Antelope Point Marina
Shore Power Cord Policy

EFFECTIVE DATE:

12/01/2023

PROGRAM AREA:

Marina Wide

TITLE SUBJECT:

Shore Power Cord Policy

DISTRIBUTION:

All APM personnel and APM Vessel Owners

PURPOSE
The purpose of this document is to ensure that all Antelope Point Marina (APM) Vessel Owners are aware of the hazards affiliated with their shore power cords and the safety requirements APM is required to fulfill.

DEFINITION
Shore Power Cords - A marine rated cable that is meant to connect a vessel to shore power. It is a durable, high-quality cable designed specifically for marine usage.
Shore Power Cord 'Male' end - The plug end of the shore power cord that inserts into the receptacle.
Shore Power Cord 'Female' end - The connector end of the shore power cord that connects to the vessel's receptacle and/or other plug end of the shore power cord.
NFPA - National Fire Prevention Association
USCG - United States Coast Guard
CFR - Code of Federal Regulations
OSHA - Occupational Safety and Health Association
NMMA - National Marine Manufacturers Association
AC electrical power- Alternate Current electrical power

RESPONSIBILITIES
Shore power cords have the potential to create a serious electrical hazard while on the water. APM Vessel Owner's will be responsible for ensuring their private property is held up to the correct standards that are in place, to avoid any harm to both the customer and APM personnel. APM personnel will properly ensure that the APM Vessels Owners are informed of any unsafe equipment and/or high risk situations that occur with their private property.

APM Responsibilities
APM personnel will ensure that all shore power cords are in compliance with all USCG and NFPA codes as well as APM's Slip Rental Agreement. APM personnel will conduct a bi-monthly inspection of shore power cords and will notify the APM Vessel Owner's if any shore power cords need to be replaced.

APM Vessel Owners Responsibilities

It is the responsibility of all APM Vessel Owner's to understand and follow the policy/procedures set forth in this policy. Vessel Owners will ensure that their shore power cords meet all USCG and NFPA codes as well as APM's Slip Rental Agreement. It is the responsibility of the APM Vessel Owner's to replace any and all damaged, worn or out of compliance shore power cords.

APM Vessel Owner's will be responsible for ensuring they do not overload the APM pedestal that they are given access to. Overloaded pedestals shall be reported to APM personnel and the APM Vessel Owner to avoid serious danger and damage to the vessel and toward any personnel/individuals in the area.

APM Vessel Owner's could be held liable for any damages caused to APM property and pedestals.

Common Signs of overloading:

- Flickering lights, especially if they flicker when you turn on high-power-consuming appliances such as air conditioners or refrigerators
- Tripped circuit breakers. If your circuit breaker frequently trips, it could indicate that the circuit is carrying more current than it can handle.
- A burning smell coming from electrical outlets or appliances. This smell could be caused by overheating wires or damaged insulation and could lead to electrical fires if not addressed immediately.
- Warm electrical outlets. If your outlets feel warm to the touch, it could indicate that the circuit is overloaded and should be checked by a licensed electrician.
- Buzzing sounds coming from electrical outlets or appliances. This sound could be caused by loose connections or damaged wires.
- A mild shock or tingle from appliances, receptacles, or switches

Common Causes of overloading a pedestal are as follows:

- **Too Many Electrical Appliances**
  - The primary cause of electrical overload is when too many appliances are connected to a single circuit. Overloading a circuit can cause it to trip, resulting in power outages or even electrical fires. This commonly occurs in households where there are multiple devices running simultaneously, such as air conditioners, refrigerators, televisions, and other high-power-consuming appliances.
- **Faulty Wiring**
  - Another common cause of electrical overload is faulty wiring. This occurs when the wiring is not up to code, damaged, or outdated, causing the electrical system to work harder than it should. Faulty wiring can lead to overheating, short circuits, and electrical fires.
- **Circuit Breaker Malfunction**
  - Circuit breakers are designed to trip and cut off the power supply when there is an electrical overload. However, if the circuit breaker is faulty or not functioning correctly, it may not trip, leading to an electrical overload.
- **Power Surge**
  - Power surges occur when there is a sudden increase in the electrical current flow, typically caused by lightning strikes, power outages, or grid switching. These surges can damage electrical devices and appliances and even cause electrical fires.

- **Lightning Strikes**
    - Lightning strikes can cause significant electrical damage, leading to electrical overloads, fires, and even explosions. Installing a lightning protection system and following safety precautions during thunderstorms can help prevent damage from lightning strikes
- **Damaged/faulty shore power cords**
    - Damaged/faulty shore power cords are power cords that have exposed wiring, overcooked wiring and melted outlets that pose a risk to causing a fire.

Any of the following causes stated above shall be reported to APM personnel and the APM Vessel Owner to avoid any serious danger towards any personnel in the surrounding area.

Any unsafe/hazardous equipment, such as hot or smoking APM's pedestals that can catch on fire, that **pose an immediate danger** to any APM personnel, the public, or property must be reported immediately to 911 or NPS dispatch.

Basic Guidelines for the appropriate use of Shore Power Cords

- **All APM private vessels with an APM Slip Rental Agreement shall have a maximum of 2 shore power cords connected to the APM pedestal for their vessel.**
- All shore power cords must be rated suitable for Marine Use, or better still, "UL-Marine" listed for marine shore power applications.
- All shore power cords must have a male (plug) and female (connector) ends of the locking type.
- All shore power cords used must be rated for the appropriate amperage flow provided by APM.
- All shore power cords must be fully locked in place before turning on APM's pedestal breaker.
- All shore power cord male (plugs) must be molded on or have weatherproof boots before plugging into an APM pedestal.
- All shore power cord female connector ends must have a locking ring to secure the power cord to the inlet on the vessel and provide a weatherproof seal.
- If a shore power cord adapter is needed, the adapter shall only be plugged into the APM pedestal.
- No shore power cord splitters shall be used with an APM pedestal.
- Shore power cords shall be secured safely to the docks so they wont trail into the water.
- Shore power cords that lie across the docks shall be positioned in a way to avoid causing a tripping hazard or any other exposure hazard.
- Only shore power cords and adapters that are in good condition shall be used on APM property. Any signs of damages or exposed wiring shall be replaced.
- When connecting a shore power cord:
    - Shut off the vessel's 'Main' AC circuit breaker then turn off the APM pedestal breaker.
    - Always connect the female end of the shore power cord to the boat **first** before plugging the male end into the APM pedestal.
    - Ensure the cords are positioned in a way to avoid causing a tripping hazard or any other exposure hazard
- When disconnecting from shore power cord:
    - Shut off the vessel's 'Main' AC circuit breaker then turn off the APM pedestal breaker.
    - Always disconnect the male end of the shore power cord from the APM pedestal **before** disconnecting the female end from the boat.
    - Clean and dry the shore power cord. Store the shore power cord in a dry location.
- All Shore Power Cords must be compliant with all USCG and NFPA codes

What not to do when using a Shore Power Cord

- **Never swim in marina harbor areas due to the possibility of electric shock.**
- Do not handle shore power cords that are "Hot" (Power going through the cord).
- Never remove the plug end that's connected to the APM pedestal socket by pulling on the shore power cord.
- Do not allow shore power cords to stay connected with only the plug in connected. A live cord is dangerous and could lead to electrical shock if the cord comes in contact with water.
- Do not use shore power cords that are frayed, cracked or show any visible damages.
- The use of tape and/or other aftermarket repair equipment to repair broken, split or cracked insulation shall be prohibited.
- Splicing of flexible cords or cables shall be prohibited.
- All shore power cords or connectors shall not be modified or "Homemade".
- Do not allow shore power cords to be pinched in any areas. Pinch points create resistance and generate heat that can result in a fire.
- Do not fasten shore power cords with staples or hang in a fashion that could damage, pinch, cut the outer jacket or insulation.
- Do not 'Daisy Chain' shore power cords together.
- Never coil a cord tightly on the docks. Coiled shore power cords can act as a heat generator and can cause a fire. Hang the cord loosely on a hook or support or lay it out in a loose coil of only a few turns.
- Do not leave shore power cords out to where they pose a tripping hazard.
- Extension cords are NOT allowed to be used to provide electrical shore power to any vessel at APM.

Additional Information
From: Electrical shock Hazards - Boating Safety Awareness- NMMA

Fact Sheet:
Electricity kills swimmers, boaters and people in marinas every year.
These deaths occur because of boat and marina wiring problems, component failures or the use of improperly wired household appliances run by AC shore power. Virtually all of these accidents are avoidable.

While AC electrical power is potentially deadly in any location, it is especially dangerous in and around the water.
An electric shock can come from faulty boat or marina wiring in contact with water, concrete or metal docks. Electricity may be present on metallic objects such as marina electrical equipment and shore power connectors or even in the water. Contact with electrically energized equipment may result in painful shock, burns, muscle contraction or paralysis, loss of breathing and even stopping of the heart.

Electricity may be present in the water in places where boats are connected to shore power or where Boat wiring is defective.
Electricity in the water at low levels will paralyze swimmers to the point they lose muscle control, cannot swim, and instantly drown. This is commonly known as electric shock drowning. At higher levels the electrical "field" can be strong enough to cause electrocution by cardiac arrest. **The risk of electric shock drowning or in-water electrocution is greater in freshwater.**

Electricity cannot be detected without the use of specialized test equipment.
Proper training, techniques and specialized test equipment are required to detect electricity in water.

EXAMPLES OF Electrical Hazards from Shore Power Cords

The following are examples of electrical hazards that can occur from shore power cords. These are not all inclusive, but may help to frame the context of this SOP.

- Shore power cords that are found in the water can "leak" electrical power into the water which poses a risk to nearby customers and APM personnel.
- A 'homemade' shore power cord or a shore power cord not listed under "UL-Marine" or rated for marine presents risks associated with the cord that can cause damage to private vessels and/or APM's pedestal.
    - (Ex. Using a 25 amp cord for a 50 amp plug in could potentially short circuit both the private vessel and APM pedestal.)
- A tightly coiled shore power cord could cause overheating, which could lead to a fire, electrical arcing from the cord and/or short circuiting the power cord, private vessel and/or APM's pedestal.

CONCLUSION

The APM Vessel Owner's, and Owner's Vessel, shall at all times comply with applicable health, safety and fire codes and regulations. All guests of the APM Vessel Owner, including family, servants, help, labor, and all others are required to follow the same policies and procedures, included here, as the APM Vessel Owner.

Failure to adhere to this policy could potentially result in a severe injury or death of any personnel who visit Antelope Point Marina. Failure to adhere to this policy could result in termination of a private vessel owner's Slip Rental Agreement.

REFERENCES

Glen Canyon National Recreation Area Antelope Point Marina Slip Rental Policies & Procedures

NFPA 303 Fire Protection Standard for Marinas and Boatyards

NFPA 70 National Electrical Code Chpt. 5 Special Occupancies: Article 555 Marinas, Boatyards, and Commercial and Noncommercial Docking Facilities

29 CFR 1910 OSHA General Industry Subpart S - Electrical 1910.334 Use of Equipment

USCG Boating Safety Circular 81 Shore Power Cords - Proper Use and Maintenance -December 1999

***Electrical shock Hazards - Boating Safety Awareness*- NMMA (National Marine Manufacturers Association)**

Safe handling tips for shore power connections. - By Mark King