

primtech - Lightning Protection Calculation

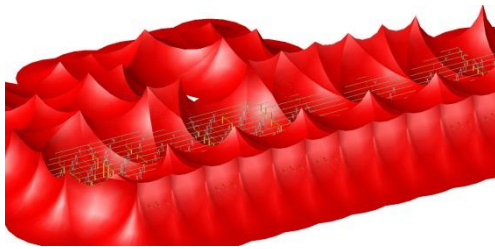
primtech features a powerful lightning protection calculation implementing conventional lightning protection calculation methods. Using lightning protection rods and wires as lightning arresters, it visually illustrates the required results in form of the lightning protection volumes and areas.

The Calculation Method

primtech supports lightning calculations according to the DIN VDE 0101 Standard as well as the rolling-sphere method derived from IEC 62305-1 Standard. In the rolling-sphere method, all 4 protection classes can be calculated also using spheres of various radii.

Optimal Support in the Engineering

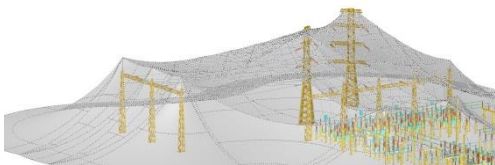
Due to the rapid calculation of the 3-D protection volumes - which is spanned by the lightning protection facility - primtech ideally supports the engineering process for High Voltage Switchgear. It enables the quick calculation of different lightning protection classes or the variation of lightning arresters (e.g. adjusting height of rods) which can then both be easily visually compared and evaluated.



Lightning protection area using rolling sphere method but of an insufficient lightning protection class

Rods and Wires

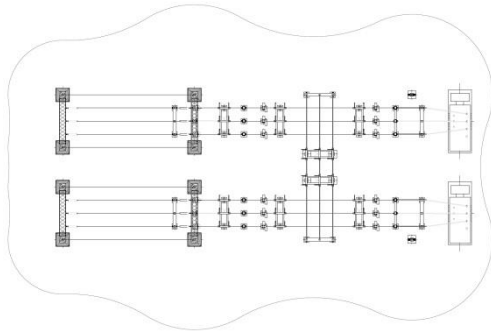
The primtech lightning protection calculation can accommodate lightning protection rods and wires as lightning arresters. The protection calculation of large complete substations, such as the 21-bay substation below with 46 lightning rods, is just as feasible as the combined calculation of lightning arresters comprising of rods and wires.



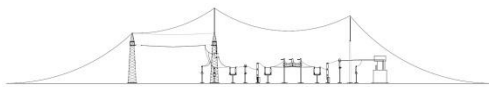
Lightning protection area spanned by lightning protection wires and complemented by lightning protection rods

Exporting the Protected Areas

3-D lightning protection volumes are inappropriate for illustrating the protected zones in plans. To this end, primtech shows protected areas horizontally at the heights to be protected and vertically along sectional planes of your choice.



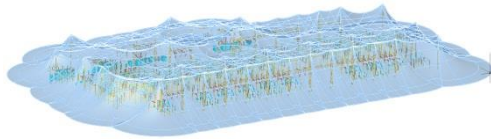
CAD-Plan showing the horizontal lightning protected area



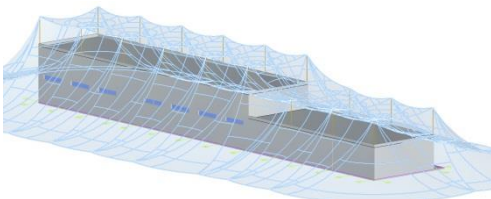
CAD-Plan showing the vertical lightning protected area

Development of High Voltage Substations

The lightning protection calculation is designed and optimized for Air Insulated Substations (Switchyard). This allows for rapid and consistent protection calculations even for large substations (see the 21-bay Switchyard below). Furthermore, the protection calculations can be applied to buildings, illustrated by the example below of a Gas Insulated Substation (GIS).



21-bay Air Insulated Substation (AIS) with 3-D lightning protection area



GIS-Building with 3-D protection area

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