# Powering Olympic Games

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**Abstract:** Vancouver, British Columbia was hosting the 2010 Olympic Winter Games. Such event needs high levels of electric reliability to support the unique requirements associated with hosting an event that attracts more than three billion television viewers and 75 million website visits worldwide. The total Games Time load was approximately 140 MW delivered to about 120 sites, of which 17 are major competition and non-competition venues having extraordinary reliability requirements. BC Hydro has worked with the Vancouver Organizing Committee for the Olympic Games (VANOC) to provide a sustainable solution to satisfy this need for highly reliable power. This presentation will address the challenges faced by the power system when hosting an event of such magnitude, as will be case of the next Olympic Games in Rio in 2016.

The unique challenges and solutions were implemented to deliver power to each of the 17 Olympic venues was presented. This work has involved estimating load and designing the required capacity, reliability and redundancy to power that load. Analytical methods have included IEEE Gold Book methodology for analyzing extremely reliable power delivery systems from high voltage substation source through to low voltage critical end user, including the venues' internal electrical systems. These methods have helped to confirm the soundness of VANOC's planned approach to Powering the 2010 Games. The planned approach to powering the 2010 Games has been carbon-neutral and has not been contribute to global warming. The calculatedly reliability performance statistics for the planned power infrastructure will be presented and discussed. The critical roles of utility and backup generators in reliably serving the load will be reviewed.

**Meliha B. Selak** is a Specialist Engineer in Electrical Power Systems with BC Hydro Utility. She has an Electrical Engineering degree from the University of Sarajevo and has over 30 years of experience in various aspects of power systems engineering including utility protection, research & development, project management and consulting on international projects. Prior to joining BC Hydro in 2000, she worked as a research engineer in the Power System Group at the University of British Columbia on Real-Time Power System Simulator in connection with EMTP. After graduation for the University, she was with Energoinvest, Sarajevo for 18 years. Her technical activities include power system protection and control applications, power system analysis, evaluations and interconnection studies for the various plants connecting to the power system, as well as development of the protection guidelines.

She is a registered professional engineer in the Province of British Columbia and she is a senior member of IEEE. Meliha is a member of the IEEE Power & Energy Society (PES) Governing Board and she is currently serving as the Vice President for Chapters. . Also, she is a member of the IEEE Power System Relay Committee (PSRC), working on IEEE guide for "Protective Relaying of Utility-Consumer Interconnections". She has written numerous technical reports and papers on the power system subjects and she is also a paper reviewer. Meliha is a distinguished lecturer of IEEE PES.
Meliha received numerous awards for her service to British Columbia's Power and Energy community through her leadership role in IEEE Vancouver Section and IEEE PES Chapter Chair. Meliha is a recipient of the 2010 IEEE Canada Award in recognition of dedicated and distinguished service to the profession" and 2012 IEEE PES Vancouver Outstanding Engineer Award for "Contribution to the Engineering Profession at Local and Global level".