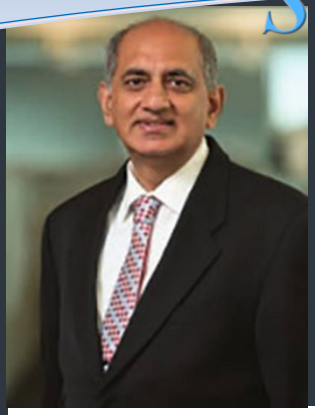
POWER, ENERGY & CLEAN TECHNOLOGIES seminars



Date
Friday
2 October 2020

Time
12:00pm (AEST) – start
12:55 – conclusion
Time will be allocated for questions after the presentation

This PECT seminar will only be delivered by livestream Zoom:
Meeting ID: https://qut.zoom.us/j/95794156773

Biography

Mukesh Nagpal, PhD, PEng

Dr Mukesh Nagpal is a Senior Member and distinguished lecturer of IEEE Power and Energy Society, Adjunct Professor at University of British Columbia (BC), Vancouver, BC, Professional Engineer in the Province of British Columbia and Fellow of Engineers Canada.

Currently, he is a Principal Engineer/ Manager with the Protection and Control Planning Department of BC Hydro. He has about 34 years of experience in electric utility research and power system protection. He published about 50 technical papers, including two IEEE-PES Best Papers.

In 2016, Dr Nagpal received the highest engineering order of BC – R.A. McLachlan Memorial Award.

Speaker's contact details

Email: Mukesh.Nagpal@bchydro.com

Ph: +1-604-961-6893

The Energy Researchers at QUT are pleased to invite you to the next seminar in the 2020 PECT Seminar Series given by Dr Mukesh Nagpal from British Columbia Hydro

Protection Challenges and Potential Solutions on Lines Supplied by Inverters

Abstract

Modern power electronic inverter interfaces which connect stationary or rotating energy sources to the power grid generally incorporate fast switching devices. The designers of these interfaces have great flexibility to manage the current output of the source, particularly during short circuit conditions. In contrast, the current output of a synchronous generator immediately after the inception of a short circuit is uncontrolled and of a high magnitude. The current from an inverter interfaced source is controlled and is generally low in magnitude.

For power electronic inverters, the short circuit current characteristic is highly dependent upon a specific, and often proprietary, control system that is designed to protect the interfacing power electronics and to meet any utility grid code requirements. Consequently, the reliability of conventional protection schemes, designed for conventional rotating machine sources, can be compromised when they operate solely on the current contribution from the interfaced sources but do not take into account the controlled nature of their short circuit currents.

This presentation illustrates the reliability risk to conventional line protection schemes using real life examples of short circuit currents on lines, supplied by sources having converter or inverter interfaces. In particular, for those which use negative sequence quantities for detection of unbalanced faults. Examples will be used from the protection schemes adopted by BC Hydro for lines interconnecting sources with converter or inverter interfaces.

RSVP
COB Thursday 1 October 2020
By emailing Adriana at: a.bodnarova@qut.edu.au