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Electric Utility 'Recloser' Program - May cause 'Single-Phasing' Condition

Summer Thunderstorms are a Leading Cause of Outages

READING ELECTRIC, a leading supplier of electro-mechanical equipment, services, and problem solver for Industrial and Commercial customers for over 50 years provides technical information to the Region's Residential, Commercial and Industrial Community. This Bulletin provides information on the Electric Utility's Program to improve electrical power reliability by installing new 'reclosers' and resulting 'Single-Phasing' problems.

In 2005, Electric Utilities began the implementation of a program to install a new style 'recloser' on the line that feeds some residential homes, and commercial / industrial facilities. The new 'recloser' will only trip and reclose the affected phase(s) and the remaining phase(s) will not be impacted. For example, if a tree branch were to create a fault on only one phase downstream from the new 'recloser', only that phase would trip and reclose; the remaining two phases would not be interrupted. If the downstream fault remains, then the recloser locks out the affected phase(s) until the problem is repaired. Meanwhile, the substation circuit breaker would not trip off-line, so users upstream from the recloser do not experience an electric service interruption. **HOWEVER, three phase users downstream of the new 'recloser' may experience a "loss of a phase" condition (sometimes referenced as "single phasing")** for situations that previously caused a full interruption of electric service.

It has always been advisable that three phase users ensure that equipment can react appropriately to the loss of phase conditions to prevent equipment damage. Given the operation of the new style recloser, it is even more important to ensure that you utilize devices to protect against these conditions. Equipment especially sensitive to 'single phasing' and prone to damage are electric motors. Additionally, preparations should also include confirming that your Transfer Switch senses all three phases rather than controlling the generator operation from only one phase.



If a three phase motor continues to operate in 'single-phase' mode for more than a few minutes, fatal damage will occur to your motor, compressor, pumps or ventilators. Because many facilities are not staffed 24/7, significant damage can occur prior to any normal protection devices operation. Also since lighting and other single phase equipment may not experience a noticeable disruption, the single-phasing condition may continue for a lengthy time period undetected.

It is necessary to install a "Phase Failure, Reversal and Asymmetric Detector" which is an electronic device that monitors the voltage level of every phase, and if a phase loss or unbalance is detected, the device immediately opens the circuit. This device provides 100% protection. The device resets automatically with restoration of the phase. It is highly recommended that your electrical equipment be surveyed by a qualified electrical contractor.



FOR ADDITIONAL INFORMATION contact Russ Yerger, CPS Manager and let READING ELECTRIC's over 50 years of expertise serve you. Contact READING ELECTRIC at 80 Witman Road, Reading, Pennsylvania 19605. Phone: 610-929-5777; Fax: 610-929-1670; Visit our Website at www.readingelectric.com {TB567-070108}