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**Special Reliability Assessment on Oscillatory Modes in North American
Interconnections**

**Mani V. Venkatasubramanian, Washington State University
Ryan Quint and John Skeath, NERC, Atlanta GA.**

Abstract

The presentation will provide a summary of the special reliability assessment report being prepared by the NERC for understanding the properties of the main oscillatory modes in the three North American interconnections, namely, eastern, western and Texas interconnections. For the past two years, NERC has been collecting interconnection wide synchrophasor data during several major system events from the three interconnections.

NERC Synchronized Measurements Subcommittee (SMS) is leading this effort, and several recent events have been analyzed. These include two major forced oscillation events in the eastern interconnection in 2016 that excited oscillations seen over wide geographical regions in the east. While such studies have been carried out in the western interconnection for many decades, we are studying the oscillatory modes of the eastern and Texas interconnections for the first time using wide-area synchrophasor data. The presentation will summarize the dominant modes observed in the data, their damping levels, and the mode shape properties.

For the first time, NERC has collected synchrophasor data during major events from all the reliability coordinators in the eastern system for analyzing the oscillatory modes in the east, and the studies provide valuable insight on the oscillatory properties of the eastern interconnection. While some of these properties are similar to what we have seen in the western interconnection in the past, some of the modes are also even more complex owing to the meshed nature of the eastern grid. The presentation emphasizes the importance of data sharing among utilities for understanding and handling such complex oscillatory modes for reliable operation of the power grid. It is interesting to compare the nature of the modes across the three interconnections. Such studies need to be carried out regularly by the reliability coordinators and by NERC and the presentation points to the need for these studies and the benefits in the form of lessons learned.

Please send the Abstract to dsobajic@gridengineering.com by April 12