

TRAX - Test report

Test Asset

| | |
|------------|------|
| Substation | 2 |
| Position | |
| Job # | |
| Asset ID | 2441 |

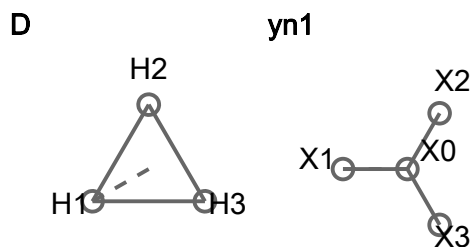
Test Conditions

| | | | |
|---------------------|------------|----------------------------|---|
| Reason | Baseline | <div>°C</div> <div>✓</div> | |
| Weather | Clear | | |
| Ambient Temperature | 24 | | |
| Humidity | 99.00 | | % |
| Date | 2022-09-01 | | |
| Tester | MWJ | | |

Power Transformer Information

| | |
|--------------|----------|
| Manufacturer | GE |
| Serial # | H 880287 |
| Year | 1979 |
| Vector group | Dyn1 |

| | | |
|-------------------------|-------------|-----|
| Core design | Core | |
| Tank type | N2 Blank. | |
| Class | OA/FA | |
| Coolant | Mineral oil | |
| Phases | 3 | |
| Frequency | 60 | |
| Weight | 75000 | kg |
| BIL / Lightning Impulse | 250 | kV |
| Impedance HVLV | 7.19 | % |
| Impedance HVTV | | % |
| Impedance LVTV | | % |
| Oil volume | 3460 | GAL |
| Oil temp. | 30 | °C |



Transformer windings

| Winding | Voltage (kV) | kVA | Rated I | # Taps | Nominal | Changer type | Tap changer Model | Tap setting | Winding material |
|-----------|--------------|--------|---------|--------|---------|--------------|-------------------|-------------|------------------|
| Primary | 43.80 | 10 000 | 131.9 | 5 | 3 | DETC | | 4 | Al |
| Secondary | 8.320 | 10 000 | 694.7 | 33 | 17 | OLTC | LRT200 | 4 | Cu |

Insulation resistance

| | | |
|----------------------------|-----------------------------|----------------------|
| High to Low (Low grounded) | Low to High (High grounded) | High + Low to Ground |
|----------------------------|-----------------------------|----------------------|

| Reading | | Testvoltage (kV) | Reading | | Testvoltage (kV) | Reading | | Testvoltage (kV) |
|---------|------|------------------|---------|------|------------------|---------|------|------------------|
| | MOhm | | | MOhm | | | MOhm | |

Comment:

Test results





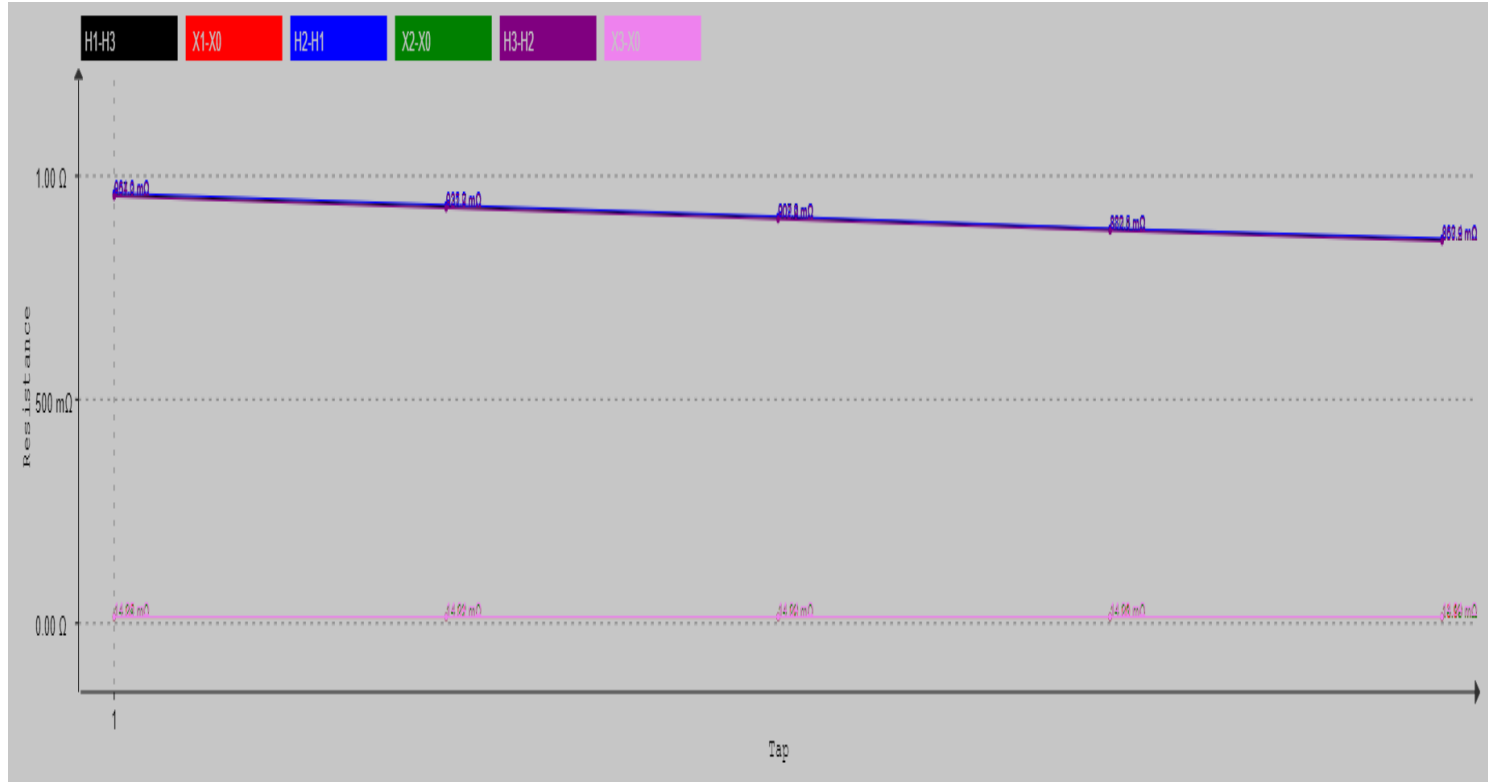
Winding resistance measurements


| Connection ▼ | Tap (P) | Current | 28°C Resistance corrected to 65°C | Stability | Variation | 28°C Resistance 2 corrected to 65°C | Stability 2 | Variation 2 |
|--------------|---------|---------|--|-----------|-----------|---|-------------|-------------|
|--------------|---------|---------|--|-----------|-----------|---|-------------|-------------|

| | | | | | | | | |
|-----------------|----|---------|----------|---------|--------|----------|---------|--------|
| H1-(H3 / X1)-X0 | 2R | 10.00 A | 1.097 Ω | 100.0 % | --- | 16.07 mΩ | 99.97 % | --- |
| H2-(H1 / X2)-X0 | 2R | 9.999 A | 1.102 Ω | 99.99 % | --- | 16.32 mΩ | 99.97 % | --- |
| H3-(H2 / X3)-X0 | 2R | 10.00 A | 1.094 Ω | 99.99 % | 0.79 % | 16.45 mΩ | 99.97 % | 2.37 % |
| H1-(H3 / X1)-X0 | 1R | 10.00 A | 1.068 Ω | 99.99 % | --- | 16.06 mΩ | 99.97 % | --- |
| H2-(H1 / X2)-X0 | 1R | 10.00 A | 1.072 Ω | 99.99 % | --- | 16.30 mΩ | 99.99 % | --- |
| H3-(H2 / X3)-X0 | 1R | 10.00 A | 1.064 Ω | 100.0 % | 0.78 % | 16.44 mΩ | 99.97 % | 2.35 % |
| H1-(H3 / X1)-X0 | N | 10.00 A | 1.040 Ω | 100.0 % | --- | 16.05 mΩ | 99.98 % | --- |
| H2-(H1 / X2)-X0 | N | 10.00 A | 1.043 Ω | 99.99 % | --- | 16.30 mΩ | 99.99 % | --- |
| H3-(H2 / X3)-X0 | N | 10.00 A | 1.035 Ω | 100.0 % | 0.74 % | 16.44 mΩ | 99.98 % | 2.36 % |
| H1-(H3 / X1)-X0 | 1L | 10.00 A | 1.010 Ω | 100.0 % | --- | 16.04 mΩ | 99.97 % | --- |
| H2-(H1 / X2)-X0 | 1L | 10.00 A | 1.012 Ω | 100.0 % | --- | 16.29 mΩ | 100.0 % | --- |
| H3-(H2 / X3)-X0 | 1L | 10.00 A | 1.005 Ω | 100.0 % | 0.61 % | 16.43 mΩ | 99.97 % | 2.36 % |
| H1-(H3 / X1)-X0 | 2L | 10.00 A | 982.5 mΩ | 100.0 % | --- | 16.04 mΩ | 99.97 % | --- |
| H2-(H1 / X2)-X0 | 2L | 10.00 A | 986.2 mΩ | 99.99 % | --- | 16.27 mΩ | 99.95 % | --- |
| H3-(H2 / X3)-X0 | 2L | 10.00 A | 978.7 mΩ | 100.0 % | 0.76 % | 16.44 mΩ | 99.99 % | 2.44 % |

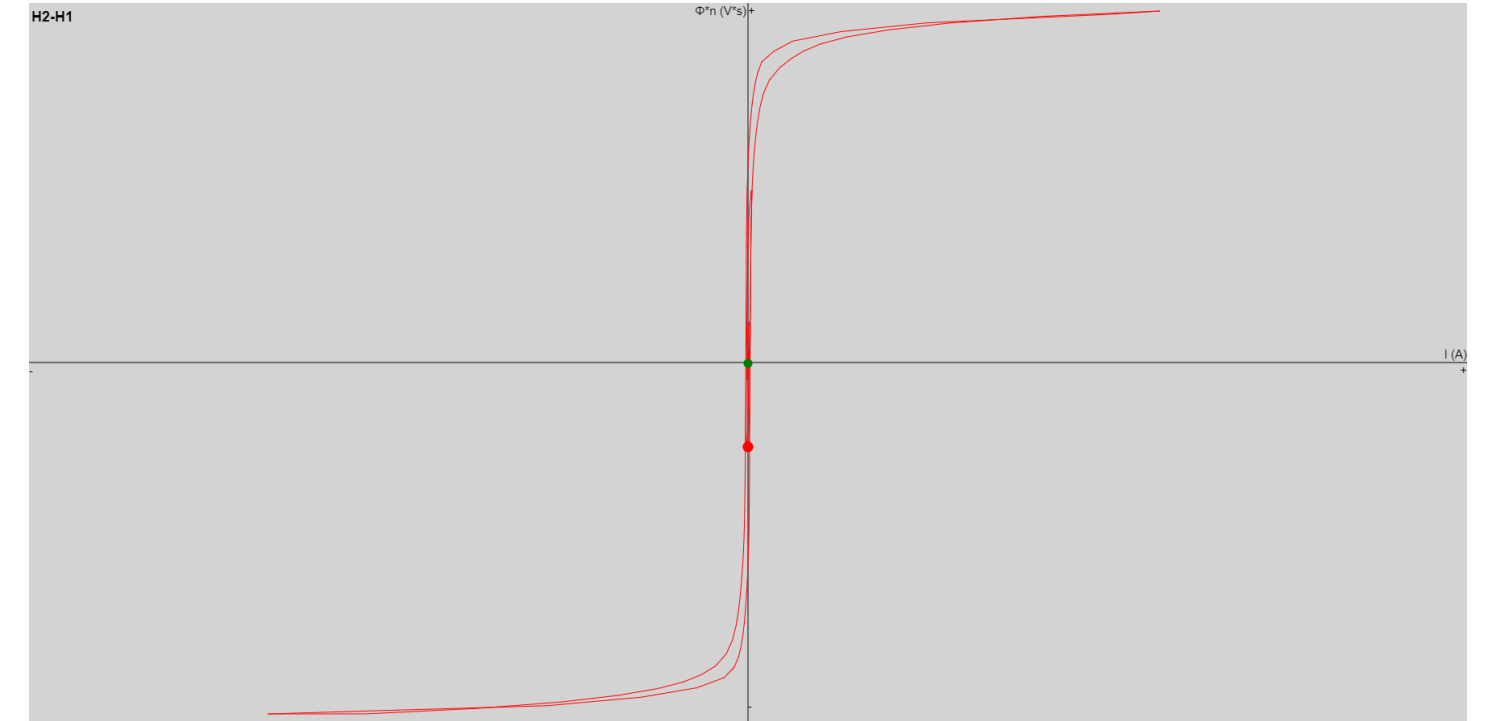
Comment:

Results are normal





| Demag measurements | | | | |
|--------------------|---------|---------|------------------------|-----------------------|
| Designation | Current | Time | Remanence before demag | Remanence after demag |
| H2-H1 | 0.000 A | 35.08 s | 23.69 % | <1 % |



Comment:



Turns ratio measurements

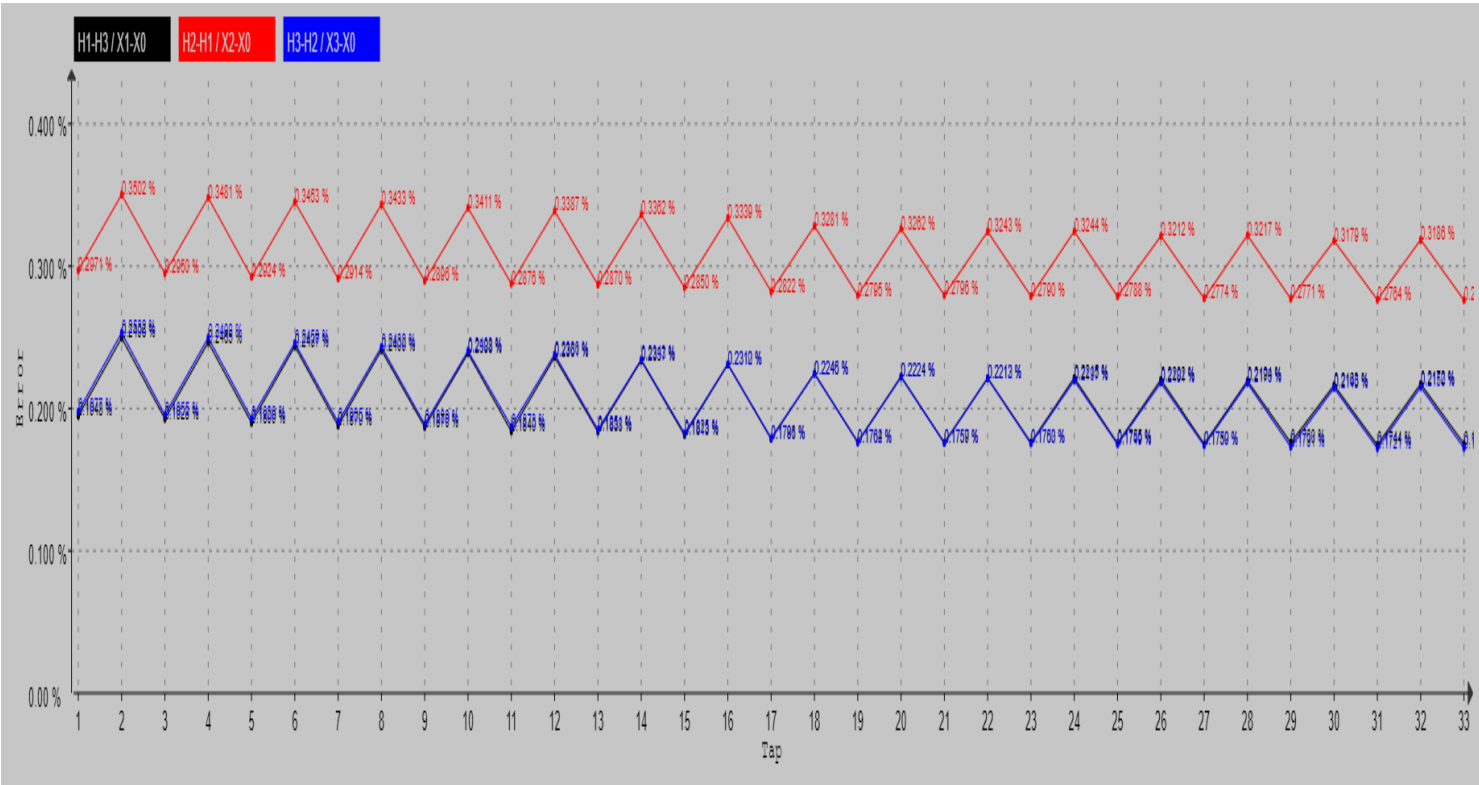
| Connection | Tap (S) | Tap Voltage (V) | U | Test frequency | TTR | Measured TTR | Error | I Exc | Phase |
|---------------|---------|-----------------|---------|----------------|-------|--------------|--------|----------|---------|
| H1-H3 / X1-X0 | 16R | 9 152 | 125.1 V | 55.00 Hz | 8.289 | 8.305 | 0.19 % | 3.688 mA | -0.03 ° |
| H2-H1 / X2-X0 | 16R | 9 152 | 125.0 V | 55.00 Hz | 8.289 | 8.314 | 0.30 % | 2.712 mA | -0.03 ° |
| H3-H2 / X3-X0 | 16R | 9 152 | 125.0 V | 55.00 Hz | 8.289 | 8.306 | 0.20 % | 3.491 mA | -0.03 ° |
| H1-H3 / X1-X0 | 15R | 9 100 | 125.1 V | 55.00 Hz | 8.337 | 8.357 | 0.25 % | 6.006 mA | -0.03 ° |
| H2-H1 / X2-X0 | 15R | 9 100 | 125.0 V | 55.00 Hz | 8.337 | 8.366 | 0.35 % | 4.873 mA | -0.03 ° |
| H3-H2 / X3-X0 | 15R | 9 100 | 125.0 V | 55.00 Hz | 8.337 | 8.358 | 0.25 % | 5.898 mA | -0.03 ° |
| H1-H3 / X1-X0 | 14R | 9 048 | 125.0 V | 55.00 Hz | 8.385 | 8.401 | 0.19 % | 3.582 mA | -0.03 ° |
| H2-H1 / X2-X0 | 14R | 9 048 | 125.0 V | 55.00 Hz | 8.385 | 8.409 | 0.30 % | 2.623 mA | -0.03 ° |
| H3-H2 / X3-X0 | 14R | 9 048 | 125.1 V | 55.00 Hz | 8.385 | 8.401 | 0.20 % | 3.396 mA | -0.03 ° |
| H1-H3 / X1-X0 | 13R | 8 996 | 125.0 V | 55.00 Hz | 8.433 | 8.454 | 0.25 % | 5.929 mA | -0.03 ° |
| H2-H1 / X2-X0 | 13R | 8 996 | 125.0 V | 55.00 Hz | 8.433 | 8.462 | 0.35 % | 4.811 mA | -0.03 ° |
| H3-H2 / X3-X0 | 13R | 8 996 | 125.1 V | 55.00 Hz | 8.433 | 8.454 | 0.25 % | 5.821 mA | -0.03 ° |
| H1-H3 / X1-X0 | 12R | 8 944 | 125.0 V | 55.00 Hz | 8.482 | 8.498 | 0.19 % | 3.506 mA | -0.03 ° |
| H2-H1 / X2-X0 | 12R | 8 944 | 125.0 V | 55.00 Hz | 8.482 | 8.507 | 0.29 % | 2.564 mA | -0.03 ° |
| H3-H2 / X3-X0 | 12R | 8 944 | 125.0 V | 55.00 Hz | 8.482 | 8.498 | 0.19 % | 3.319 mA | -0.03 ° |
| H1-H3 / X1-X0 | 11R | 8 892 | 125.0 V | 55.00 Hz | 8.532 | 8.552 | 0.24 % | 5.851 mA | -0.02 ° |
| H2-H1 / X2-X0 | 11R | 8 892 | 125.0 V | 55.00 Hz | 8.532 | 8.561 | 0.35 % | 4.756 mA | -0.03 ° |
| H3-H2 / X3-X0 | 11R | 8 892 | 125.0 V | 55.00 Hz | 8.532 | 8.553 | 0.25 % | 5.743 mA | -0.03 ° |
| H1-H3 / X1-X0 | 10R | 8 840 | 125.1 V | 55.00 Hz | 8.582 | 8.598 | 0.19 % | 3.438 mA | -0.03 ° |
| H2-H1 / X2-X0 | 10R | 8 840 | 125.1 V | 55.00 Hz | 8.582 | 8.607 | 0.29 % | 2.511 mA | -0.03 ° |
| H3-H2 / X3-X0 | 10R | 8 840 | 125.1 V | 55.00 Hz | 8.582 | 8.598 | 0.19 % | 3.249 mA | -0.03 ° |
| H1-H3 / X1-X0 | 9R | 8 788 | 125.0 V | 55.00 Hz | 8.633 | 8.653 | 0.24 % | 5.785 mA | -0.02 ° |
| H2-H1 / X2-X0 | 9R | 8 788 | 125.0 V | 55.00 Hz | 8.633 | 8.662 | 0.34 % | 4.704 mA | -0.03 ° |
| H3-H2 / X3-X0 | 9R | 8 788 | 125.1 V | 55.00 Hz | 8.633 | 8.654 | 0.24 % | 5.675 mA | -0.02 ° |
| H1-H3 / X1-X0 | 8R | 8 736 | 125.0 V | 55.00 Hz | 8.684 | 8.700 | 0.19 % | 3.375 mA | -0.03 ° |
| H2-H1 / X2-X0 | 8R | 8 736 | 125.0 V | 55.00 Hz | 8.684 | 8.709 | 0.29 % | 2.462 mA | -0.03 ° |
| H3-H2 / X3-X0 | 8R | 8 736 | 125.0 V | 55.00 Hz | 8.684 | 8.700 | 0.19 % | 3.187 mA | -0.03 ° |
| H1-H3 / X1-X0 | 7R | 8 684 | 125.0 V | 55.00 Hz | 8.736 | 8.757 | 0.24 % | 5.728 mA | -0.02 ° |
| H2-H1 / X2-X0 | 7R | 8 684 | 125.1 V | 55.00 Hz | 8.736 | 8.766 | 0.34 % | 4.659 mA | -0.02 ° |
| H3-H2 / X3-X0 | 7R | 8 684 | 125.0 V | 55.00 Hz | 8.736 | 8.757 | 0.24 % | 5.615 mA | -0.02 ° |

| Connection | Tap (S) | Tap Voltage (V) | U | Test frequency | TTR | Measured TTR | Error | I Exc | Phase |
|---------------|---------|-----------------|---------|----------------|-------|--------------|--------|----------|---------|
| H1-H3 / X1-X0 | 6R | 8 632 | 125.0 V | 55.00 Hz | 8.789 | 8.805 | 0.18 % | 3.322 mA | -0.03 ° |
| H2-H1 / X2-X0 | 6R | 8 632 | 125.0 V | 55.00 Hz | 8.789 | 8.814 | 0.29 % | 2.420 mA | -0.03 ° |
| H3-H2 / X3-X0 | 6R | 8 632 | 125.0 V | 55.00 Hz | 8.789 | 8.805 | 0.19 % | 3.133 mA | -0.02 ° |
| H1-H3 / X1-X0 | 5R | 8 580 | 125.0 V | 55.00 Hz | 8.842 | 8.863 | 0.24 % | 5.675 mA | -0.02 ° |
| H2-H1 / X2-X0 | 5R | 8 580 | 125.0 V | 55.00 Hz | 8.842 | 8.872 | 0.34 % | 4.618 mA | -0.02 ° |
| H3-H2 / X3-X0 | 5R | 8 580 | 125.1 V | 55.00 Hz | 8.842 | 8.863 | 0.24 % | 5.565 mA | -0.02 ° |
| H1-H3 / X1-X0 | 4R | 8 528 | 125.0 V | 55.00 Hz | 8.896 | 8.912 | 0.18 % | 3.280 mA | -0.02 ° |
| H2-H1 / X2-X0 | 4R | 8 528 | 125.0 V | 55.00 Hz | 8.896 | 8.921 | 0.29 % | 2.385 mA | -0.02 ° |
| H3-H2 / X3-X0 | 4R | 8 528 | 125.0 V | 55.00 Hz | 8.896 | 8.912 | 0.19 % | 3.087 mA | -0.02 ° |
| H1-H3 / X1-X0 | 3R | 8 476 | 125.1 V | 55.00 Hz | 8.950 | 8.971 | 0.23 % | 5.631 mA | -0.02 ° |
| H2-H1 / X2-X0 | 3R | 8 476 | 125.0 V | 55.00 Hz | 8.950 | 8.981 | 0.34 % | 4.581 mA | -0.02 ° |
| H3-H2 / X3-X0 | 3R | 8 476 | 125.0 V | 55.00 Hz | 8.950 | 8.971 | 0.23 % | 5.518 mA | -0.02 ° |
| H1-H3 / X1-X0 | 2R | 8 424 | 125.0 V | 55.00 Hz | 9.006 | 9.022 | 0.18 % | 3.237 mA | -0.02 ° |
| H2-H1 / X2-X0 | 2R | 8 424 | 125.1 V | 55.00 Hz | 9.006 | 9.031 | 0.29 % | 2.352 mA | -0.02 ° |
| H3-H2 / X3-X0 | 2R | 8 424 | 125.0 V | 55.00 Hz | 9.006 | 9.022 | 0.18 % | 3.050 mA | -0.02 ° |
| H1-H3 / X1-X0 | 1R | 8 372 | 125.0 V | 55.00 Hz | 9.062 | 9.083 | 0.23 % | 5.596 mA | -0.02 ° |
| H2-H1 / X2-X0 | 1R | 8 372 | 125.1 V | 55.00 Hz | 9.062 | 9.092 | 0.33 % | 4.553 mA | -0.02 ° |
| H3-H2 / X3-X0 | 1R | 8 372 | 125.0 V | 55.00 Hz | 9.062 | 9.083 | 0.23 % | 5.482 mA | -0.02 ° |
| H1-H3 / X1-X0 | N | 8 320 | 125.1 V | 55.00 Hz | 9.118 | 9.135 | 0.18 % | 3.213 mA | -0.02 ° |
| H2-H1 / X2-X0 | N | 8 320 | 125.0 V | 55.00 Hz | 9.118 | 9.144 | 0.28 % | 2.331 mA | -0.02 ° |
| H3-H2 / X3-X0 | N | 8 320 | 125.0 V | 55.00 Hz | 9.118 | 9.135 | 0.18 % | 3.026 mA | -0.02 ° |
| H1-H3 / X1-X0 | 1L | 8 268 | 125.0 V | 55.00 Hz | 9.176 | 9.196 | 0.22 % | 5.597 mA | -0.02 ° |
| H2-H1 / X2-X0 | 1L | 8 268 | 125.0 V | 55.00 Hz | 9.176 | 9.206 | 0.33 % | 4.554 mA | -0.03 ° |
| H3-H2 / X3-X0 | 1L | 8 268 | 125.1 V | 55.00 Hz | 9.176 | 9.196 | 0.22 % | 5.484 mA | -0.02 ° |
| H1-H3 / X1-X0 | 2L | 8 216 | 125.1 V | 55.00 Hz | 9.234 | 9.250 | 0.18 % | 3.239 mA | -0.02 ° |
| H2-H1 / X2-X0 | 2L | 8 216 | 125.1 V | 55.00 Hz | 9.234 | 9.259 | 0.28 % | 2.354 mA | -0.02 ° |
| H3-H2 / X3-X0 | 2L | 8 216 | 125.1 V | 55.00 Hz | 9.234 | 9.250 | 0.18 % | 3.053 mA | -0.02 ° |
| H1-H3 / X1-X0 | 3L | 8 164 | 125.1 V | 55.00 Hz | 9.292 | 9.313 | 0.22 % | 5.639 mA | -0.02 ° |
| H2-H1 / X2-X0 | 3L | 8 164 | 125.0 V | 55.00 Hz | 9.292 | 9.323 | 0.33 % | 4.586 mA | -0.02 ° |

| Connection | Tap (S) | Tap Voltage (V) | U | Test frequency | TTR | Measured TTR | Error | I Exc | Phase |
|---------------|---------|-----------------|---------|----------------|-------|--------------|--------|----------|---------|
| H3-H2 / X3-X0 | 3L | 8 164 | 125.0 V | 55.00 Hz | 9.292 | 9.313 | 0.22 % | 5.524 mA | -0.02 ° |
| H1-H3 / X1-X0 | 4L | 8 112 | 125.0 V | 55.00 Hz | 9.352 | 9.369 | 0.18 % | 3.283 mA | -0.02 ° |
| H2-H1 / X2-X0 | 4L | 8 112 | 125.0 V | 55.00 Hz | 9.352 | 9.378 | 0.28 % | 2.390 mA | -0.02 ° |
| H3-H2 / X3-X0 | 4L | 8 112 | 125.1 V | 55.00 Hz | 9.352 | 9.368 | 0.18 % | 3.095 mA | -0.02 ° |
| H1-H3 / X1-X0 | 5L | 8 060 | 125.1 V | 55.00 Hz | 9.412 | 9.433 | 0.22 % | 5.689 mA | -0.02 ° |
| H2-H1 / X2-X0 | 5L | 8 060 | 125.1 V | 55.00 Hz | 9.412 | 9.443 | 0.32 % | 4.627 mA | -0.02 ° |
| H3-H2 / X3-X0 | 5L | 8 060 | 125.1 V | 55.00 Hz | 9.412 | 9.433 | 0.22 % | 5.577 mA | -0.02 ° |
| H1-H3 / X1-X0 | 6L | 8 008 | 125.1 V | 55.00 Hz | 9.474 | 9.490 | 0.18 % | 3.334 mA | -0.02 ° |
| H2-H1 / X2-X0 | 6L | 8 008 | 125.0 V | 55.00 Hz | 9.474 | 9.500 | 0.28 % | 2.430 mA | -0.02 ° |
| H3-H2 / X3-X0 | 6L | 8 008 | 125.0 V | 55.00 Hz | 9.474 | 9.490 | 0.18 % | 3.145 mA | -0.02 ° |
| H1-H3 / X1-X0 | 7L | 7 956 | 125.0 V | 55.00 Hz | 9.535 | 9.557 | 0.22 % | 5.745 mA | -0.02 ° |
| H2-H1 / X2-X0 | 7L | 7 956 | 125.0 V | 55.00 Hz | 9.535 | 9.566 | 0.32 % | 4.671 mA | -0.02 ° |
| H3-H2 / X3-X0 | 7L | 7 956 | 125.1 V | 55.00 Hz | 9.535 | 9.556 | 0.22 % | 5.635 mA | -0.02 ° |
| H1-H3 / X1-X0 | 8L | 7 904 | 125.0 V | 55.00 Hz | 9.598 | 9.615 | 0.18 % | 3.393 mA | -0.02 ° |
| H2-H1 / X2-X0 | 8L | 7 904 | 125.1 V | 55.00 Hz | 9.598 | 9.625 | 0.28 % | 2.474 mA | -0.02 ° |
| H3-H2 / X3-X0 | 8L | 7 904 | 125.0 V | 55.00 Hz | 9.598 | 9.615 | 0.17 % | 3.203 mA | -0.02 ° |
| H1-H3 / X1-X0 | 9L | 7 852 | 125.1 V | 55.00 Hz | 9.662 | 9.683 | 0.22 % | 5.813 mA | -0.02 ° |
| H2-H1 / X2-X0 | 9L | 7 852 | 125.0 V | 55.00 Hz | 9.662 | 9.693 | 0.32 % | 4.720 mA | -0.02 ° |
| H3-H2 / X3-X0 | 9L | 7 852 | 125.1 V | 55.00 Hz | 9.662 | 9.683 | 0.22 % | 5.698 mA | -0.02 ° |
| H1-H3 / X1-X0 | 10L | 7 800 | 125.0 V | 55.00 Hz | 9.726 | 9.743 | 0.18 % | 3.460 mA | -0.02 ° |
| H2-H1 / X2-X0 | 10L | 7 800 | 125.0 V | 55.00 Hz | 9.726 | 9.753 | 0.28 % | 2.525 mA | -0.02 ° |
| H3-H2 / X3-X0 | 10L | 7 800 | 125.0 V | 55.00 Hz | 9.726 | 9.743 | 0.17 % | 3.269 mA | -0.02 ° |
| H1-H3 / X1-X0 | 11L | 7 748 | 125.0 V | 55.00 Hz | 9.791 | 9.813 | 0.22 % | 5.880 mA | -0.02 ° |
| H2-H1 / X2-X0 | 11L | 7 748 | 125.0 V | 55.00 Hz | 9.791 | 9.823 | 0.32 % | 4.772 mA | -0.02 ° |
| H3-H2 / X3-X0 | 11L | 7 748 | 125.0 V | 55.00 Hz | 9.791 | 9.813 | 0.22 % | 5.768 mA | -0.02 ° |
| H1-H3 / X1-X0 | 12L | 7 696 | 125.0 V | 55.00 Hz | 9.858 | 9.875 | 0.18 % | 3.535 mA | -0.02 ° |
| H2-H1 / X2-X0 | 12L | 7 696 | 125.0 V | 55.00 Hz | 9.858 | 9.885 | 0.28 % | 2.579 mA | -0.02 ° |
| H3-H2 / X3-X0 | 12L | 7 696 | 125.0 V | 55.00 Hz | 9.858 | 9.875 | 0.17 % | 3.341 mA | -0.02 ° |
| H1-H3 / X1-X0 | 13L | 7 644 | 125.0 V | 55.00 Hz | 9.925 | 9.946 | 0.22 % | 5.959 mA | -0.02 ° |
| H2-H1 / X2-X0 | 13L | 7 644 | 125.0 V | 55.00 Hz | 9.925 | 9.956 | 0.32 % | 4.829 mA | -0.02 ° |
| H3-H2 / X3-X0 | 13L | 7 644 | 125.0 V | 55.00 Hz | 9.925 | 9.946 | 0.21 % | 5.845 mA | -0.02 ° |

| Connection | Tap (S) | Tap Voltage (V) | U | Test frequency | TTR | Measured TTR | Error | I Exc | Phase |
|---------------|---------|-----------------|---------|----------------|-------|--------------|--------|----------|---------|
| H1-H3 / X1-X0 | 14L | 7 592 | 125.0 V | 55.00 Hz | 9.993 | 10.01 | 0.17 % | 3.613 mA | -0.02 ° |
| H2-H1 / X2-X0 | 14L | 7 592 | 125.0 V | 55.00 Hz | 9.993 | 10.02 | 0.28 % | 2.640 mA | -0.02 ° |
| H3-H2 / X3-X0 | 14L | 7 592 | 125.1 V | 55.00 Hz | 9.993 | 10.01 | 0.17 % | 3.423 mA | -0.02 ° |
| H1-H3 / X1-X0 | 15L | 7 540 | 125.0 V | 55.00 Hz | 10.06 | 10.08 | 0.22 % | 6.045 mA | -0.02 ° |
| H2-H1 / X2-X0 | 15L | 7 540 | 125.1 V | 55.00 Hz | 10.06 | 10.09 | 0.32 % | 4.897 mA | -0.02 ° |
| H3-H2 / X3-X0 | 15L | 7 540 | 125.1 V | 55.00 Hz | 10.06 | 10.08 | 0.22 % | 5.932 mA | -0.02 ° |
| H1-H3 / X1-X0 | 16L | 7 488 | 125.0 V | 55.00 Hz | 10.13 | 10.15 | 0.18 % | 3.700 mA | -0.02 ° |
| H2-H1 / X2-X0 | 16L | 7 488 | 125.0 V | 55.00 Hz | 10.13 | 10.16 | 0.28 % | 2.707 mA | -0.02 ° |
| H3-H2 / X3-X0 | 16L | 7 488 | 125.0 V | 55.00 Hz | 10.13 | 10.15 | 0.17 % | 3.511 mA | -0.02 ° |

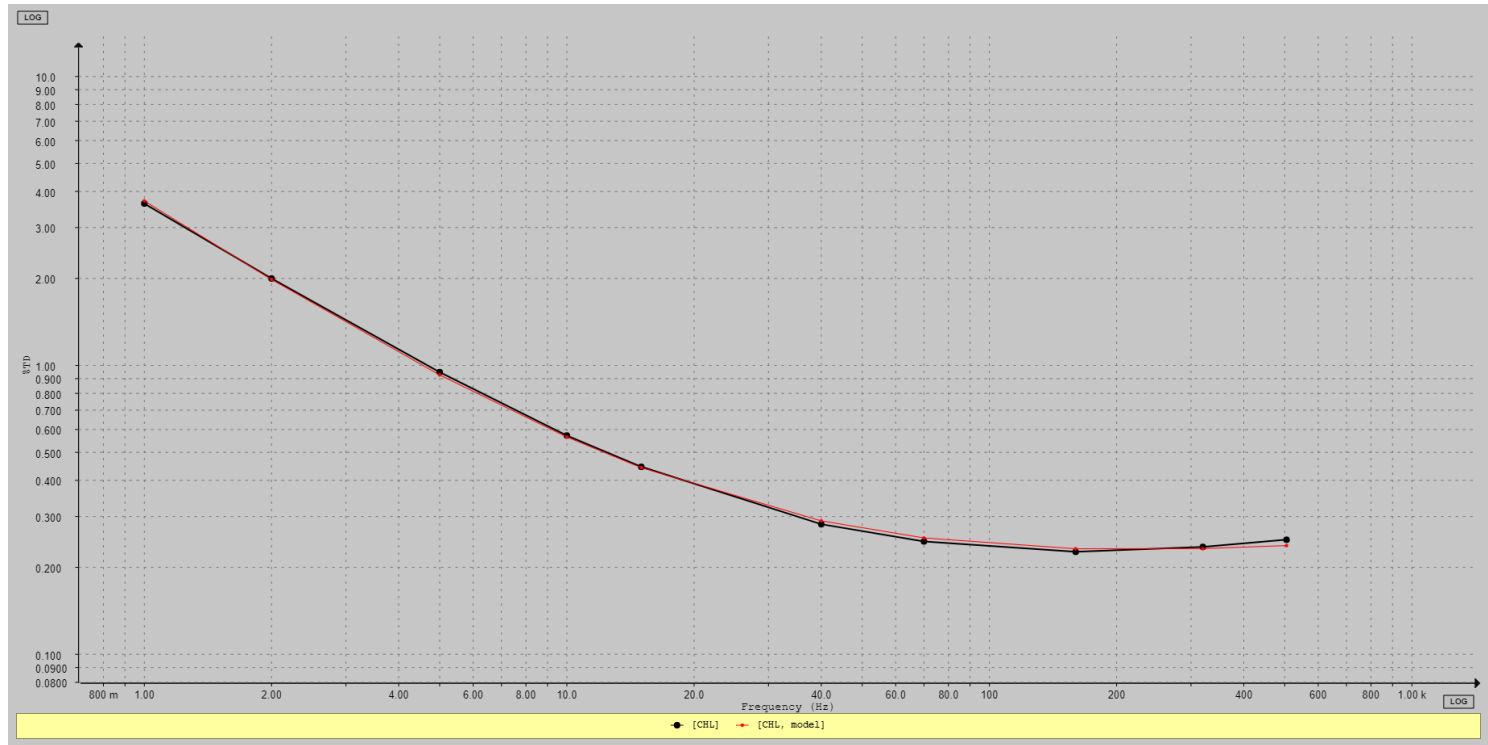
Comment:
Results are normal

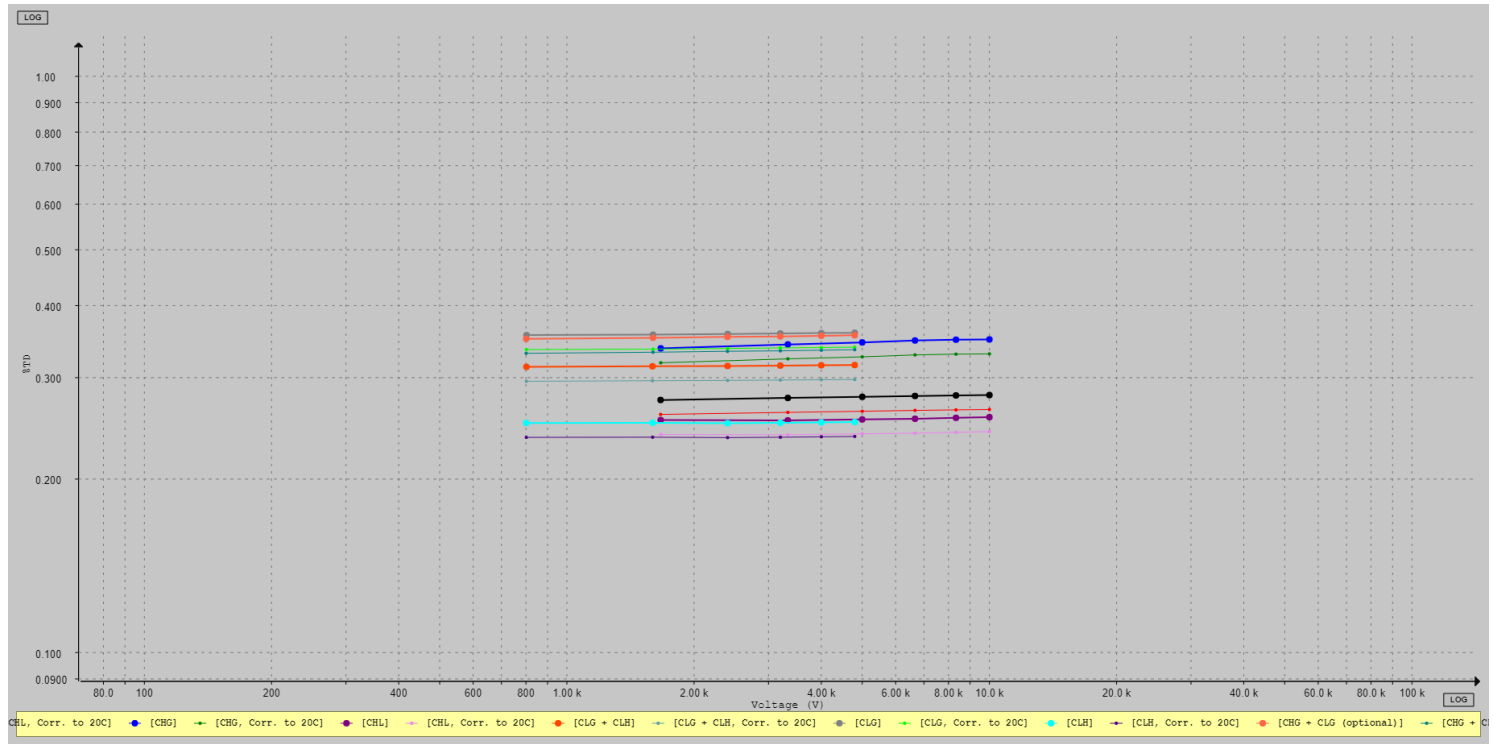




Tan Delta - Power Transformer

| Designation | Test Mode | f (Hz) | U | I | C | %PF at 30 °C | ITC2 Corr. Factor | Corr. %PF to 20°C | P at 30 °C | ITC2 |
|----------------------|-----------|--------|----------|----------|----------|--------------|-------------------|-------------------|------------|------|
| CHG + CHL | GST-GND | 60.00 | 10.00 kV | 37.34 mA | 9.903 nF | 0.280 | 0.944 | 0.264 | 1.044 W | |
| CHG | GSTg-RB | 60.00 | 10.01 kV | 9.615 mA | 2.549 nF | 0.349 | 0.944 | 0.330 | 336.2 mW | |
| CHL | UST-R | 60.00 | 10.01 kV | 27.74 mA | 7.354 nF | 0.256 | 0.944 | 0.242 | 711.8 mW | ● |
| CLG + CLH | GST-GND | 60.00 | 4.801 kV | 32.64 mA | 18.03 nF | 0.315 | 0.944 | 0.298 | 494.3 mW | |
| CLG | GSTg-RB | 60.00 | 4.804 kV | 19.34 mA | 10.68 nF | 0.359 | 0.944 | 0.339 | 333.9 mW | |
| CLH | UST-R | 60.00 | 4.805 kV | 13.32 mA | 7.355 nF | 0.251 | 0.944 | 0.237 | 160.9 mW | |
| CHG + CLG (optional) | GST-GND | 60.00 | 4.789 kV | 23.89 mA | 13.23 nF | 0.355 | 0.944 | 0.335 | 406.6 mW | |



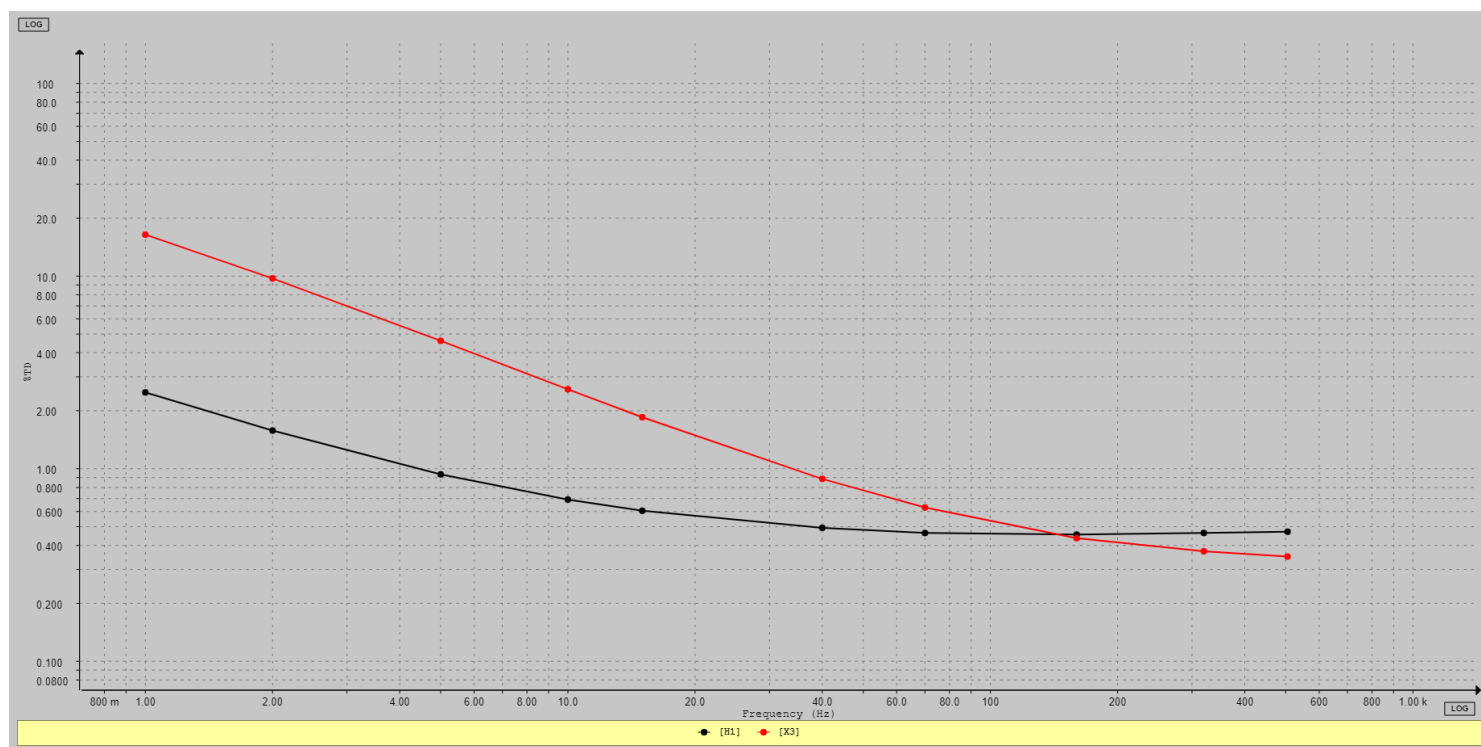


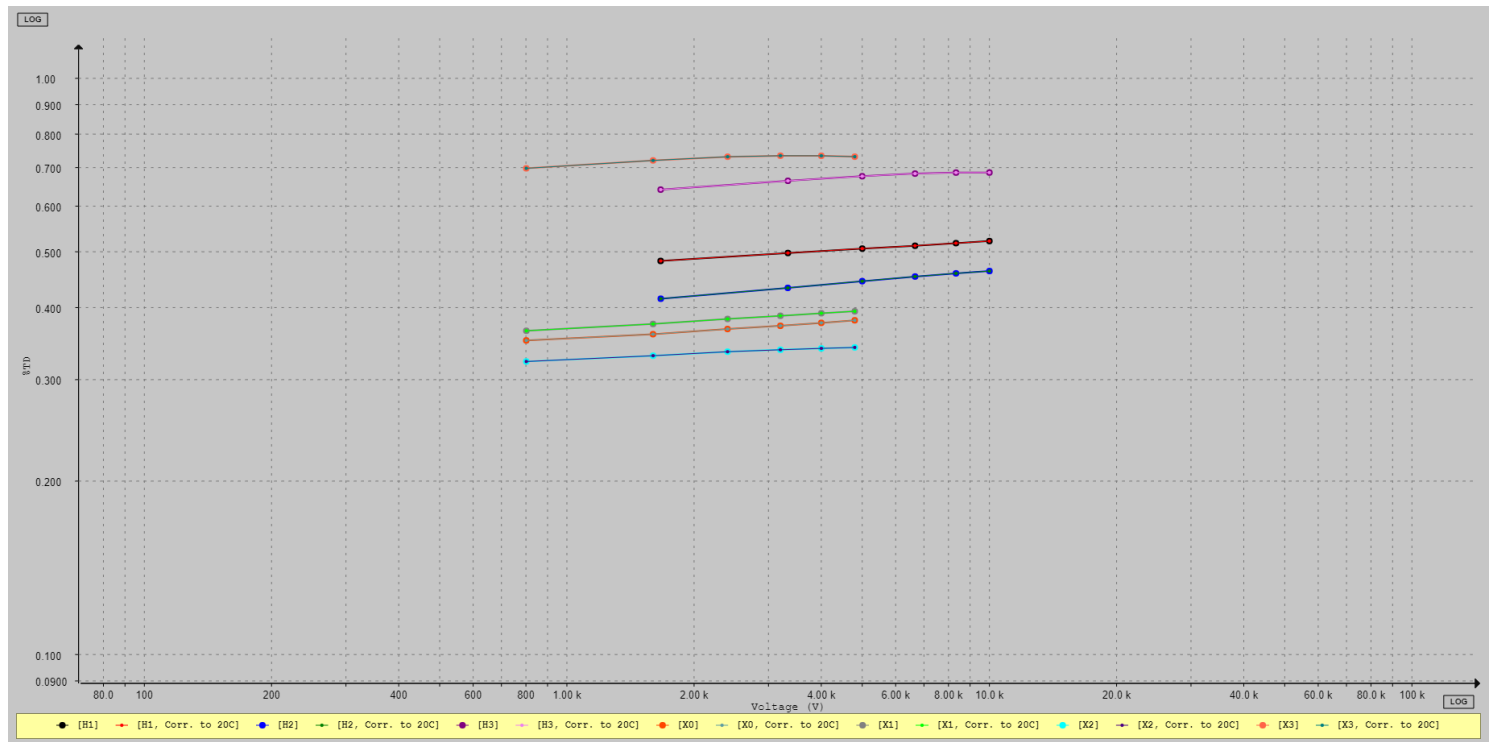
Comment:
Overall degradation of the transformer is typical for its age.



Tan Delta - Bushings C1

| Designation | f (Hz) | U | I | C | %PF at 27 °C | ITC1 Corr. Factor | Corr. %PF to 20°C | ITC1 |
|-------------|--------|----------|----------|----------|--------------|-------------------|-------------------|------|
| H1 | 60.00 | 10.00 kV | 1.344 mA | 356.6 pF | 0.522 | 0.965 | 0.504 | ● |
| H2 | 60.00 | 10.00 kV | 1.317 mA | 349.2 pF | 0.462 | --- | --- | ● |
| H3 | 60.00 | 10.00 kV | 1.336 mA | 354.2 pF | 0.682 | --- | --- | ● |
| X0 | 60.00 | 4.792 kV | 842.4 μA | 466.3 pF | 0.379 | --- | --- | ● |
| X1 | 60.00 | 4.801 kV | 845.3 μA | 467.0 pF | 0.394 | --- | --- | ● |
| X2 | 60.00 | 4.800 kV | 837.6 μA | 462.9 pF | 0.341 | --- | --- | ● |
| X3 | 60.00 | 4.800 kV | 819.3 μA | 452.7 pF | 0.730 | 0.677 | 0.494 | ● |





Comment:

Bushings H1, H3 and X3 are twice name plate value. Bushing replacements required.