



Cross-Sector Collaboration: Addressing the Potential Challenges from Electric Vehicle Grid Impacts

(April 11, 2023) – The [California Mobility Center \(CMC\)](#), the [North American Electric Reliability Corporation \(NERC\)](#) and the [Western Electricity Coordinating Council \(WECC\)](#) developed the joint report, “[Electric Vehicle Dynamic Charging Performance Characteristics during Bulk Power System Disturbances](#)” to highlight the need for ongoing collaboration between electric utilities, electric vehicles (EVs), and electric vehicle equipment industries to ensure electric system reliability.

The report, undertaken as part of the joint [EV Grid Reliability Working Group](#), focuses on EV charging behavior during infrequent disturbances that originate from the high-voltage bulk power system. These events last no more than a few seconds, but if left unchecked they have the potential to cause catastrophic consequences for electric system reliability such as cascading blackouts and widespread power interruptions.

“By forming a working group to bring all EV stakeholders together, we can better accelerate innovation and help prevent grid reliability challenges before they happen,” said Arlen Orchard, CMC chair. “This is precisely the type of cutting-edge cross-sector collaboration that the CMC seeks to foster.”

The need for early engagement and information exchange between sectors to facilitate timely anticipation and resolution of these potential issues is also highlighted in the report. In particular, the reliability concerns that electric utilities are studying in anticipation of the projected significant nationwide increase in EV charging was outlined, and initial recommendations to mitigate these concerns were highlighted.

“As the electrification of the transportation sector continues to grow, the North American grid must be prepared,” said Jim Robb, NERC president and CEO. “Collaboration, innovation, and information sharing are critical if we are to be able to meet future demands successfully. NERC is committed to working with stakeholders to unify our efforts in these areas to advance our shared reliability goals.”

Ongoing information sharing is key to fostering mutual understanding of the issues and to ensure cost-effective grid reliability as electrification of transportation fleets increases. Continued cross-sector collaboration in other areas that are essential to reliability is highlighted, including the detection and exchange of data to advance the role of EV charging and enhancing grid reliability, as well as in the areas of cyber security and consumer guidance.

“The efforts of the joint EV Grid Reliability Working Group illustrate the benefit of proactive cross-industry collaboration to achieve a common reliability objective,” said Melanie Frye, WECC president and CEO. “Building on the work of this group, we can now improve the tools and



assessments needed to understand the reliability risks and mitigation strategies for a future with much higher levels of electric vehicles and high-power charging stations in the west.”

The co-chairs of the EV Grid Reliability Working Group were Ryan Quint from NERC, Joe Eto from Lawrence Berkeley National Laboratory, and Mike Walker from the CMC. In addition to the CMC, NERC, and WECC, the group included experts from the California Energy Commission (CEC), the California Independent System Operator, the Electric Power Research Institute, General Motors, Lawrence Berkeley National Laboratory, the Sacramento Municipal Utility District (SMUD), S&C Electric, Southern California Edison, Wood Mackenzie, and others.

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About the California Mobility Center (CMC): The CMC is a nonprofit, public-private entity providing future mobility innovators and industry incumbents access to programs and resources that accelerate the pace of commercialization worldwide and aspires to be the leading innovation center for global mobility success. The CMC was founded by industry thought leaders in clean technology including [California State University, Sacramento](#), [EnerTech Capital](#), [PEM Motion](#), [Sacramento Municipal Utility District](#) (SMUD) and the [Greater Sacramento Economic Council](#) (GSEC). The CMC is strategically located in Sacramento, CA. Its location puts the CMC in close proximity to California government, which leads the United States and the world in producing policies around clean mobility and technology. For more information, visit californiamobilitycenter.org.

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About the North American Electric Reliability Corporation (NERC): The vision for the Electric Reliability Organization Enterprise, which is comprised of NERC and the six Regional Entities, is a highly reliable and secure North American bulk power system. Our mission is to assure the effective and efficient reduction of risks to the reliability and security of the grid. Communications@nerc.net

About the Western Electricity Coordinating Council (WECC): WECC is a not-for-profit corporation that was formed to assure BPS reliability in an area known as the Western Interconnection, which includes California and 13 other western states, two Canadian Provinces and Northern Baja Mexico. WECC’s mission is to effectively and efficiently mitigate risks to the reliability and security of the Western Interconnection’s bulk power system.

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