

# Speaking of Engineering...

## Have you ever wondered...



Richard Crowdis

**about the approaches to long distance electric power transmission and delivery systems through remote terrains and subsea crossings?**

**Richard Crowdis  
Vice President and Project Director  
Energy, Black & Veatch**

Richard Crowdis, vice president and project director with Black & Veatch, a leading global engineering, consulting and construction company with a mission of Building a World Difference, will be in St. John's to talk about approaches to long distance electric power transmission and delivery systems through remote terrains and subsea crossings.

Power transmission challenges will cause costs to rapidly expand based on distance, roughness and remoteness of terrains. Mr. Crowdis' presentation will outline traditional approaches as well as a summary of the technologies in the high-voltage alternating current (HVAC) and high-voltage direct current (HVDC) transmission line systems. Power transmission and redundancy through subsea crossings, including HVDC transmission lines inside of large and long conduits or tunnels, will also be discussed. Finally, Mr. Crowdis will present a comparative service and cost analyses matrix for evaluation of transmission systems, including substations.

Mr. Rick Crowdis is a director in the power transmission and distributions systems services for the Black & Veatch's Energy Business and provides overall project leadership and direction for the performance of transmission engineering and construction projects for Black & Veatch clients. He has over 33 years of transmission line and substation design experience and has been actively involved with numerous transmission and substation projects up to 765kV in North America and around the globe. His work involves physical design and control and protection design for both new and existing energized facilities. Black & Veatch is a global leader in power generation and transmission, including renewable alternative energy sources such as hydropower, solar, and wind-energy.

**Speaking of Engineering** is hosted by the Faculty of Engineering and Applied Science at Memorial University and the Professional Engineers and Geoscientists of Newfoundland and Labrador.

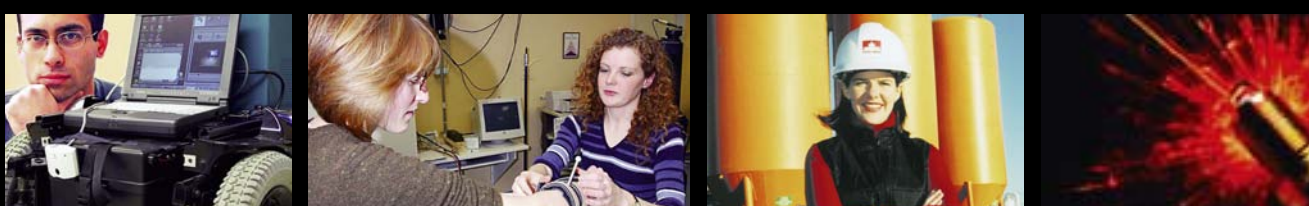
**Thursday, Mar. 18, 2010, 7:30 p.m.  
Memorial University, St. John's Campus  
S.J. Carew Building; Room EN2006**

Reception to follow  
Admission is free. All are welcome.  
Parking is available in Lot 16

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