CT Rated Services
Load or Service- What Do You Meter?

Clay Hullett-Nashville Electric Service
Ron Zook-Greeneville Light and Power

Formulas For Line to Line Voltage!

- Single Θ KVA = (E x I) / 1000
- 3 Θ KVA = (1.732 x E x I) / 1000

- Single Θ Amperes, from KVA = (KVA x 1000) / E
- 3 Θ Amperes, from KVA = (KVA x 1000) / (E x 1.732)

300 KVA 3 Θ Transformer Example

208 Volts L-L

- Amps per Phase?
- 3 Θ Amperes, from KVA = (KVA x 1000) / (E x 1.732)
- = (300x1000)/(208 x 1.732)
- Amps per Phase = 833 Amps

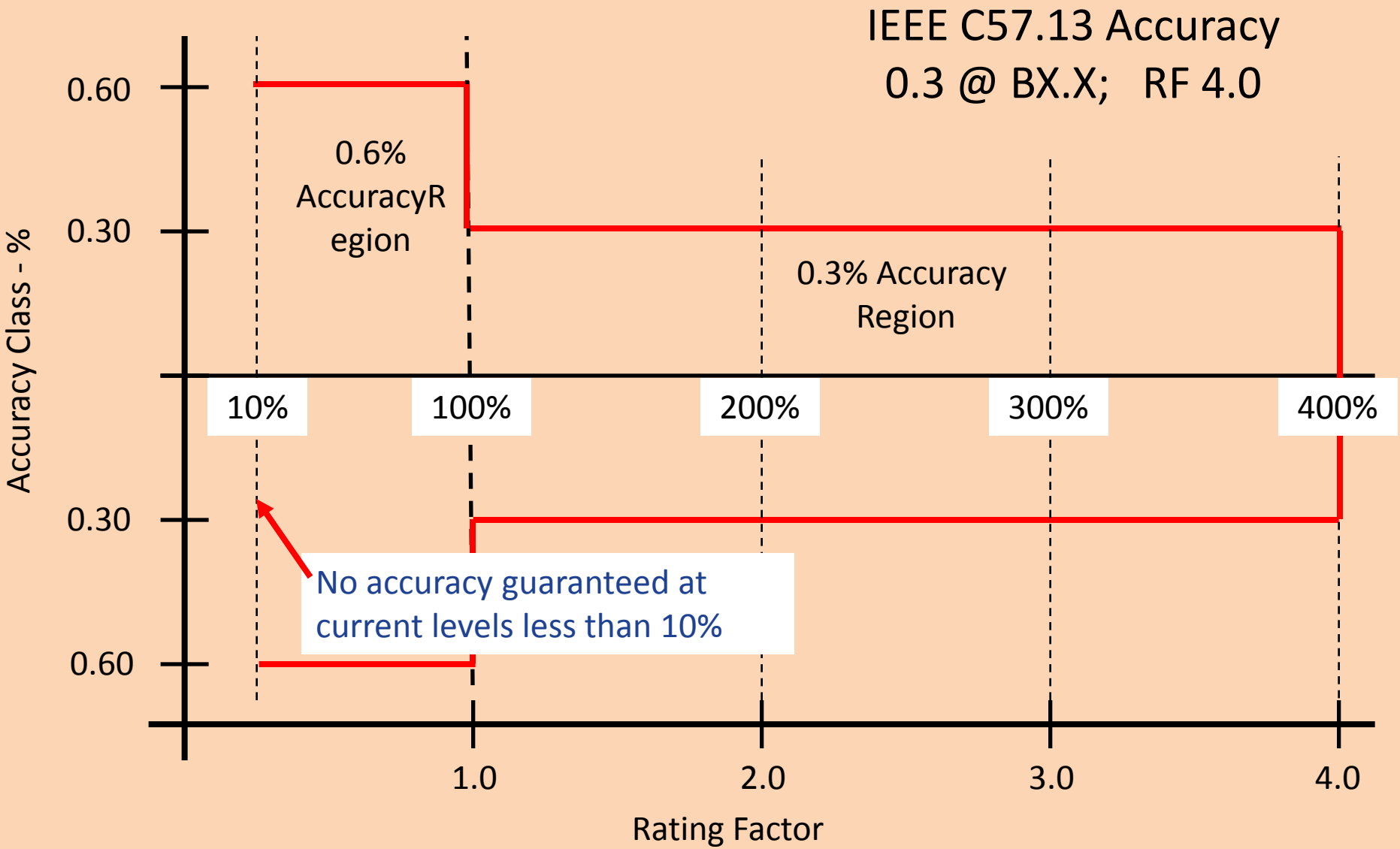
300 KVA 3 Θ Transformer Example

480 Volts L-L

- Amps per Phase?
- 3 Θ Amperes, from KVA = (KVA x 1000) / (E x 1.732)
- = (300x1000)/(480 x 1.732)
- Amps per Phase = 361 Amps

Rating Factor/Temperature/Accuracy Class

CT 0.3 Accuracy Class



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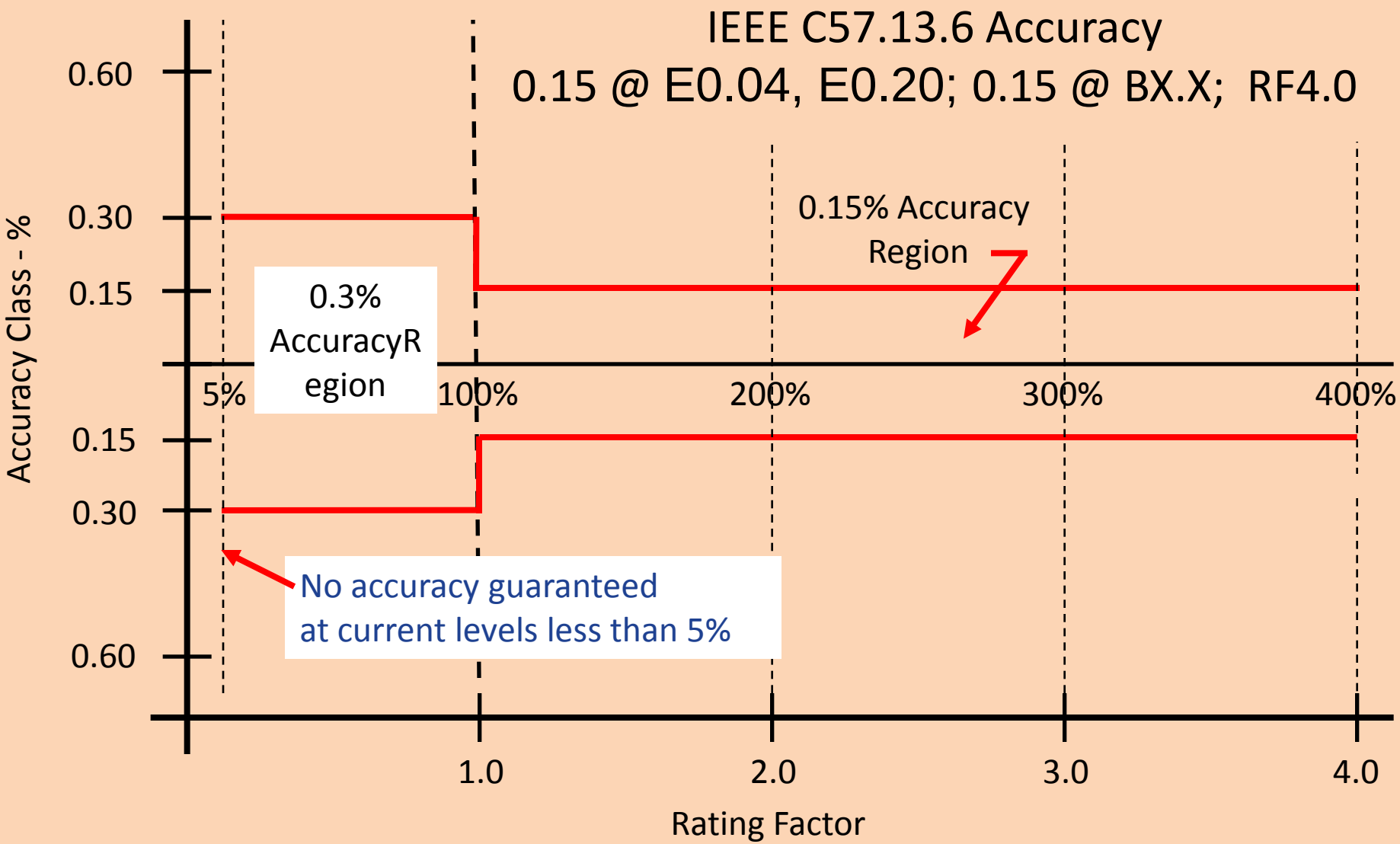
CT 0.15 Accuracy Class



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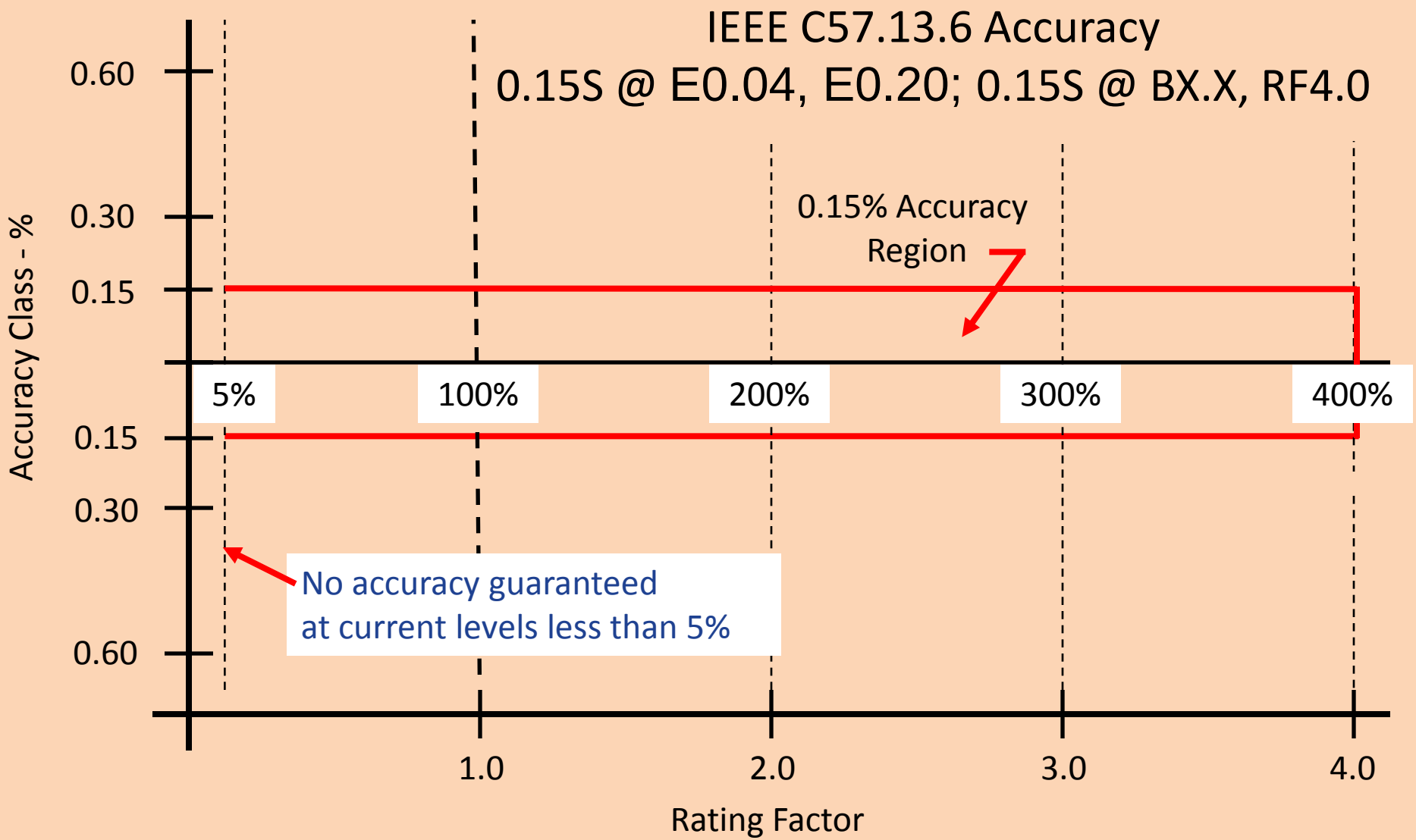
CT 0.15S Accuracy Class



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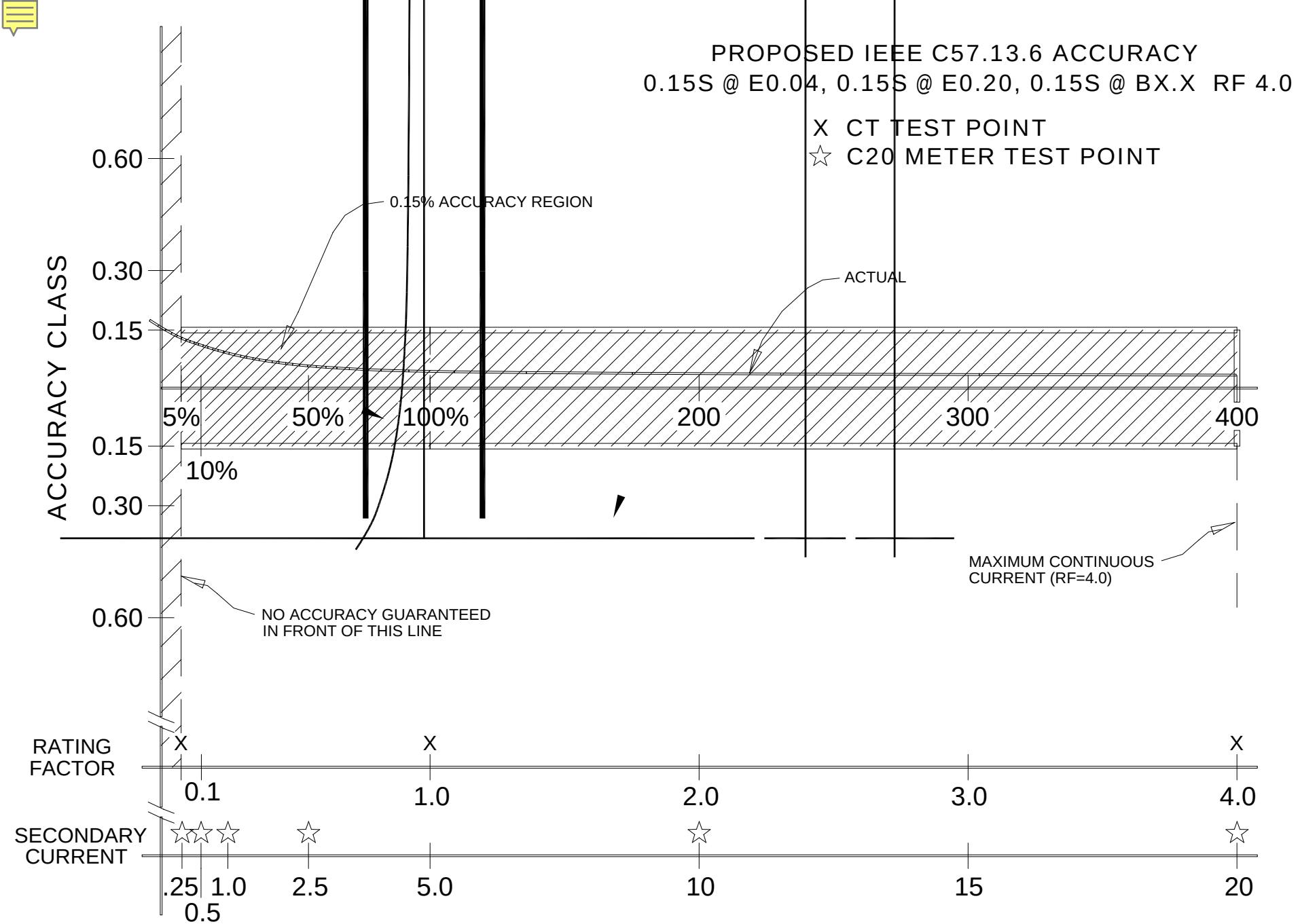

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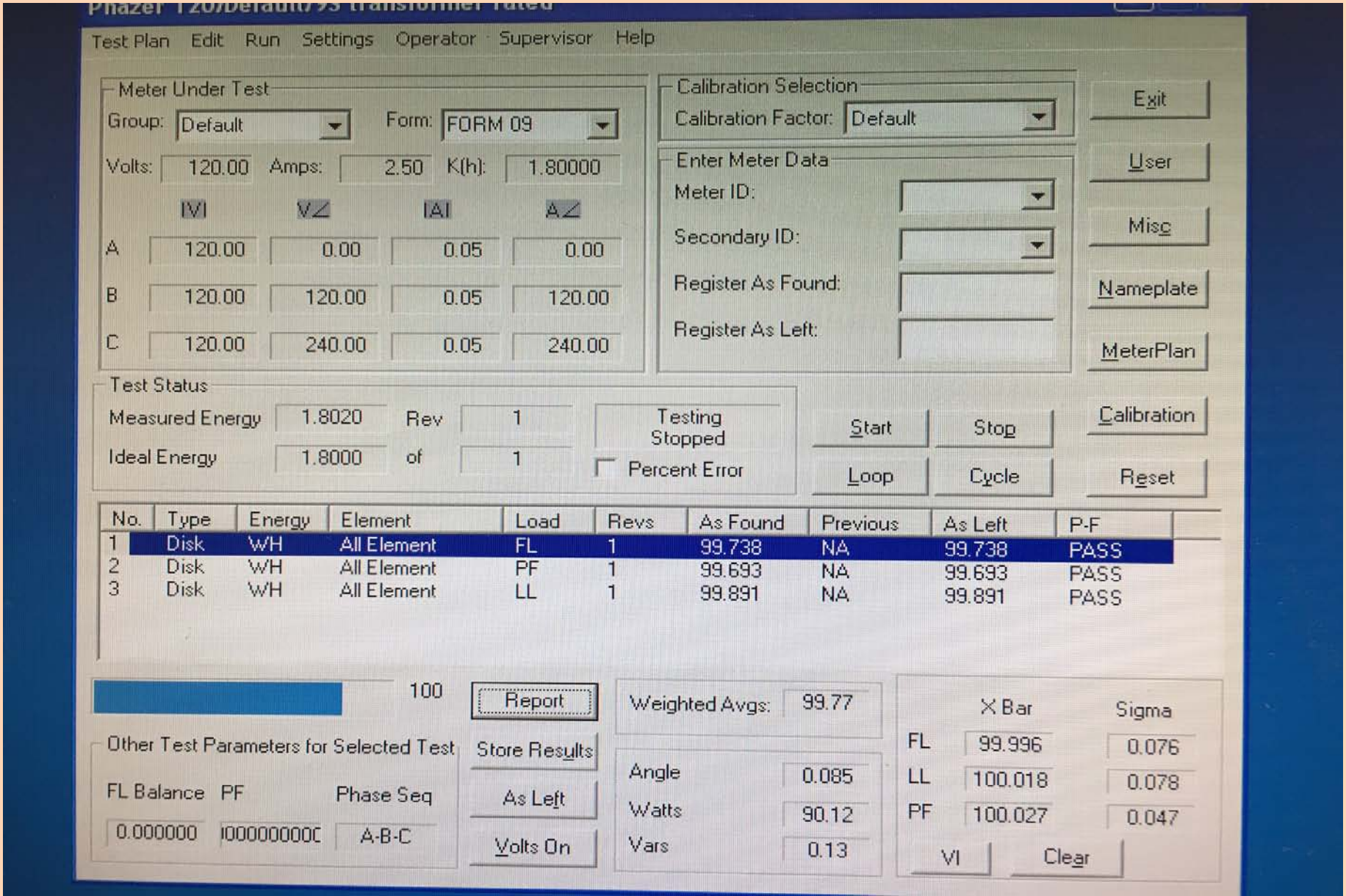
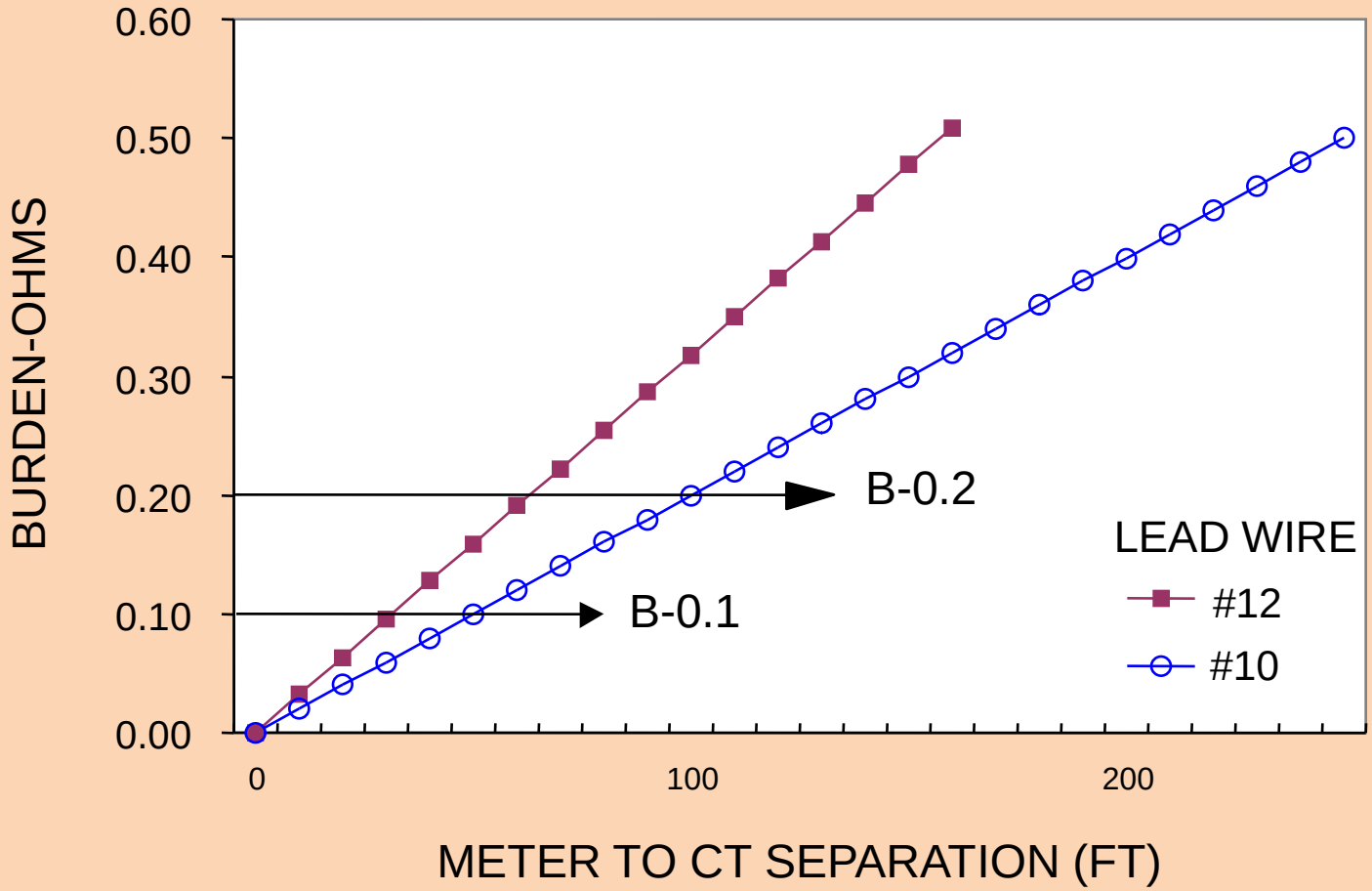
Meter Test at LL of .05AMPS



Additional Information on High-Accuracy Instrument Transformers

- Edison Electric Institute
  - Handbook For Electricity Metering (Eleventh Edition) pages 199-203
- IEEE C57.13.6

Lead Resistance Values



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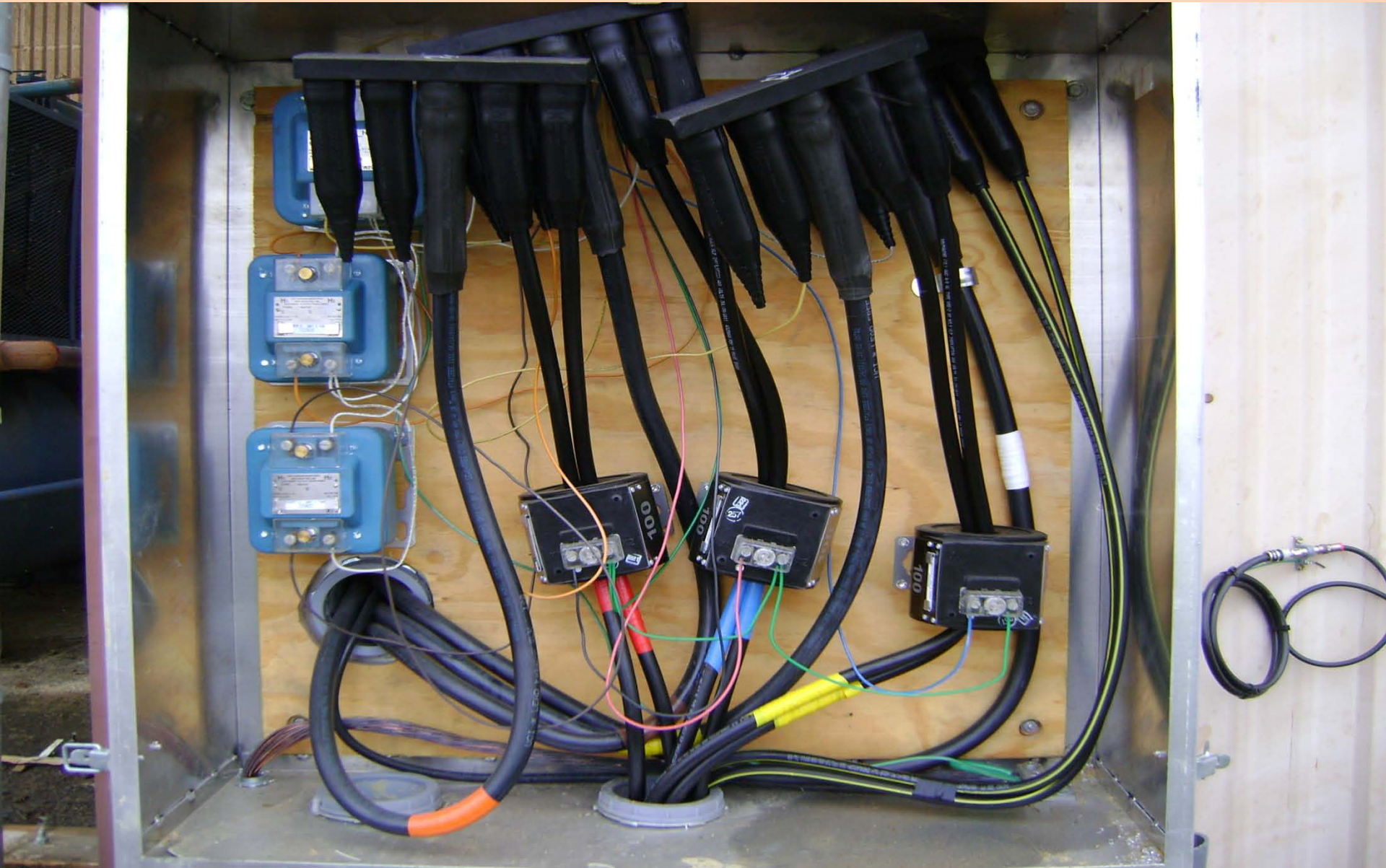
Accuracy Class
"Burden for wire lead length"

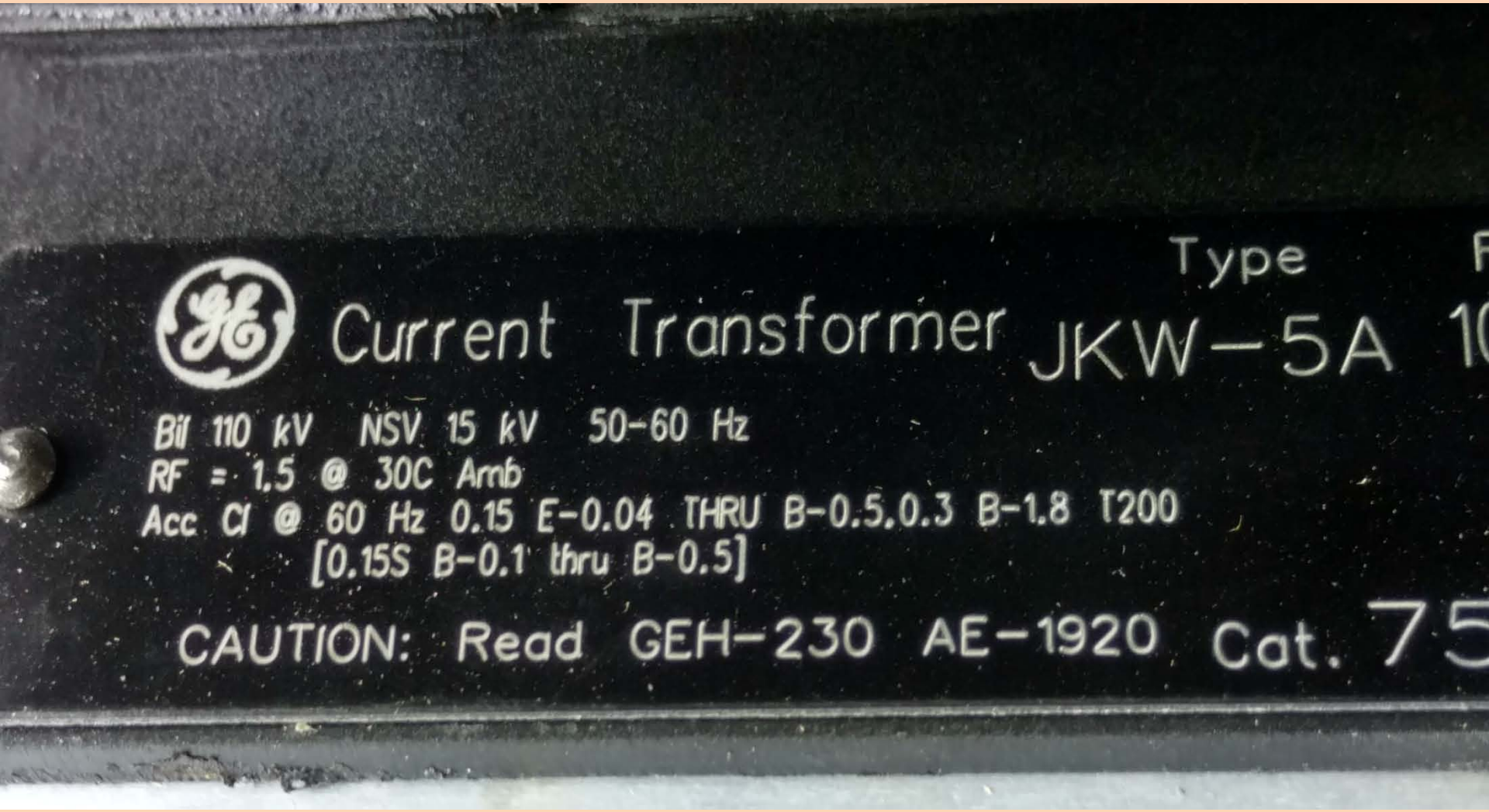
- http://site.ge-energy.com/prod_serv/products/metering/en/downloads/general_info_new.pdf
- http://www.gedigitalenergy.com/products/buyersguide/BG_Intro.pdf

1200 AMP 120/208 Secondary Metering

400 AMP 277-480 Secondary Metering



Rating Factor/Temperature/Accuracy Class

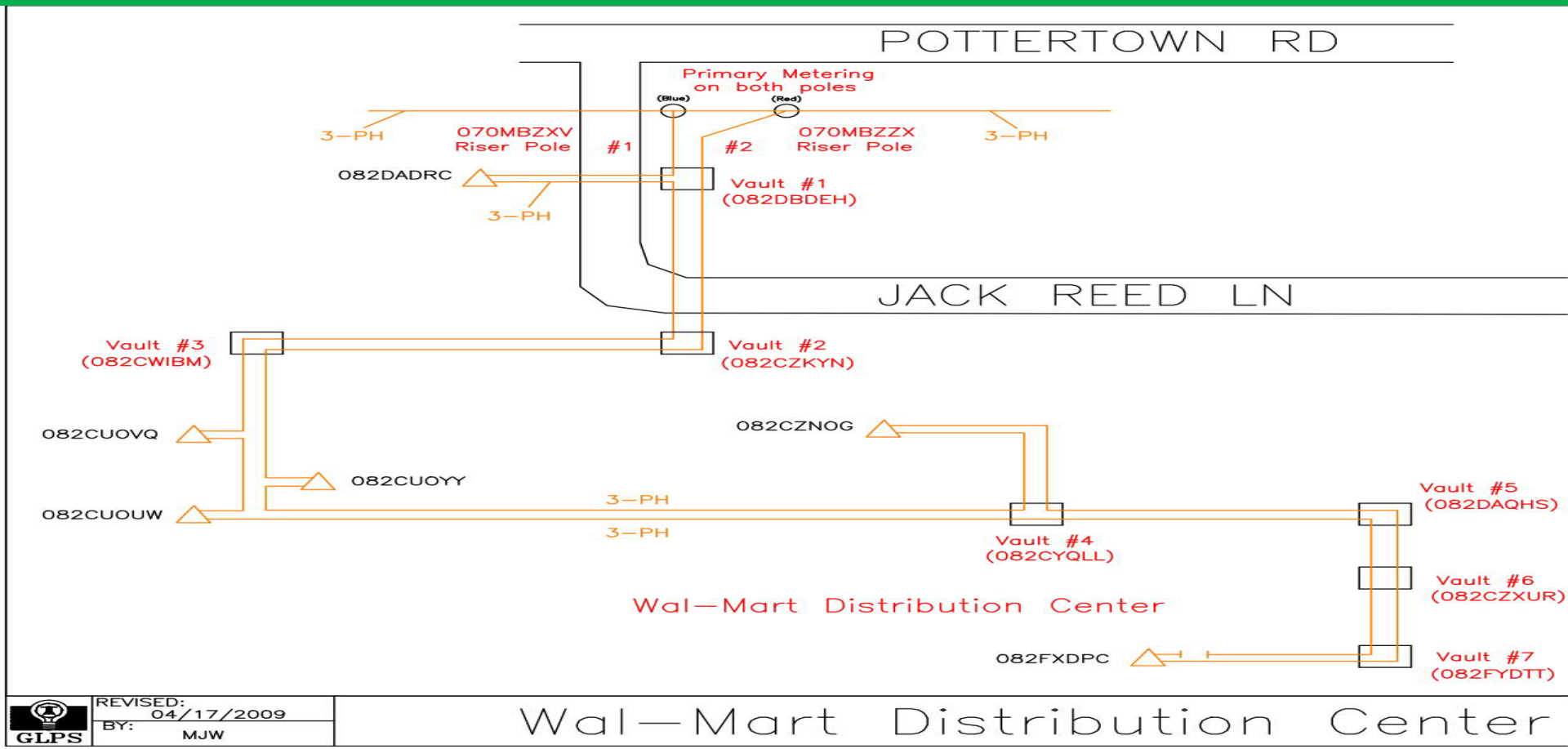


Primary CT Accuracy Class Range (7200 Volts)

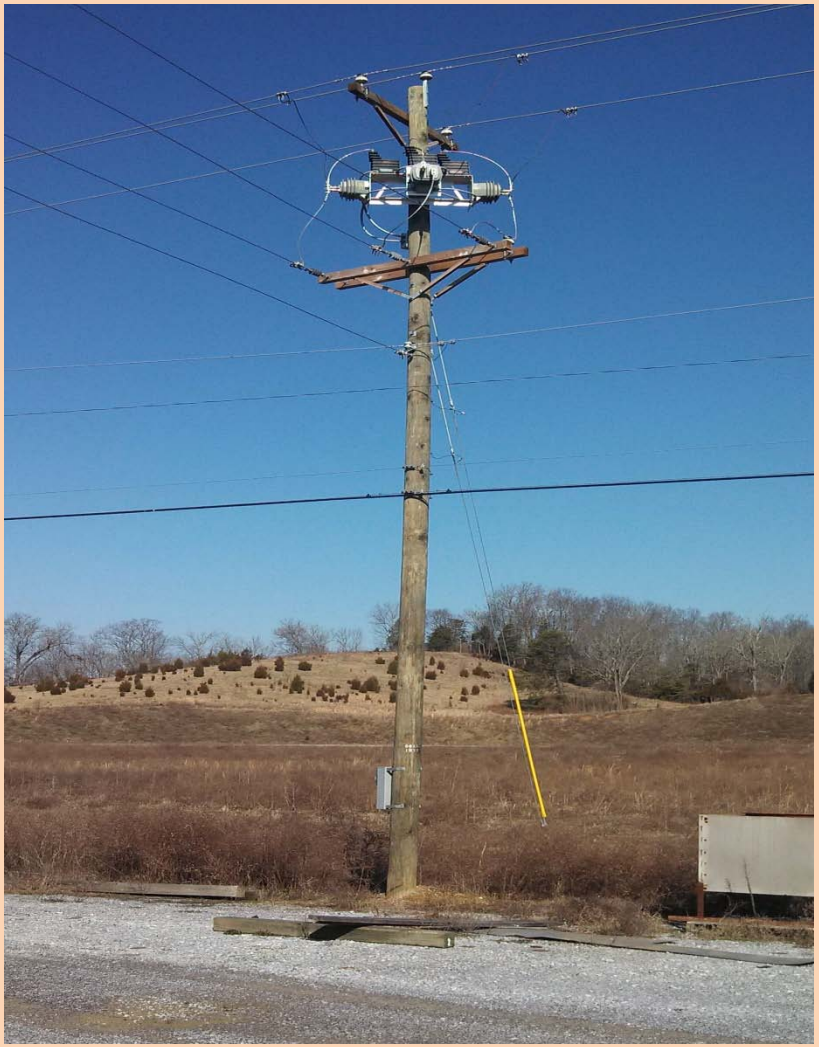
CT Ratio	RF	.15s Accuracy Class (Range 5% Through RF)	Min/Max KVA per Phase	Min/Max KVA 3 phase
10:5	1.5	.5 Amps to 15 Amps	3.6 KVA to 108 KVA	10.8 KVA to 324 KVA
200:5	1.5	(Range 1% Through RF) 2-300A	14.4KVA to 2160KVA	43.2KVA to 6480KVA
20:5	1.5	1 Amp to 30 Amps	7.2 KVA to 216 KVA	21.6 KVA to 648 KVA
50:5	1.5	2.5 Amps to 75 Amps	18 KVA to 540 KVA	54 KVA to 1,620 KVA
100:5	1.5	5 Amps to 150 Amps	36 KVA to 1080 KVA	108 KVA to 3,240 KVA
150:5	1.5	7.5 Amps to 225 Amps	54 KVA to 1620 KVA	162 KVA to 4,860 KVA
1000:5	1.5	(Range 1% Through RF)10-1500A	72KVA to 10800KVA	216KVA to 32400KVA
300:5	1.5	15 Amps to 450 Amps	108 KVA to 3240 KVA	324 KVA to 9,720 KVA
600:5	1.5	30 Amps to 900 Amps	216 KVA to 6480 KVA	648 KVA to 19,440 KVA

Loop Feed

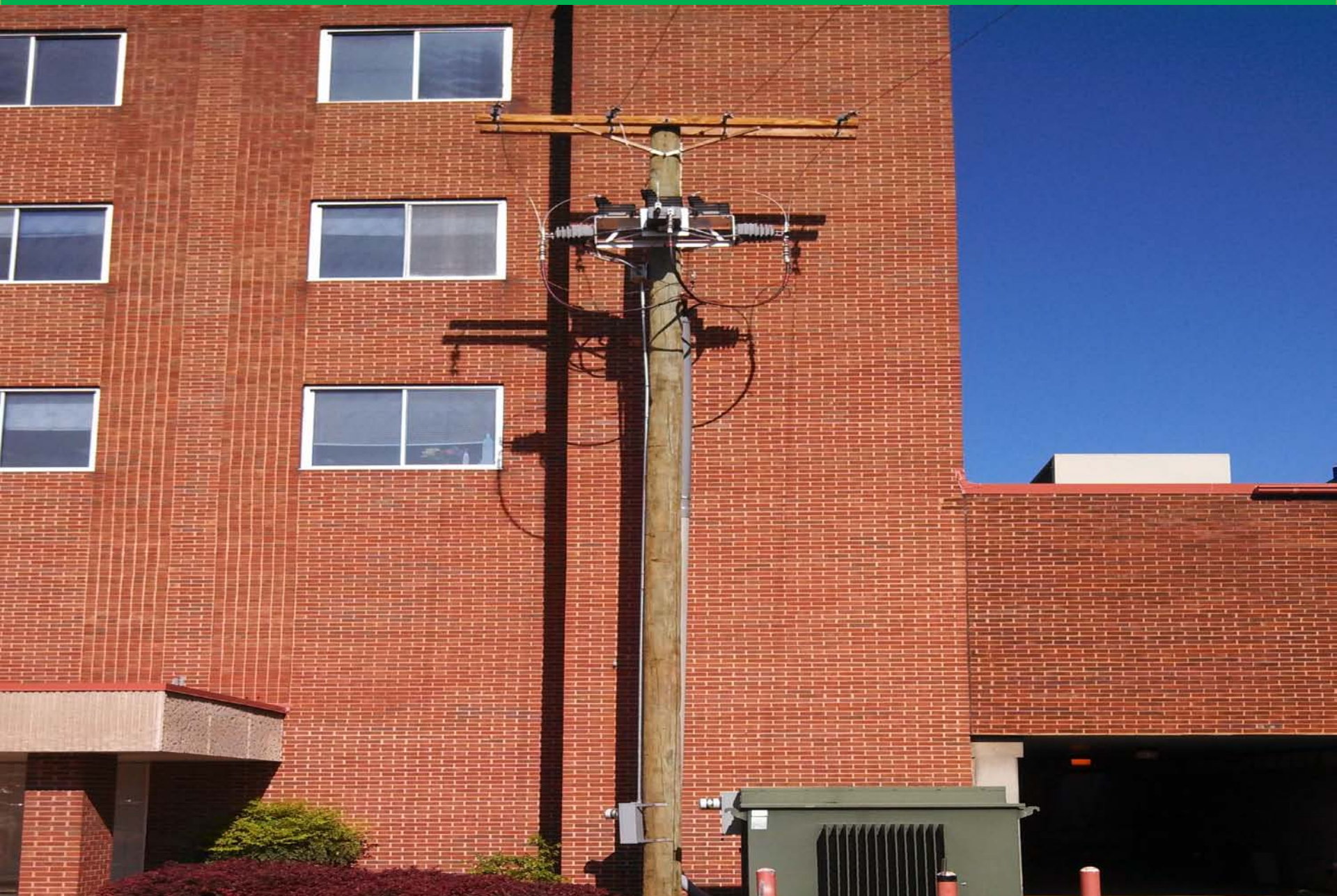
4-1500KVA &2-500KVA



Metering (2) 2500KVA Pads
Feeding (2) 4000 Amp Switchgears



Transformer Loss Compensation



Questions?