

Study on Measuring Method and Experiment of Arc Fault Detection Device

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Abstract : Arc fault is one of the main inducements of electric fires. Arc Fault Detection Device (AFDD) can detect arc fault effectively. Arc fault detections and unhooking standards are the keys to AFDD practical application. First, an arc fault continuous production system was developed, which could count the arc half wave number. Then, Combining with the UL1699 standard, ignition probability curve of cotton and unhooking time of various currents intensity were obtained by experiments. The combustion degree of arc fault could be expressed effectively by arc area. Experiments proved that electric fires would be misjudged or missed only using arc half wave number as AFDD unhooking basis. At last, Practical tests were carried out on the self-developed AFDD system. The result showed that actual AFDD unhooking time was the sum of arc half wave cycling number, Arc wave identification time and unhooking mechanical operation time And the first two shared shorter time. Unhooking time standard depended on the shortest mechanical operation time.

Keywords : arc fault detection device, arc area, arc half wave, unhooking time, arc fault

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