



IEEE Power & Energy Society Winnipeg Section PRESENTS...A LUNCHEON MEETING

TOPIC: Analysis of Sub-synchronous Frequency Interactions in Power Systems Using Dynamic Phasors Based Small Signal Stability Assessment
PRESENTER: Chandana Karawita., Ph.D., P.Eng.
TIME AND DATE: 12:00 Noon, Tuesday, January 24, 2012
LOCATION: Holiday Inn South, 1330 Pembina Highway, Winnipeg

◇ Cash bar available at Noon.
◇ Lunch served at 12:15 PM.
◇ Meeting concluded at 1.30 PM.
◇ Cost of the meal (payable at the door).

Early registration(On or Before 20th Jan..)
IEEE Members - **\$15.00**
Non-Members - **\$19.00**

Late registration (After 20th Jan.)
IEEE Members - **\$17.00**
Non-Members - **\$21.00**

The IEEE PES Winnipeg Chapter must guarantee a minimum attendance to the hotel, so please take a moment to register early by RSVP to **Jieping Shao** by **Friday Noon, Jan 20, 2012**, in one of the following ways:

Email: JShao@hydro.mb.ca
Phone: 360-3743

Abstract:
The small signal stability analysis can be used to analyze sub-synchronous interactions in power systems if the network dynamics are properly modelled using dynamic phasors. The application of dynamic phasors for small signal stability models were discussed in a previous presentation (May 2011) by Dr Udaya Annakkage.

TGS has recently developed an in-house program (TGSSR) using this modelling technique. The program can handle generator units with multi-mass shafts, LCC and VSC HVdc systems, FACTS devices (SVC and STATCOM) and Wind turbines. This presentation will discuss the following interaction issues analyzed using the program. The validations using PSCAD simulations will also be presented.

- (1) Multi-in-feed HVdc interactions
- (2) Torsional interactions between generator-turbine units and LCC HVdc systems
- (3) Torsional interactions between generator-turbine units and VSC HVdc systems
- (4) Sub-synchronous interactions between series capacitors and type-3 wind turbines

Biography:
Chandana Karawita, Ph.D., P.Eng.
Chandana Karawita received the B.Sc. (Eng) degree from the University of Moratuwa, Sri Lanka in 2002 and the M.Sc. and Ph.D. degrees from the University of Manitoba, Canada in 2006 and 2009, respectively. He is currently working for TransGrid Solutions as a power systems studies engineer. Chandana has performed power systems planning studies in HVdc and HVac integrations and wind power generation using PSS/E and PSCAD software packages. He specializes in small signal stability assessment and power system stabilizer tuning, HVdc interaction studies and sub synchronous oscillation studies of power systems. Chandana is a registered professional engineer in the province of Manitoba.

Re: IEEE PES Luncheon Meeting at 12:00 Noon on Tuesday, January 24, 2012

Name: _____ Any Diet Restrictions: _____

Company: _____

Telephone no.: _____ Number in party: _____

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