Transformers

Transformers usually transform the utility’s medium distribution voltage to a lower voltage for utilization
by the data center.

The substation might transform voltage in excess of the site requirement and an on-site utility transformer might then transform the voltage to a lower voltage utilized by the building or facility.

The transformer size should be calculated based on the datacenter size, class and the load in the datacenter.

The Datacenter should have a dedicated transformers. The datacenter site should have considerable space for a minimum one electrical utility transformer and their associated electrical utility circuit paths and it must be located on the datacenter site in a secure and visible manner.

Datacenter is a critical infrastructure and it should have independent utility service to provide high availability services to the consumer.

Second power utility feed is advisable, but it depends on the uptime report of primary feed and benefits of a second power utility feed should be analyzed based on the mean time between failures (MTBF) to mean time to repair (MTTR) and power stability service to the data center.

A second power utility feed is recommended when the operational requirements of the data center results in an Operational Level 4, The availability requirements of the data center results in an Availability Ranking Level 4, The impact of downtime of the data center results in a Catastrophic classification, The reliability of the utility, based on the specific MTBF rates of the utility and the required mission time of the data center, is greater than 50%.

Electrical service entrance feed should have a minimum separation of 1.2 m (4 ft.) from other utilities along the entire route.

If redundant feeds are provided to the data center, it is recommended that the electrical service entrances to the facility have a minimum separation of 20 m (66 ft.) from the other electrical service entrances along the entire route.

At least two diversely routed electrical service feeds from different utility substations with each substation on separate power grids.

At least two diversely routed electrical service feeds from different utility substations with both Substations on the same power grid.

At least two diversely routed electrical service feeds from one utility substation. One electrical service feed from one utility substation.

Utility services should be underground to the facility as it will reduce the potential threat to system failure caused by overhead utility line damage. Overhead utility service is not recommended as it poses a risk to the vehicle accident, wind and some other weather conditions.

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