Generator overhaul gets operations flowing smoothly

**Location**
Toronto, ON

**Segment**
Waste water treatment

**Problem**
Need a complete generator control upgrade

**Solution**
To design, supply and commission the switchgear protection upgrades

**Results**
A new generator control panel. Project started March 2007 and was completed in November 2009.

**Background**
A major regional waste water pumping station underwent system upgrades, including upgraded pump controls, and emergency generator paralleling and load controls, as well as generator and pump protection upgrades.

**Challenges**
Eaton was awarded a contract to design, supply and commission the switchgear protection upgrades and the new generator control panel.

**Solution**
The electrical switchgear upgrades included:
- Supply of new switchgear doors to match existing
- New generator protection relays for three emergency generators (750 and 1500 kW)
- New motor protection for four 750 kW waste water pumps
- Transformer protection relays for two main transformer breakers
- Remote pump control panels complete with RTD temperature monitoring
- Installation of pre-wired switchgear doors for generator, main breaker, tie breaker and motor feeder cells

**Results**
The project included the design, supply, test and commission of a new generator control panel (GMCP) for control of the three existing emergency generators.

The GMCP provided the following controls:
- Automatic generator starting upon loss of power
- Generator sequencing
- Generator auto-synchronizing and paralleling
- Generator load control

GMCP controls included provisions for future closed transfer control for return to normal power.

Project highlights:
- Generator protection
- Auto synchronizing
- New protection

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**Success Story**
Generator control upgrade

**Market served**
Waste water treatment