Advanced Coordination Topics – EasyPower w/ Power Protector

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Topics:

- MCCs and Panels – Creating TCCs
- Enhancing System Protection – Transformer Instantaneous Overcurrent and How to Set
- Phase vs Ground Overcurrent
- Ground Fault Protection and TCCs
- Coordination Between Phase and Ground Protection
- Arc-Flash Calculations and PowerProtector Interaction

TCCs in MCCs and Panels

- Set the correct Load Type
- Any Load Type including “w/TCC” will plot a TCC when MCC is selected.
- Sub-fed MCCs and Panels must be modeled in the one-line FIRST, then added to schedule.

Enhancing System Protection

- In general instantaneous trip elements “in series” will not coordinate.
- However, if there is significant system impedance, the “reach” of the upstream instantaneous trip can be limited.
- Transformers represent substantial impedance, so primary instantaneous element can be used if set above maximum secondary fault current.
- EasyPower can help determine max fault current

Phase and Ground Overcurrent

- By default, when TCC is created, a three-phase fault is assumed.
- Due to TCC “clipping” in PowerProtector, ground fault curves will not be seen.
- Change to SLG fault to see Ground fault protection.
- Transformer connections determine extent of ground fault (zero sequence) current in the system.

Coordination Between Phase and Ground

- Ground fault devices do not see load current or balanced faults, but for a SLG fault, one phase overcurrent device will see the ground fault current.
- Need to consider coordination between upstream ground fault and downstream phase overcurrent device.
- Building to NEC minimum requirements for ground fault creates coordination issues.

Arc-Flash and TCCs

- Arc-flash calcs can be displayed on TCC one-lines
- When settings are changed, arc-flash results are updated dynamically.
- Useful to investigate impact of settings changes on arc-flash.
- Look at how arcing current magnitude can be shown on the TCC.