

How to protect PV panels during lightning strikes?

Therefore, an adequate lightning protection system (LPS) must be installed to protect the PV panels. In addition, the transient performance of PV panels during lightning strikes must be analyzed well. This paper presents a comprehensive review of the superior modeling methods of PV systems during lightning strikes.

Are PV systems vulnerable to lightning?

Similar to other power systems [,,,], PV systems are vulnerable to lightning because they are always installed in unsheltered open areas. Recent studies on lightning protection of PV systems have drawn much attentions [9].

How effective is lightning protection for PV systems?

The recommendations on the design of effective lightning protection for the PV systems are summarized as follows: The PV plant could suffer from serious lightning damages when a nearby transmission line is struck by lightning.

What influences Lightning transient overvoltage in a PV system?

The influences of the lightning current waveform, soil resistivity, and height of the tower on the lightning transient overvoltage in the PV system are discussed. Both scenarios studied above (lightning strikes to the transmission line and strikes to the tower) are considered.

Do lightning transient effects affect PV arrays during lightning strike?

The lightning transient effects on PV arrays are studied based on the system modeling to assess the recommended LPS designs studied in the literature. The paper also gives some recommendations about the modeling methods and protection of PV systems during lightning strike.

How to protect against lightning overvoltages?

The accurate analysis of lightning transients helps in selecting an effective and economic protection system. Moreover, the metal oxide surge arrester and the static synchronous compensator (STATCOM) were used to mitigate the lightning overvoltages [118].

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