

# Capacitor abnormal operation processing method

Do capacitor defects contribute to infant and latent failures in integrated circuits?

Capacitor defects significantly contribute to infant and latent failures in integrated circuits. This paper will address methods of locating capacitor defects and root cause determination. Keysight Technologies' failure analysis team investigated tens of failures in an externally purchased voltage controlled oscillator (VCO).

What are the advances in capacitor failure analysis?

Advancements in failure analysis have been made in root cause determination and stress testing methods of capacitors with extremely small (approximately 200 nm) defects. Subtractive imaging has enabled a non-destructive means of locating a capacitor short site, reducing the FIB resources needed to analyze a defect.

What causes a capacitor to fail?

Keysight Technologies' failure analysis team determined the root cause of these failures to be voids in the capacitor dielectric layer. The voids allowed the propagation of metal into the dielectric layer. This metal migration led to latent failures in the field.

What causes a VCO capacitor to fail?

The root cause was found to be voiding in the dielectric layer of a capacitor near the edges or seams. In all cases the capacitor on the voltage control line of the VCO failed. In addition, destructive and nondestructive capacitor stress testing methods were studied.

Are capacitor voltage transformers (CVT) a measurement error?

Subject The assessment of the measurement error status of online Capacitor Voltage Transformers (CVT) within the power grid is of profound significance to the equitable trade of electric energy and the secure operation of the power grid.

Is a capacitor voltage transformer error state evaluation methodology based on InPhase relationship?

This paper posits an online Capacitor Voltage Transformer (CVT) error state evaluation methodology predicated on the inphase relationship and the identification of aberrant points.

Estimation of abnormal states in shunt capacitor banks using transient disturbance feature extraction Long Zhang<sup>1</sup>, Ming Ma<sup>2</sup>, Wen Xiao<sup>3\*</sup>, Yunping Zhong<sup>1</sup>, BiHu<sup>1</sup>, Wenwen Zhou<sup>1</sup> and Wenhai Zhang<sup>3</sup> 1Heyuan Power Supply Bureau of Guangdong Electric Power Grid Co., Ltd., Heyuan, Guangdong Province, China, 2Electric Power Research Institute of Guangdong ...

The capacitors in AC filters, made up of multiple small capacitors in series and parallel, can retain residual charge and voltage if flashovers occur in some capacitors. Moreover, due to the capacitors' memory effect, rapid re-closing of the AC filter shortly after system operation can result in residual voltage, leading to

Calibration is compulsory before connecting the CVT to the grid, which is called the acceptance test, and is carried out every four years in the operation process, which is called the periodical on-site calibration [9].

Through the analysis and processing of common faults of power capacitors, it is possible to timely understand and master the operation of capacitors, detect capacitor defects in time and take ...

An abnormal alteration in the measurement error state of CVT is manifested by a discernible deviation in the projection of measurement data within the pivot subspace and residual subspace.

We analyze the waveform characteristics of fault transient processes on the key monitoring points of shunt capacitor banks, derive and analyze the quantitative relationship between the key parameters of the ...

Then, disturbances are classified as switching, fault, or abnormal operations, according to the cause. The characteristics of various typical disturbance waveform data ...

Highlights o Capacitor sudden failure detection method based on parameter mutation. o Parameter estimation method of aging model based on Bayesian linear regression. ...

Signal processing-based detection methods proposed in existing literature fail to eliminate primary side power grid fluctuations [7] [8] [9], risking misjudgments or omissions during prolonged monitoring. ... swayed by the prolonged operation of the Capacitor Voltage Transformer (CVT) and structural malfunctions, its factual transformation ...

in research and industrial practice of abnormal event management (AEM) and process safety. Chapter 2 focuses on monitoring and man-aging safety during online process operation hence reporting methodologies for monitoring, detecting and diagnosing abnormal events during process operation. Chapter 3 takes a step back and focuses on

Octree based visual monitoring method for operation process of power construction site. Author links open overlay panel Chao Zhang, Lihua Zhang, Xu Chen, ... Once abnormal behavior or events are detected, the system will immediately trigger an alert and display real-time information such as the target's position and movement trajectory through ...

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