

Technical Talk – “Transmission Lines – Electricity’s Highway”

This talk starts with an explanation of Surge Impedance Loading and demonstrates how it is used for transmission line work. The St. Clair Curve widely used in transmission work is illustrated along with its development. Reactive power requirements are illustrated and its importance to transmission line engineering is illustrated. Included in talk are examples of calculations that can and should be done before undertaking any detailed power system studies.

Date: Monday, March 9th, 2015, 7 – 9pm

Place: EN-2040, SJ Carew Building, Memorial University

Speaker’s Biography



W.O. (Bill) Kennedy, (LSMIEEE) is President and Principal of b7kennedy & Associates Inc., a consulting company he established in 2005 to provide service to companies connecting to the electric power grid. Throughout his 45 year career he has worked on the Nelson River HVDC transmission system, 500 kV transmission in Pakistan, 400 kV transmission in Iran and 138 kV transmission in Peru. Bill has worked or consulted in nine of Canada’s ten provinces. He has developed successful and innovative power system seminars to educate non-power system engineers and other engineers on how the electric power system works.

His accomplishments include the development of a distance relay testing procedure that allowed the relays to be tested insitu. This procedure moved relay testing from the shop floor to the substation. Bill demonstrated that import on the 500 kV transmission line connecting Alberta to British Columbia could be raised to 600 MW without the requirement for load shed in Alberta. He developed transmission required to incorporate 3,400 MW of wind based energy into the Alberta grid. Using a Stakeholder consultative approach, he developed the first protection standard for Alberta. While a utility employee, Bill lead the development of a 455 km 138 kV transmission line in northern Saskatchewan effectively incorporating northern communities into the SaskPower grid.

Bill is the author of 15 papers and lectures on transmission lines and other power system topics.

Active in IEEE Bill served two terms as Director for IEEE Canada (Region 7) and for PES (Division VII). He was general chair of 2009 Power and Energy General Meeting held in Calgary. At the time, it was the largest PES General Meeting ever held. He is the General Chair of EPEC 2014 which was held in Calgary in November of 2014.

Bill is a registered engineer in Alberta. He is a member of CIGRE and the IEEE Standards Association. Bill was the Y2K coordinator for Alberta transmission system. He was a member of the NERC Task Force investigating issues from the 2003 Blackout.

His expertise was recognized by the Engineering Institute of Canada when Bill was elected Fellow in 1998. In 2009 he was the University of New Brunswick’s Dineen Lecturer. In addition, Bill was recognized by IEEE Canada as the 2014 Outstanding Engineer and he is the 2015 recipient of the IEEE Canada Power Medal.