

Dissolved gas analysis of transformers based on rough set and fuzzy logic methods

ABSTRACT

Dissolved Gas Analysis (DGA) is one of the common approaches that can be used to detect incipient faults in transformers. According to IEEE C57/104-2008 and IEC 60599 standards, there are many DGA techniques that can be used to interpret the type of faults. In this paper, an alternative method to diagnose faults in transformers based on Rough Set (RS) and Fuzzy Logic (FL) is proposed. The rules for the FL are generated from the attributes of RS. Based on this method, it was found that the efficiency of the fault interpretation based on RS/FL is improved compared to the conventional methods in standards.

Keyword: Dissolved gas analysis; Faults interpretations; Fuzzy logic; Rough set; Transformers