

1 Q. Re: Upgrade Power Transformers Volume II (Tab 17)

2 What is a Furan Analysis?

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5 A. Furan Analysis is a non-destructive laboratory test to help determine the strength of
6 the cellulose paper insulation in a power transformer. Since it is usually not
7 practical to take a physical paper sample from a power transformer, this test was
8 developed to measure the furanic compounds released in the oil that can be used
9 to infer the De-polymerization (DP) of the cellulose paper insulation. When
10 cellulose molecules de-polymerize or break into smaller lengths or ring structures, a
11 chemical compound known as a furan is formed. These furans are then measured
12 from an oil sample and an inferred DP number is determined. A DP number
13 approaching 200 indicates the strength of the paper is low enough that the
14 transformer is at risk for an in service failure.