

Paper

A Review of Ferroresonance in Capacitive Voltage Transformer

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Ferroresonance incidences in electrical power system have been commonly regarded as unexplained phenomenon, which is not critical for utility engineers. As a result, research conducted in this area is limited and the awareness on ferroresonance is relatively low among utility engineers. However, as the electrical system evolves, its complexity increases in line with the increasing risk of ferroresonance. As a result, this paper provides a consolidated review on the research conducted on ferroresonance to highlight its importance. This paper covers the fundamental inductor–capacitor pair for ferroresonance initiation and the modes of ferroresonance, followed by ferroresonance in capacitive voltage transformer (CVT), constituting its impact, initiation, and suppression techniques. The core focus in this paper is ferroresonance in CVT due to switching events, on which the documented literature is very scarce. © 2014 Institute of Electrical Engineers of Japan. Published by John Wiley & Sons, Inc.

Keywords: ferroresonance, capacitive voltage transformer, circuit breaker switching, power quality

Received 20 September 2013; Revised 2 February 2014

1. Introduction

The power community recognizes that any disturbance in the fundamental power frequency waveforms of voltage and current will pose a danger to the electricity utility's operation. As such, these disturbances have been commonly described as

Special attention is paid to ferroresonance in capacitive voltage transformers (CVTs).

Ferroresonance phenomenon in electric power systems were recognized and investigated in numerous technical papers as early as the first decades of the twentieth century [7,8]. The term