

Presentation # 5

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Title: Long-term Distribution Planning at BC Hydro

Abstract

BC Hydro's power delivery system (including transmission, substation and distribution assets) has served British Columbia's (BC) customers and communities very well for many decades. Investments were prudent, efficient and technologically sound as demonstrated by energy delivery costs that have been amongst the lowest for all North American utilities. However, there is growing evidence of the need to modernize BC's grid to meet the needs of the province's customers and communities. In the face of such factors as growth in demand, climate change-related system impacts, and human resource shortages to name only a few, BC Hydro will have to change how it plans, designs and operates its system to continue to provide the province of BC with reliable power, at low cost, for generations.

This presentation outlines approved BC Hydro distribution planning practices which are intended to provide planning criteria consistency among regional districts in BC and to guide planners and engineers in the way they plan a modern grid. The first part of the presentation describes the Asset Management Framework for distribution planning, which specifies the objectives, performance requirements, and long-term distribution planning process, including the distribution planning cycle, and load forecasting.

BC Hydro's long-term reliability guiding principle is to achieve "best-in-class reliability by customer segment", which means delivering energy and meeting customer reliability expectations while maintaining customer satisfaction rating targets. Customer reliability has been incorporated into the Asset Management Framework to optimize the strategic decision-making process. The second part of the presentation provides guiding criteria for distribution long-term planning in terms of reliability.

The last part of the presentation describes the BC Hydro's Smartgrid vision and the distribution planning criteria to be used as a bridge between the Smartgrid vision and its implementation. The updated distribution planning criteria include areas such as primary system configurations, system expansion, voltage regulation, distribution losses, system protection, control and automation, and distributed generation.