

PJM DESIGN AND APPLICATION OF AIR DISCONNECT SWITCHES

1.0 SPECIFICATION

- 1.1 As a minimum requirement, all switches should be specified to meet the requirements of all applicable industry standards, including but not limited to ANSI, IEEE, NEMA, and ASTM.
- 1.2 Switches must also be designed with adequate electrical and mechanical characteristics for the specific electrical system on which it is installed and for the application for which it is intended. These include, but are not limited to continuous current rating, short-circuit rating, interrupting current rating, operating voltage, BIL, and environmental conditions.
- 1.3 Switches should be designed for an in-service operating life, considering normal routine maintenance, comparable to other electrical apparatus in the system to which it is applied.

1.4 The following minimum ratings apply to switches installed on the PJM system:

1.4.1	Nominal Voltage	230kV	345kV	500kV
1.4.2	Maximum Operating Voltage	242kV	362 kV	550kV
1.4.3	BIL	900kV	1300kV ^[1]	1,800kV ^[2]
1.4.5	Minimum 60Hz Withstand			
	Dry, 1 minute	465kV	610kV	810kV
	Wet, 10 seconds	385kV	525kV	710kV
1.4.6	Opening/Closing Capability	3/4 inch ice	3/4 inch ice	3/4 inch

ice

[1] 1050kV BIL may be used when line entrance arresters are used.

[2] 1550kV BIL may be used when line entrance arresters are used.

2.0 APPLICATION

- 2.1 Switches should be used in applications for which they were designed.
- 2.2 Switches should be applied in such a manner as to facilitate proper, safe, and reliable operation of the switch, as well as switch maintenance.
- 2.3 Switches should be applied such that they are not the limiting component in the normal or emergency operating rating of a circuit or bus.
- 2.4 Installation of grounding switches should be used in order to provide a safe work environment for maintenance personnel and to facilitate equipment and line maintenance.

3.0 RATING BEYOND NAMEPLATE

- 3.1 Long and short time emergency current ratings of electrical system apparatus, including disconnect switches, are critical to the reliable operation of the PJM system. Ratings of disconnect switches applied to the PJM system should be determined using the PJM TSDS guide “Determination of Air Disconnect Switch Ratings”.

4.0 MAINTENANCE

- 4.1 Disconnect switches should be routinely inspected and maintained to assure that they are operating at peak performance. Refer to Section V.L.2.F