BECKWITH ELECTRIC CO. INC.

Application Tip

Tapchanger Controls
App Tip #4

Autodaptive® Capacitor Controls (ACC) Setpoint – Averaging or Fixed?

The Autodaptive® Capacitor Control (ACC) has the ability to adapt to the following values:

1) The average voltage or setpoint
2) The "bandwidth" or voltage change with bank operation
3) The inverse characteristics and threshold of the operation timer

One of the choices in the application of ACCs on a distribution system is whether to allow the control to operate based on a calculated average voltage at the location (about a seven day average) or to set a fixed setpoint. Other factors in the Volt/VAr management system of the distribution circuit should be considered in this decision.

The issues effecting this decision include:

1) VOLTAGE REDUCTION:
If voltage reduction is implemented on the circuit frequently or for long periods of time, the **average voltage calculation** will be adversely effected. This could cause the operation of the ACC to be biased towards the OFF position. In either choice of operation, temporary voltage reduction operations will bias the control towards the ON position.
Recommendation: fixed setpoint.

2) ADEQUATE CAPACITORS:
If the amount of capacitors located on the circuit is not adequate to maintain unity power factor, **the average voltage calculation** will be adversely effected during long periods of operation at reduced power factor. This could cause the operation of the ACC to be biased toward the OFF direction.
Recommendation: fixed setpoint.

3) SEASONAL VOLTAGE LEVEL OPERATION:
If the LTC or regulator voltage controls are seasonally or occasionally adjusted to operate at different voltages at different times of the year, the **fixed setpoint** will also need to be adjusted. That is, if the distribution system operating voltage is reduced, ACC-controlled capacitor banks with a higher fixed setpoint will be biased towards the ON position and vice-versa.
Recommendation: averaging setpoint or fixed setpoint with CAMP* communication.

* The CAMP™ Remote Communication Module M-2937 could be used in conjunction with the M-2501B Autodaptive Capacitor Control to change setpoints remotely if desired.

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