Re: Page B-109, Replace Recloser Control Panels, $222,500

Q. Please provide, if available, an Engineering Report that deals with the deterioration of these, and others if they have been identified, electronic recloser control panels that have experienced rusting and the options that have been considered for dealing with these panels.

A. There is no engineering report, however, Hydro can provide the following information.

The existing Cooper Form 3 and 3A recloser control panels are a painted steel design which have been in service for about 35 years and have been exposed to all sorts of weather conditions including a highly corrosive coastal environment for many of the recloser locations. Maintenance crews have patched and repaired these panels over the years, however within the last several years many of these recloser control panels have deteriorated beyond repair and parts are no longer readily available from the manufacturers. The cost of these retrofits is prohibitive since it can amount to 80% of the price for a new stainless steel recloser control panel. The stainless steel recloser panels have long service lives in adverse conditions; this is especially important in the rural coastal locations in which Hydro provides service. Any replacement parts that may be available for these older Cooper Form 3/3A recloser control panels now require reverse engineering by the manufacturer which has resulted in long delivery times, typically 16-18 weeks.

Comments received from Hydro operating staff regarding these older Form 3/3A recloser control panels include the age and condition of the

electronic circuitry, very poor cabinet conditions and lengthy delivery times for replacement parts should they be available. These reclosers are considered the most important fault protection device for the various distribution systems that Hydro services. It is also considered to be a critical protection device as it relates to the safety and protection of our line crews when performing routine hot line work and other power system repairs.

Once the integrity of the control panel has been compromised, the ingress of moisture and contaminants occurs, thus affecting the internal electronic components, resulting in malfunction of the recloser and power outages to Hydro customers. For the eight recloser control panels proposed for replacement in 2008, there have been 27 failure incidents and five of these recloser control panels had major retrofit work including re-fabrication of the entire control panel.