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Tip Of The Week

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Defining Inductance

In a form wound motor the inductive imbalance between phases is commonly less than 4%, and in a random wound motor commonly less than 8%. Through Faraday's Law, inductance refers to the property of an electric circuit by which an electromotive force is induced in it as the result of change in magnetic flux. Magnetic flux is the measure of the magnetization of the magnetic field passing through a surface/coil. Generally, a healthy motor with highly permeable and/or symmetric rotor impedance will have little and/or balanced magnetic flux remaining in the air gap between the rotor and stator when de-energized, therefore, producing minimal inductive imbalance between phases.

For more information on inductance testing refer to IEEE 1415 section 4.3.21.

Sources:
Influence of Rotor Residual Flux on the Measurement of Inductance and its Possible Use as an Impending Fault Indicator by David L. McKinnon at http://www.pdma.com/PdMA-articles.php

Foundations of Electric Power – J.R. Cogdell

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