



Technical Bulletin

TB 0246 - Surge Arrester ratings in the HV distribution network

Purpose

To communicate the appropriate voltage rating of surge arresters to be installed on the HV distribution network.

Background

The majority of Endeavour Energy's HV distribution network is 11kV. There are parts of the network that are 22kV particularly in northwest Sydney, parts of the Blue Mountains and in the SWER network. The 22kV network in northwest Sydney also utilises Neutral Earthing Resistors which limit ground fault current. These systems are defined as 'non-effectively earthed'.

11kV surge arresters will fail if installed on the 22kV network. There are a number of failures that have occurred recently, particularly in new supply areas from Mungerie Park ZS by both internal staff and ASP's.

Incorrect use of arresters results in higher stresses on other equipment which will lead to equipment failures.

Actions

The voltage rating (COV) of surge arresters is selected to match the operating voltage of the network. The appropriate use of stock shall be based upon the network they are installed on, regardless of the rating of the equipment they are installed with, namely:

- 11kV surge arresters are required to be installed on 11kV networks on either 12kV or 24kV rated equipment.
- 22kV surge arrests are required to be installed on 22kV networks (including 12.7kV SWER).

Refer to the table below for relevant stock code and the relevant equipment standard drawings for their implementation.

Network Voltage	Stock Code	Description
11kV	1543644	11kV surge arrester
	1550938	11kV surge arrester with earth lead disconnect device
22kV	1543636	22kV surge arrester
	1551175	22kV surge arrester with earth lead disconnect device

Note: It is not uncommon for 24kV rated equipment to be installed in 11kV networks based upon logistics and costing; for example standoff insulators and metal enclosed load break switches.

Implementation

The contents of this technical bulletin are to be immediately implemented by all relevant parties. This information will be more clearly specified in the relevant network standards upon their next review.

Impacted Standards

The contents of this technical bulletin will be included in the next update of the following standard(s):

- MCI 0005 – Overhead distribution construction standards manual
- MDI 0031 – Overhead distribution design standards manual