UL 2748

Outline of Investigation for Arcing Fault Quenching Equipment

Issue Number 3

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Summary of Topics

This is the Third issue of the Outline of Investigation for Arcing Fault Quenching Equipment. These requirements cover devices intended to quench arcing faults by creating a lower impedance current path, located within a controlled compartment, to cause the arcing fault to transfer to the new current path. The major revisions included in this issue include:

1) Explanation of arc transfer times, including refinement of the test methods to determine the actual arc transfer time(s),

2) Clarify test methods for open type devices that are intended for installation in complete equipment, and

3) Clarify that the internal arcing fault test and the arc transfer test can be combined into one test under certain conditions.

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CONTENTS

INTRODUCTION

1 Scope 4
2 Components 4
3 Units of Measurement 5
4 Undated References 5
5 Glossary 5

CONSTRUCTION

6 General 6
7 Enclosure 6
8 Primary or Power Carrying Circuits 6
9 Grounding 7
10 Control and Secondary Wiring 7
11 Creepage and Clearance Distance 7
12 Wiring 8
13 Operation 8

RATINGS

14 General 9

MARKING

15 General 10

INSTRUCTIONS

16 General 11

PERFORMANCE

17 General 11
18 Continuous Current Test 11
19 Power-Frequency Withstand Voltage Tests 12
20 Maximum Arcing Fault Current Test 12
21 Internal Arcing Fault Test 13
22 Arc Transfer Test 14

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INTRODUCTION

1 Scope

1.1 These requirements cover equipment intended to quench arcing faults by creating a lower impedance current path, located within a controlled compartment, to cause the arcing fault to transfer to the new current path.

1.2 These requirements cover equipment that may either be completely enclosed units or intended to be installed within power distribution equipment.

1.3 These requirements cover equipment rated up to 38 kV ac maximum.

1.4 This outline does not include the requirements for sensors intended to detect arcing fault, devices intended to trigger the functioning of the arc quenching equipment, or devices that are intended to interrupt arcing fault currents.

1.5 This outline does not include all the requirements for integration and testing of arc quenching equipment within equipment it is intended to protect.

2 Components

2.1 Except as indicated in 2.2, a component of a product covered by this outline shall comply with the requirements for that component.

2.2 A component is not required to comply with a specific requirement that:

a) Involves a feature or characteristic not required in the application of the component in the product covered by this outline; or

b) Is superseded by a requirement in this outline.

2.3 A component shall be used in accordance with its rating established for the intended conditions of use.

2.4 Specific components are incomplete in construction features or restricted in performance capabilities. Such components are intended for use only under limited conditions, such as certain temperatures not exceeding specified limits, and shall be used only under those specific conditions.

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3 Units of Measurement

3.1 Values stated without parentheses are the requirement. Values in parentheses are explanatory or approximate information.

4 Undated References

4.1 Any undated reference to a code or standard appearing in the requirements of this outline shall be interpreted as referring to the latest edition of that code or standard.

5 Glossary

5.1 For the purpose of this outline, the following definitions apply.

5.2 ARCING FAULT – A non-intentional discharge of electrical energy in air or other gas, including discharges across the surface of an insulating material.

5.3 ARC TRANSFER TIME – The interval between triggering of the arc quenching device and the quenching of the arc.

5.4 CONTROLLED COMPARTMENT – A portion of equipment, intended to enclose the new current path when an arcing fault is transferred. This compartment may be provided with openings or flaps for pressure relief.

5.5 LOW VOLTAGE – A voltage of 1000 V ac or less.

5.6 MEDIUM VOLTAGE – A voltage of greater than 1000 V ac, up to 38 kV ac.

5.7 POLLUTION DEGREE 2 MICROENVIRONMENT – An area where normally, only nonconductive pollution occurs, but where occasional, temporary conductivity may be expected. Typical constructions that reduce the possibilities of conductive pollution and condensation or high humidity are;

a) Un-ventilated enclosures that are provided with continuous application of heat through the use of heaters or through continuous energization of the equipment, with interruptions such that cooling to the point of condensation does not occur or

b) The use of ventilated enclosures where all openings are provided with filters.

5.8 QUENCHING DEVICE – Equipment that is used to extinguish or redirect an arcing fault.

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