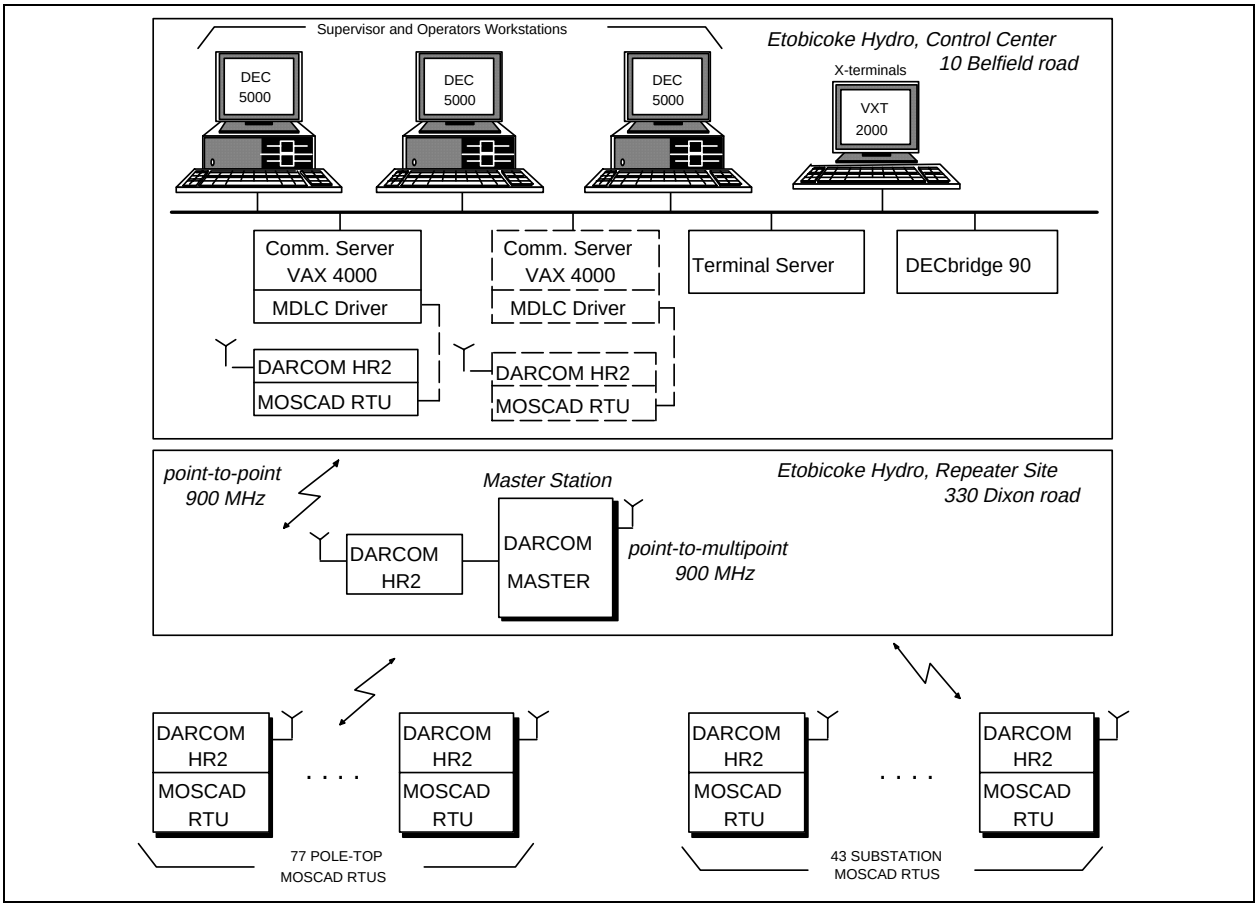
Etobicoke Hydro, Canada
Distribution Management System

Electricity Application

Project Description



GENERAL

Etobicoke Hydro has installed an advanced and integrated Distribution Management system. In this project, Etobicoke Hydro uses Motorola's MOSCAD RTU and DARCOM radio system as the backbone for their supervisory control and data acquisition system for the city of Etobicoke.

The new system improves the performance of Etobicoke Hydro's 27.6/16 kV network in providing service reliability and efficiency.

MOSCAD & MDLC

The MOSCAD RTU is installed in different configurations: pole-top, substation controller and pad-mount.

The MDLC communication is implemented over a 900 MHz point-to-multipoint radio system with warm-switchover redundancy. Two sets of point-to-point radios at the control center provide an additional level of redundancy for the communication system.

The MDLC protocol supports polling and contention modes of operation.

SYSTEM OVERVIEW

The Master Control Center (MCC) initially consisted of three DEC 5000 workstations changing to DEC Alpha workstations in Phase II with five 19" CRTs. ABB's S.P.I.D.E.R is the platform integrating CADOPS (distribution management software with SCADA functions). A custom interface is being implemented to permit CADOPS models to be built automatically from IBM's GFIS AM/FM (Area Mapping and Facilities Management) contents.

The system is open and it interconnects various hardware and software subsystems, including: Open System Foundations OSF/1 (Unix), OSF/Motif and X-Window for Man-Machine Interface and SQL (Structured Query Language) for database communication.

The communication server communicates with the MOSCAD RTUs via the MDLC Driver for VAX/VMS.

CAPACITY & FUTURE EXPANSION

The system initially consisted of 125 MOSCAD RTUs, including 77 pole-top RTUs, 43 substation RTUs, and 5 pad-mount RTUs.

Etobicoke Hydro is in process of expanding the number of pole-top RTUs. □

FEATURES	BENEFITS
MDLC Driver for VAX/VMS	Allows connection of any SCADA system running on VAX/VMS to MOSCAD RTUs, gaining all the features of the MDLC protocol
MDLC communication protocol	Optimized, efficient, and reliable data communication to handle large volumes of data over various communication media
Multi-protocol processor based on Motorola 68302	Allows multi-tasking operation with on-line network monitoring, traffic analysis, on-line diagnostics, remote monitoring and error logging
Upload/download capability	Application program can be easily changed and downloaded to the RTUs in the field
Remote diagnostics	Permits maintenance staff to identify and correct problems at the RTUs from any site in the system

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