

# Next Generation Network (NGN) Webinars



## Protection and Control Challenges Associated with Implementation of Three-Phase Electric Vehicle Charging Stations

### Summary

Addition of new generation sources to the power system in form of inverter-based DERs represent many challenges for protection engineers, because of the changing nature of fault current levels. Technological developments within last two decades have resulted in increased popularity of electric vehicles over internal combustion engine vehicles. In order enable the use of electric vehicles, massive electric vehicle infrastructure must be put in place. DC level 1 chargers, or what is commonly known as DC Fast chargers (DCFC), are typically 3-phase, 4-wire chargers connected to electric utility's 480V system. Depending on the internal design of the electric vehicle supply equipment (EVSE) and configuration of electric utility's step-down transformer, both electric utility and EVSE can experience relaying and power quality challenges. This talk will discuss protection challenges on both electric utility and EVSE and provides some insight into Power Quality considerations when installing this equipment.

### Speaker

Aleksandar Vukojevic [Senior Member, IEEE] received the bachelor's degree in applied mathematics from Kennesaw State University, Kennesaw, GA, in 2001, the bachelor's and master's degrees in electrical engineering from the Georgia Institute of Technology, Atlanta, GA, MBA from the Robinson College of Business, Georgia State University, Atlanta, GA, in 2009, and the Ph.D. degree from the Department of Electrical and Computer Engineering, North Carolina State University, Raleigh, NC, in 2020. Aleksandar has over 15 years of experience working for electrical utilities, and has been awarded several patents during his career. His research interests include design, construction, commissioning, modeling and protection, and control of microgrids. He is a Registered Professional Engineer in the state of North Carolina.

### Links & Information

Thursday, May 16, 2024  
12 pm CDT | 1 pm EDT

Duration: 1 hour

[Register Here](#)



**Dr. Aleksandar Vukojevic**

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