

Presented to: Table Rock Lake Oversight Committee  
Dr. Tamera S. Jahnke, Chairperson  
FACA # 84572  
Presented by: Fred Greene, permit holder  
RE: Alternative energy for floating facilities on Table Rock Lake

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**Issue: Solar power for private floating facilities: design standards, market and infrastructure support for existing facilities as well as market and infrastructure support for future facilities.**

**Abbreviations:** Shoreline Master Plan (SMP), Table Rock Lake Oversight Committee (TRLOC), Table Rock Lake (TRL), U S Army Corps of Engineers (USACE).

**Reference material:** SMP draft Section titled “Facility Construction Requirements” paragraph 1 page 25, Initial Power Point presentation to the TRLOC slide 15 and Dock Electrical Systems packet prepared by the USACE Little Rock Division on June 3, 2013.

**Purpose:** Provide future actions for the USACE to undertake so that an ultimate conversion from shore based electrical power to alternative energy sources can be implemented.

**COMMITTEE ACTION:** **Recommend the USACE Table Rock;** 1) develop a “Dock Alternative Energy Systems” packet, similar to the “Dock Electrical Systems” packet developed in 2013, 2) continue to require new private docks (not community docks) be completed with alternative energy or other non-shore based electrical connections, 3) develop a database of potential alternative energy companies within the area exhibiting the expertise and personnel required to service a large population of alternative powered facilities, 4) develop a data base of existing alternative energy powered docks on TRL, 5) utilize that database to document and categorize the experiences of those private dock permit holders and 6) for the next required SMP update, present this information to the public to determine IF there is the infrastructure to support a larger conversion to alternative energy sources for dock power.

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Discussion and reasoning:

Since 2013, new private docks have been required to be serviced by non-land based electrical service, i.e. alternative energy sources. In the initial TRL Draft SMP, a conversion of all private and community docks to alternative energy sources by 2027 was included. In the Initial presentation by the USACE to the TRLOC, slide 15 (**Tab 2**) showed this requirement had been deleted.

According to the presentation by the USACE to the TRLOC on March 5, 2020, to date, roughly 215 new alternative energy power private docks exist on TRL. For the 2019 SMP, the USACE contacted these permittees and roughly 80% responded to questions posed by the USACE about their experiences with alternative energy powering their docks. The results were included in the USACE presentation.

Nathan Jones, of Solar Dock Power LLC, spoke after the USACE’s presentation. Mr. Jones addressed several of the concerns the USACE uncovered in the survey of existing TRL alternative powered private docks. Solar is the only alternative power source currently in use on TRL.

One of the more interesting comments Mr. Jones made was the lack of any specific design recommendations or requirements issued by the USACE. It has been left up to the private dock owners

themselves to decide on the system installed. This lack of guidance has resulted in multiple different systems with varying degrees of complexity, performance and costs. This lack of guidance has also increased the potential for environmental problems should a facility with batteries, experience a battery failure and contaminate the water surrounding the facility.

The discussion around community docks and alternative energy sources focused on the power requirements for holiday weekend peak usage. While the systems can be built with the necessary power to handle this situation, according to Mr. Jones, should the weather either prior to or during the week be overcast (assuming solar is utilized), but not sufficiently lousy to keep boaters away, power issues could develop. The larger the dock the larger the level of concern. Back up gasoline generators, while an interesting back-up plan, provide their own environmental issues.

**Tab 3:** The SMP 2019 draft on page 24 under the Facilities Construction Requirements states in the first sentence, “New facilities or modifications to existing facilities must include plans signed and stamped by a licensed engineer”. There is no definition of “licensed engineer” and therefore no distinction between a licensed chemical engineer, licensed aeronautical engineer, a licensed electrical engineer or a licensed architectural engineer. Apparently to the USACE, all engineers are created equally.

According to Mr. Jones, a dock powered by an alternative energy source is going to be required to support more weight (batteries), potentially more rooftop attachments (solar panels) or a potential large windmill attached to the dock superstructure than a land based electrically powered dock. Not having specific design standards was a major concern for him.

**Specific USACE Table Rock actions:**

- 1) **Accept the recommendations of the TRLOC and implement their recommendations**
- 2) Correct and update the “Dock Electrical Systems” (**Tab 4**) guide dated June 3, 2013 on page 2 where it says “Dock service will have a disconnect switch 3’ above the 1130’ elevation.” Since this would be roughly 175’ above the top of the flood pool at Table Rock, the wording needs to change.
- 3) Develop specific standards for alternative energy sources much like the “Dock Electrical Systems” pamphlet mentioned earlier. These standards could include:
  - a) the system design requirements be signed and stamped by a licensed electrical engineer with an alternative energy specialization
  - b) the structural support for the dock be signed and stamped by a licensed structural engineer and
  - c) the requirements for the type of battery used to store excess power.
- 3) Develop, survey and catalog the experiences of existing alternative energy powered docks.
- 4) Develop and maintain a list of potentially “approved” companies to install and maintain alternative energy system on docks on TRL,
- 5) Prepare a report for the 2024 SMP covering the results of the user surveys, the companies approved to install and maintain alternative energy sources and the design and construction requirements for private floating facilities powered by alternative energy sources.

Submitted to the USACE Table Rock Lake

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Dr. Tamera S. Jahnke, Chairperson  
FACA # 84572

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Date Submitted

*ALTERNATIVE ENERGY: THE FUTURE OR  
A MESS*

