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IEEE Power and Energy Society (PES) Malaysia Chapter

invites All Electrical Engineering Academicians & Professionals to a Distinguished Lecturer Program (DLP) on

THE SMART GRID ADDRESSES THE GRID INTEGRATION CHALLENGES OF DISTRIBUTED GENERATION

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Joseph Loring Professor of Elect & Comp Eng.
Director of the Advanced Research Institute
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Date: 7 December 2012
Venue: Lecture theatre DK3,
College of Information Technology, UNITEN
Time: 3:00 pm – 5:00 pm

BACKGROUND

Dr. Saifur Rahman is the Joseph R. Loring professor of electrical and computer engineering and the founding director of the Advanced Research Institute at Virginia Tech. He is a Fellow of the IEEE, the Editor-in-Chief of the IEEE Transactions on Sustainable Energy, and a distinguished lecturer of the Power & Energy Society. He is the chair of the National Science Foundation (NSF) Advisory Committee on International Science and Engineering. He holds a BS degree in electrical engineering from Bangladesh University of Engineering and Technology. He received an MS in electrical sciences from State University of New York at Stony Brook and a Ph.D. in electrical engineering from Virginia Tech. Saifur Rahman directs the Center for Energy and the Global Environment and the Consortium for Intelligent Grid Research, Analysis and Education from Virginia Tech. He served for three years as a program director in the Engineering Directorate at NSF. He was a research scientist at the Tokyo Electric Power Company, Japan for one year. He has also worked as an electrical engineer with Progress Energy in North Carolina and the Brookhaven National Laboratory in New York. He has consulted for the World Bank, the Asian Development Bank, the United Nations Development Program and the US Agency for International Development. He has served as the chair of the IEEE Publications Board, the Lifelong Learning Committee,

Periodicals Committee and the Products and Services Committee. He is currently serving as the vice president for Publications for the IEEE Power & Energy Society, and a member of the IEEE-USA Energy Policy Committee. His research interests include: Power System Planning, Power System Reliability, Power System Quality, Large Scale Power System Operation and Control Renewable Energy and Distributed Generation Resources (RE& DGE), Smart Grid System, and many others.

DLP ABSTRACT

Historically electric power systems have been designed to provide bulk electricity reliably and at the cheapest possible cost. Now these requirements are being broadened by the need for security and environmental sustainability. As many developing countries begin to industrialize to provide jobs and better living conditions to its citizens, the requirements for reliable, secure and environmentally sustainable supply of electricity becomes paramount. Due to the high amount of CO2 emissions from fossil fuel power plants (eg.,1 kWhr of electricity from a coal-fired power plant produces 1 kg of CO2), there is now significant pressure to reduce the use of fossil fuels for the production of electricity. World leaders are now looking for alternatives resources for electricity, which are environment friendly. This brings in solar, wind, hydro and biomass as alternate sources of electricity. But they are generally more expensive and large scale applications are yet to develop. In addition, wind and solar electricity generation sources have their own challenges - primarily intermittency. Many believe that the smart grid – due to its inherent communication, sensing and control capabilities – will have the ability to manage the load, storage and generation assets in the power grid to enable a large scale integration of distributed generation.

The smart grid brings in sensing, control, communications, signal processing, cyber security applications to the electric power system. And a combination of these provides a powerful set of tools to the electric power system operator to efficiently and reliably operate the system which can potentially include millions of load points, generators and storage devices.

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