# Electricity Under the SSB Fishing Pier

Pier Committee Report by John Hiatt

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Subject matter experts at the SSB town level have informed the Pier Committee that regulations prohibit electrical power from being placed underneath the pier for use by the town's rented-out kiosk spaces that may become located there, and for other community events. This report aims to explore the correctness of that information and whether there exists a method of supplying electrical power under the pier that does not violate pertinent regulations.

Many national and international agencies are involved in regulating the use of electricity because of its inherent danger. Such entities include the Occupational Health and Safety Administration (OHSA); the governing body that produces the International Fire Code (IFC); the National Fire Protection Association (NFPA), and of course, our own South Carolina government's Fire Code (SCFC).

The NFPA issues model standards of which NFPA 70 is one, and that NFPA 70 is known as the National Electrical Code (NEC). The codes of all these entities have been researched during the preparation of this report. Other entities, like Underwriters Laboratories (UL) among others, approve ("list") all types of electrical devices as meeting the specifications required in these codes.

In Chapter 6 of the SCFC, titled "Building Service Systems," the NFPA 70 NEC code is specifically adopted. Because the NEC regulations appear to be the prevailing ones in reference to electrical power under of the pier, and all the other regulatory bodies' regulations are similar or exact in nature, this report will only focus on those NEC regulations that are pertinent. It should be mentioned that OSHA regulations match the NEC's regulations too, so OSHA regulations won't be further considered in this report either.

The underneath portion of a pier located on an ocean beach, which is subject to severe storms and hurricanes, obviously presents unique electrical power supply challenges. Electrical outlets obviously cannot be permanently located in a flood plain. So the research for this report sought to learn what type of electrical power supply under the pier could meet the challenges of the pier's unique environment.

In the research for this report, it was learned that the regulations referencing extension cords are not relevant for the type of electrical power that's being sought for use under the pier. Thus, those regulations were disregarded by this report.

Instead, a power supply system that appears workable is what's called a "Pendant Mounted Receptacle," or simply a "Pendant." A Pendant is an environmentally safe electrical plug that drops down from a high point for use near ground level. In the case of the pier, the Pendants would descend from the highest level underneath the pier, above the sand, on the pier's most western and landward portion. Or said another way, under the "village" portion of the pier.

The electrical Pendants being considered will also need to be retractable, mounted on the high ceiling created by the bottom side of the pier so that they can be dropped down for use, and then raised back up again to a safe location above the flood plain after use. That way they will not remain in an environment with a potential to flood, and where permanent electrical plugs are prohibited. For shortness, this report will refer to this device as a Retractable Pendant.

The NEC code, Chapter 3, Article 400 "Flexible Cords and Flexible Cables," in Section 400.10 (A) specifically permits such Pendants. Pendants are manufactured to serve both indoor and outdoor environments, including harsh marine environments. Devices that lower and retract Pendants are also readily available, the most hardy of which appear to cost around $1000 each.

Envision a large warehouse with an industrial use. Electrical receptacles can't be hardwired into the open space inside the warehouse because there is no place in the empty area to put them, except for maybe in the floor, but then doing that would present other hazardous issues including trip hazards. So instead, Pendant Mounted Receptacles are hung from the warehouse's ceiling down toward the floor at the needed locations.

This is what the Pier Committee would like to see placed under the pier, but not out in the open like in a warehouse. Rather the pier's Retractable Pendants would be located near a few of the pier's structural support columns to allow electrical service to be provided to the kiosks needing electrical power. But by dropping the Retractable Pendants down alongside the structural columns, which will then block them from coming into contact with patrons walking in the area, they won't become a head banging hazard.

BY SSB Ordinance, the Retractable Pendants will have to be placed at least three feet above Base Flood Elevation. On the map referenced for this report, the Base Flood Elevation for the pier is 13 feet, meaning the lowest portion of the Retractable Pendant will have to be roughly 16 feet above the sand. The underneath bottom of the pier is already above that level by several feet.

The Pier Committee's eventual recommendation to the Town Council will probably be to install up to seven of these Retractable Pendants under the pier alongside seven of the upright pier support columns. The Pier Committee has identified 14 locations for rentable kiosks under the pier and this placement would allow two kiosks to share each Pendant's receptacle. As not all kiosks will require power, maybe fewer Retractable Pendants would still meet the potential need.

Terms of the kiosk rental agreement should include not allowing extension cords to be placed into these receptacles, as the use of extension cords are governed by an entirely different chapter of the NEC. Also, according to what the Fire Marshall has already said about them, such extension cord use would probably be prohibited in the area by existing fire codes. Only the device requiring the power should be allowed to be plugged directly into this Retractable Pendant, without recourse to an extension cord.

Of course, the Retractable Pendants need to meet the many technical specifications stated in the NEC. These codes require portions of the Retractable Pendant system to be "listed" by UL or others entities as meeting the requirements for their use and location. Therefore, these Retractable Pendants should only

be selected and installed by a properly licensed and experienced electrical contractor in order to ensure compliance with the required specifications.

At the time of this installation, lighting in the same area under the pier should also be considered if it has not been already. Not only would lighting allow community events to occur at night, but also would illuminate an area where criminal activity could otherwise more privately occur.

So, to answer the initial question: Yes, there is an approved electrical system that can meet the need of providing electrical power under the SSB Fishing Pier for up to fourteen kiosks rented-out by the town, and for other community events. It does not appear that the information previously provided the pier committee was correct.