

Externally Gapped Line Arrester (EGLA)

ArresterFacts 004a



NGK Insulator Ltd

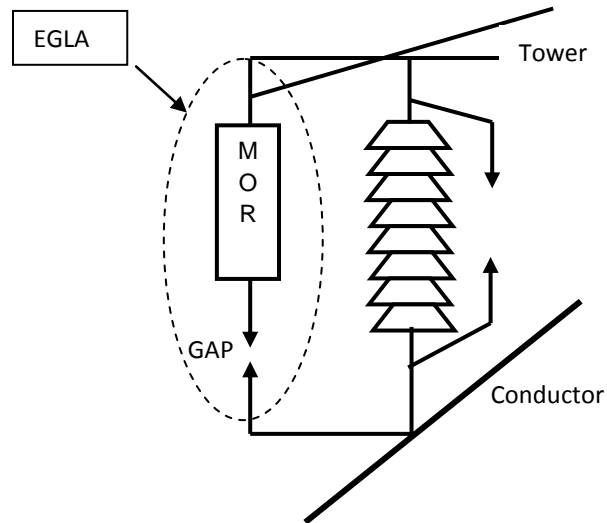
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Externally Gapped Line Arrester

Fundamental Design Overview

The externally gapped line arrester (EGLA) has two basic components, the Metal Oxide Resistor (MOR) and series gap. The MOR has roughly the same characteristics as a standard MOV arrester. The gap is generally a single air gap in series with the arrester

The fundamental difference between this arrester type and the earlier generations of series gapped arresters is the MOR. The MOR is a highly nonlinear varistor and because of this nonlinearity, it turns on at the initiation of the surge, and turns off immediately following the surge. In earlier generations, the gap and resistor allowed power frequency current to follow the low surge impedance path to earth causing large amounts of current to flow through the gap and varistor. This power follow current had deleterious effects on the SiC varistors and gaps.



Other Unique Characteristics of this arrester type

1. No Long Term Electrical Stresses

Since the arrester is in series with a series gap, the voltage drop across the arrester and its housing is virtually Zero. This also translates into longer life of all materials in particular the rubber housing

2. Inherent Fail Open Mode

Because the external gap acts as an isolator of the arrester from the system during and after failure, there is virtually zero possibility of a sustained outage due to a fail short event.

3. Animal Induced Failures

Because of device construction, it is more difficult for an animal to cause a failure since there is no voltage across the MOR housing and if the animal parallels the gap, it will not cause fault current, just leakage current. This may harm the animal, but will likely not cause a ground fault.

4. TOV Resistant

Since the line to ground system voltage appears across the gap, and it can easily be set to a level above the worst case TOV, there is an inherently more reliable device that is not susceptible to a common arrester failure cause.



Toshiba Arrester and Photo