

May 19th, 2017



Mr. Neil Millar  
Executive Director  
Infrastructure Development  
California Independent System Operator  
250 Outcropping Way, Folsom, CA 95630

**RE: TL23027 and TL23028 Smart Wires Power Guardian Proposed Solution**

Mr. Millar:

Earlier this year, San Diego Gas & Electric (SDG&E), in partnership with Smart Wires, proposed the use of Smart Wires modular power flow control technologies as an insurance policy against the risk of urban load shed in the case of further delay to the Sycamore – Penasquitos line (SX-PQ).<sup>i</sup> This project (Old Town – Mission Power Flow Control Project) saves consumers considerable amounts of money compared to other alternatives based on upfront capital costs; more so, given its redeployable nature, the cost of solving the short-term need would in fact be a small fraction of the upfront capital costs.<sup>ii</sup> As many other stakeholders have expressed through the open stakeholder process, Smart Wires commends SDG&E and the CAISO for their identification and consideration of this forward-thinking approach to ensuring safe, reliable and affordable power to San Diego residents and businesses.<sup>iii</sup>

Smart Wires was disappointed to receive communication from SDG&E stating that they do not believe they can hit the June 1<sup>st</sup>, 2018 in service date and want to continue evaluating other options (*attached*).<sup>iv</sup> Specifically, San Diego Gas & Electric notes seismic qualification (IEEE Standard 696-2005) and their lack of previous experience with Smart Wires technologies as “*additional qualification activities*” that would make it challenging to hit the in service date. Smart Wires understands these concerns especially in light of the large number of high priority and high urgency projects that SDG&E is currently executing. They, like most utilities, are facing an increasing number of pressures and challenges with a limited amount of resources and bandwidth. Smart Wires appreciates this and stands ready to support SDG&E and the CAISO in any way that is needed.

Our one, and only, comment on this issue is to note that ***there is little cost or downside to continuing with preliminary design and qualification activities*** over the course of the following months. Smart Wires, along with multiple California customers and stakeholders, has already been working through many of these considerations, such as permitting and seismic qualification, prior to identifying and pursuing the project with SDG&E. We are confident that with continued collaboration, many of these qualification activities could be completed by Q4 2017, at which time, SDG&E, CAISO, and stakeholders would be in a better position to determine if a Summer 2018 insurance policy is needed while also ensuring that the technology is qualified and firmly in the SDG&E/ CAISO tool belt to address current or future needs in an expedient manner.

We appreciate the opportunity to comment and stand ready to continue work with SDG&E and the CAISO on this or other projects to demonstrate the many benefits and applications of our technology across the SDG&E and CAISO systems.

Sincerely,



Todd Ryan

**Todd Ryan, Ph.D.** | Director of Regulatory Affairs  
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Smart Wires Inc.

cc: Ed Randolph  
Molly Sterkel  
Michele Kito  
Billy Blattner  
Jonathan Woldemariam  
Andee McCoy  
Will Speer

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<sup>i</sup> CAISO April 25<sup>th</sup> presentation to stakeholders  
[http://www.caiso.com/Documents/Agenda\\_Presentation\\_Mission-OldTown\\_PacificDCIntertieUpgradeProjects.pdf](http://www.caiso.com/Documents/Agenda_Presentation_Mission-OldTown_PacificDCIntertieUpgradeProjects.pdf)

<sup>ii</sup> The upfront capital cost is estimated to be \$6-12M. However if the project is only needed for two years, the cost to consumers to solve the two year need would be only \$3-4M. The units would then be used to solve other issues on the grid.

<sup>iii</sup> CalWea [http://www.caiso.com/Documents/CalWEAComments\\_Mission\\_OldTown\\_PacificDCIntertieUpgradeProjects.pdf](http://www.caiso.com/Documents/CalWEAComments_Mission_OldTown_PacificDCIntertieUpgradeProjects.pdf)

GridWise Alliance

[http://www.caiso.com/Documents/GridWiseAllianceComments\\_Mission\\_OldTown\\_PacificDCIntertieUpgradeProjects.pdf](http://www.caiso.com/Documents/GridWiseAllianceComments_Mission_OldTown_PacificDCIntertieUpgradeProjects.pdf)

NRDC

[http://www.caiso.com/Documents/NRDCComments\\_Mission\\_OldTown\\_PacificDCIntertieUpgradeProjects.pdf](http://www.caiso.com/Documents/NRDCComments_Mission_OldTown_PacificDCIntertieUpgradeProjects.pdf)

Smart Wires

[http://www.caiso.com/Documents/SmartWiresComments\\_Mission\\_OldTown\\_PacificDCIntertieUpgradeProjects.pdf](http://www.caiso.com/Documents/SmartWiresComments_Mission_OldTown_PacificDCIntertieUpgradeProjects.pdf)

<sup>iv</sup> Attachment A: 5/18/17 letter from Will Speer, SDG&E's Director of Electric System Planning



**Will Speer**  
Director, Electric System Planning

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May 18, 2017

Neil Millar  
Executive Director, Infrastructure Development  
California Independent System Operator Corporation  
250 Outcropping Way  
Folsom, CA 95630

RE: TL23027 and TL23028 Smart Wires Power Guardian Proposed Solution

Dear Neil:

Through an off-cycle California Independent System Operator (CAISO) Transmission Planning Process (TPP) review during the first quarter of 2017, San Diego Gas and Electric (SDG&E) and CAISO acknowledged potential adverse power flows on either one of SDG&E's 230 kV transmission lines from Mission to Old Town Substation (TL23027) and Mission to Old Town to Silvergate Substation (TL23028). These potential adverse power flows are anticipated to occur on one transmission line for the outage of the other if SDG&E's approved Sycamore Penasquitos 230 kV Transmission Line Project (SX-PQ) encounters construction delays beyond June 2018 and there are inadequate generation resources in Carlsbad, California under projected Summer 2018 system loading conditions.

SDG&E and Smart Wires developed and proposed to CAISO the installation of a scalable, short-term, re-deployable, and low-cost solution consisting of an array of Smart Wires Power Guardians in a Smart Bank configuration at a cost of \$6M to \$12M and an in-service date of June 1, 2018. The installation of the Power Guardian devices would allow the operator to manipulate transmission line reactance in real time to divert power flows from TL23027 and TL23028 to other transmission lines in the area under appropriate system conditions.

Upon further review by the SDG&E engineering team, in order to deliver the proposed Smart Wires solution, which leverages a relatively nascent technology that SDG&E has no former experience deploying, the team has determined that additional qualification activities should also be considered in the overall project timeline. For example, SDG&E has determined that the Smart Bank may be subject to seismic qualifications as found in IEEE Standard 693-2005. SDG&E believes that in order to electrically and seismically validate the 230 kV Smart Bank technology, incorporate it into a detailed design, and complete construction activities, the SDG&E team would require more than the twelve (12) month window available.

SDG&E has concerns that this scope and timing puts the installation of a Smart Bank solution by June 1 2018 at risk. Further, SDG&E has determined that if a Smart Bank scope were to be considered by the California Public Utilities Commission (CPUC) as a mitigating project connected to SX-PQ, a re-

evaluation of SX-PQ by the CPUC would be required pursuant to the California Environmental Quality Act (CEQA) in the form of a subsequent or supplemental Environmental Impact Report (Public Resources Code Section 21166) further risking SX-PQ's in-service date of June 1, 2018.

Ultimately, while SDG&E believes that the proposed Smart Wires solution would adequately address the potential TL23027 and TL23028 overload risk, if in-service by June 2018, we do not believe we are currently positioned to achieve such a target for the reasons expressed above. We will continue to work with CAISO to evaluate other alternatives.

SDG&E appreciates CAISO's consideration of this matter and if you have any questions, please do not hesitate to contact me.

Respectfully,

A handwritten signature in blue ink that reads "Will Speer". The signature is written in a cursive, flowing style.

Will Speer  
Director, Electric System Planning

cc: Ed Randolph  
Molly Sterkel  
Michele Kito  
Billy Blattner  
Jonathan Woldemariam  
Andee McCoy