

## عنوان مقاله:

DETECTING MECHANICAL MOVEMENT IN THE WINDING OF TRANSFORMERS USING FREQUENCY  
RESPONSE ANALYSIS

## محل انتشار:

نوزدهمین کنفرانس بین المللی برق (سال: 1383)

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## نویسندگان:

Muhammad Azizi Abdul Rahman - *Department of Engineering Services & Logistic, Distribution Division, TNB  
Malaysia*

Ghosh - *Universiti Tenaga Nasional, Malaysia*

## خلاصه مقاله:

Condition monitoring of power transformers is of paramount importance for reliable operation of the power system. The transformers in service encounter failures due to several operational stresses e.g. electrical, mechanical, chemical, thermal, and environmental. The assessment of the condition of a transformer winding, which is suspected of having a short-circuit damage, using conventional tests such as winding resistance, magnetizing current, or insulation resistance is quite difficult. These tests are effective when the damage is severe in nature. On the other hand, the visual inspection of windings despite being an effective proposition but necessitates the removal of oil from the tank and thus requires a longer shutdown. Therefore, for diagnosing incipient electrical faults in the transformer winding, the Frequency Response Analysis (FRA) Technique is found to be the most effective tool for reliable detection of mechanical faults such as winding movement, loss of clamping pressure and disc movement. Historical data are, undoubtedly, the best reference to be used as comparison for FRA measurements. However, it is not practically easy to get historical data due to constraints of outages. This paper comes up with the proposed criteria on how to choose reference FRA measurements for power transformers in the absence of historical data. Case studies were also carried out on healthy power transformers that have no historical FRA measurements to show the effectiveness of the proposed criteria.

## کلمات کلیدی:

Power transformer, Frequency Response Analysis, Measuring method, Analyzing technique, Reference data

## لینک ثابت مقاله در پایگاه سیویلیکا:

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