must be proper marine rated shore power cord of sufficient wire size to match the shore power breaker as follows:

- A. 30 amp 120 volt cords must be minimum #10AWG wire size
- B. 50 amp 125 volts cords must be minimum #8AWG wire size
- C. 50 amp 125 / 250 volt cords must be minimum #8AWG wire size

No vessels are allowed to use standard household extension cords to connect directly to the vessel shore power inlet fitting.

Smaller vessels that wish to use an extension cord to power a small battery charger or single appliance may use a heavy duty extension cord ONLY if it is plugged into a GFCI receptacle supplied by a 15 amp circuit breaker, to prevent a fire if the onboard appliance malfunctions.

Extension cords must have proper insulation rated for outdoor and UV exposure. No splicing or joining of multiple cords is permitted.

Timeline and Power Shut Off

Each HSBH tenant and/or slip permittee shall have 45 calendar days to comply with the immediate action items noted above. Failure to complete the repairs will result in the tenant and/or slip permittee's power being shut off until repairs are made. It shall be the tenant and/or slip permittee's responsibility to notify the HSBH harbor staff when repairs are complete so they can be confirmed and testing of the new equipment/devices can be scheduled. Power will not be shut off if the repairs have been completed and harbor staff has been notified within 45 calendar days.

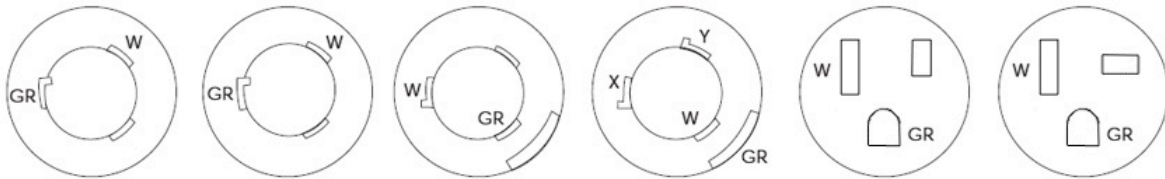
If there are any questions, please contact Mr. Finn McCall of the Engineering Branch via email at finn.d.mccall@hawaii.gov or call (808) 587-3250.

Sincerely,

Edward R. Underwood
Administrator

SHORE POWER CABLE CONFIGURATIONS

RECEPTACLE AND CONNECTOR -- LOCKING AND GROUNDING



20 A 125V
2-POLE, 3-WIRE
NEMA L5-20

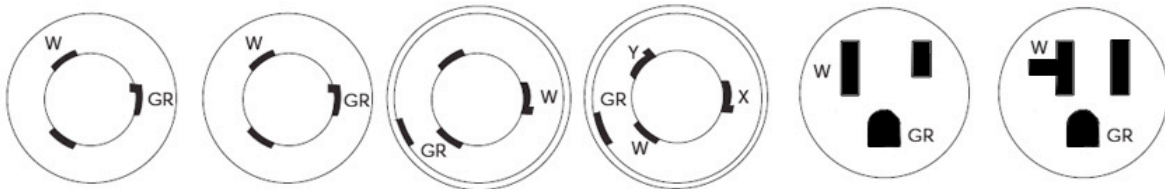
30 A 125V
2-POLE, 3-WIRE
NEMA L5-30

50 A 125V
2-POLE, 3-WIRE
NEMA SS-1

50 A 125/250V
3-POLE, 4-WIRE
NEMA SS-2

15 A 125V
2-POLE, 3-WIRE
NEMA 5-15

20 A 125V
2-POLE, 3-WIRE
NEMA 5-20



PLUG AND INLET -- LOCKING AND GROUNDING

Wiring: GR = green; W = white; Unmarked, X, Y, Z, = other colors, including black