

UPDATE ON THE ELECTRICAL CURRENT REPORTED IN LAKE SUNAPEE WOODLAND RD/WEST SHORE ROAD AREA

The Town Manager, Sunapee Fire and Police, State Electrical Inspector, local electricians, residents with reported problems at their docks, and the State Department of Strategic Initiatives have coordinated to work on this issue. Many of us met on site this past Wednesday to assimilate all we knew and to determine what steps to take next. The biggest question now is to try to isolate the private homes and determine what source might be contributing to the stray current. It is possible that the stray current is from an abandoned well pump or dock bubbler left from the winter that are still energized or a submersible pump in the lake that might be malfunctioning among other possibilities. More than likely the energized docks are the site that energy seeks to discharge with a shock but is not likely to be the source of the current from what we have learned so far. The docks that have had the current discharge complaints, have been checked by private electricians and not found to be the source.

The summary below may answer some questions residents have.

Over the last few weeks, Eversource has been investigating voltage concerns at resident's docks and boat lifts along West Shore Road and Woodland Road in Sunapee. They responded to a complaint at 33 West Shore Road where the resident reported feeling an electrical sensation when swimming near the metal ladder on her dock. The service line to the home has been replaced. Readings taken between the aluminum dock and the water have been between 0 and 1.8 volts. The other complaint received was from 68 Woodland Road. A resident felt a shock while in the water and touching the metal boat lift on their main dock. Eversource has measured as high as 5 volts at this location. Subsequent readings have been between 1.5 and 2.2 volts. Minimal voltage has been measured on the other boat lifts at the adjacent dock.

Eversource has inspected and tested their distribution system in the Jobs Creek area. Equipment was found to be in good condition. No issues were found with ground grid, transformers, or infrastructure. The service to 70 Woodland Road has been inactive for many years and disconnected at the meter location. The lines to the home have now been physically removed.

Voltage readings have been taken at docks along West Shore Road and Woodland Road. Readings vary from 0 to 4.0 volts. The most typical readings found were between 1.5 and 2.5 volts on energized docks between a metal surface, like an outlet box, and the lake water. The voltage was present whether the power was turned on or off.

Many residents around the cove have had their home electric service and equipment inspected by their electricians. These residences all have private wells, and some get addition water from the lake and some of these pumps are submersibles.

While Eversource does not have jurisdiction or specific expertise with home owners' wiring to their docks, boat lifts, wells, and lake-based pumps, they appreciate the concern that has been expressed and they are continuing to work closely with the Town representatives and other agencies to support their efforts to alleviate those concerns. We all are working on a plan to isolate the properties services and notify homeowners about the service interruption.

What can you do to help?

It may be helpful to recommend to residents that have power on their docks, to hire a qualified master electrician or third-party inspector to have that wiring inspected. There is a list of third-party inspectors on the Electricians' Board website.

Review what machinery or equipment you as a lake front homeowner have leading to the water that may have power to it that is use might have been discontinued. (Still on at the fuse panel)

Signage: Under the National Electric Code there is a requirement for signage on docks that have electric power to them. For new services I understand this sign is required however it is not retrospective. Property owners might want to place one of these signs where appropriate.

555.24 Signage. Permanent safety signs shall be installed to give notice of electrical shock hazard risks to persons using or swimming near a boat dock or marina and shall comply with all the following:

- (1) The signage shall comply with 110.21(B)(1) and be of sufficient durability to withstand the environment.
- (2) The signs shall be clearly visible from all approaches to a marina or boatyard facility.
- (3) The signs shall state "WARNING — POTENTIAL SHOCK HAZARD — ELECTRICAL CURRENTS MAY BE PRESENT IN THE WATER." [555.24 is a new section added to the 2017 NEC]

Electrical shock drowning is only one of many hazards that exist in the water around marinas and boatyards. Part of an effective plan to reduce the number of incidents is a no swimming policy. Prohibiting recreational swimming in the immediate vicinity of boats and docks using ac electrical power will protect the public against the dangers associated with using electrical power in marinas and boatyards. The warnings provided by signage (see Exhibit 555.3) along with enforcement by marina and boatyard operators, can save lives and prevent injuries.



EXHIBIT 555.3 An example of signage that includes the messaging required by 555.24.

- Prohibit swimming where AC shore power is supplied to the docks for any purpose.
- Prohibit swimming near any private dock where AC shore power is supplied to the docks for any purpose.

Thank you for your attention to this matter and as I learn more, we will update you again.
In the case of an emergency call 911

Thanks

Donna Nashawaty

Sunapee Town Manager

donna@town.sunapee.nh.us

603 763-2212

Other resources

<https://www.esfi.org/resource/electric-shock-drowning-water-and-electricity-don-t-mix-643>

<https://www.electricshockdrowning.org/>