SMUD Office Memo

TO: File   DATE: April 2, 2021

FROM: Power Generation Project Development Staff

SUBJECT: **Impediments to Aerial Navigation on Solano 4 Wind Project Site**

One impact area that staff evaluated regarding the Solano 4 Wind Project concerns safety hazards to aircraft in flight. In addition to studies conducted by Capital Airspace, the Travis Air Force Base, and the Federal Aviation Administration, all of which concluded the Project will not adversely affect operations at the Base, staff reviewed the Project site itself to document impediments to aerial navigation that exist today and that are maintained by entities other than SMUD. In short, transmission towers onsite currently reach almost 500' in height, with planned increases by the tower owners to close to 600' feet. It is manifest that these existing towers greatly impede the potential use of the site for aerial navigation by military or private aircraft. Any incremental obstruction by wind turbines must be viewed in the context of the site's already constrained utility for aerial navigation. In light of this baseline interference with aerial navigation and the conclusions of the studies indicated above, a finding could readily be made that the Project will not cause a safety hazard to aircraft in flight.

More so than other locations within the Wind Resource Area, the site for this Project features substantial existing and planned impediments to aerial navigation. Particularly, there are three unusually high transmission towers on the site itself and one immediately adjacent. These towers are so tall because they must meet federal requirements for transmission lines crossing the Sacramento River. The reason is that the catenary (or sag) in the transmission lines hanging from the towers must be high enough in elevation to ensure large ships navigating the river can pass safely underneath the lines in all weather and temperature conditions. Because the catenary can increase (i.e., the elevation of the lines can drop) significantly during hot weather and when high electrical loads are being transmitted, the towers must be built tall enough to ensure room for error.

All of the river-crossing transmission towers within the boundaries of the Wind Resource Area are located on the Project site, making this existing impediment to aerial navigation, at least among wind projects, unique to the Project. The towers are also spread out over a 2.5-mile lateral range along the Project property, making the site, as a whole, subject to this impediment to aerial navigation. The 25 Feb 2021 San Francisco Sectional Aeronautical chart shows multiple tower sets spanning the Sacramento River at 488' to 492' above mean sea level (MSL) with the north side of the crossing towers located on SMUD property.

Staff review of Federal Aviation Administration and Independent System Operator filings by the tower owners of towers on or immediately adjacent to the SMUD project

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property—Pacific Gas and Electric Company (three towers) and the Transmission Agency of Northern California (one tower)—show that some of the existing towers will be replaced soon with higher ones, up to 588'. One filing indicates the increase in height is due to a requirement from the U.S. Army Corps of Engineers, which is responsible for ensuring the navigability of the Sacramento River under the authority of Section 10 of the Rivers and Harbors Act. Attached to this memorandum are publicly available filings about the proposed increases in tower height and a map showing some of the existing tower locations (as inverted V's) and the project site in a dotted red line.

Attachments:

- Notice of Proposed Construction, Advice Letter Number 6131-E (California Public Utilities Commission)
- Response to Request dated November 12, 2011 to extend the COD for the Collinsville Wind Project (ISO Queue #113) (California Independent System Operator)
- Determination of No Hazard to Air Navigation (Federal Aviation Administration)
- 25 Feb 2021 San Francisco Sectional Aeronautical Chart with Wind Project Boundaries

cc: Corporate Files