Mitigation method/Results/Conclusion

It was estimated that direct lightning hit the antenna tower, and the surge current entered the telecom centre through the coaxial cables and the building structures, flowing into the radio equipment. The current entered the LD-SLT through the radio equipment, the SLM through the building structure or floor, and the DCS through the radio equipment.

To prevent these damages from occurring again, it was required to do the following, as shown in Figure 2.3-2:

– Bonding earthing networks.

– Insert insulation transformer in CLK line.

– Insert insulation bushing to isolate the equipment from building structures.

– Change the cable panel with high insulation resistibility.

More detailed consideration should be given to connecting earthing networks when dealing with power systems of IT or other systems. The earthing resistance of IT systems is too high to absorb power fault current. If the earthing networks of several buildings are connected to each other, the total earthing resistance is lower than the original individual one. Therefore, national regulations or the relative Recommendations should be referred to.

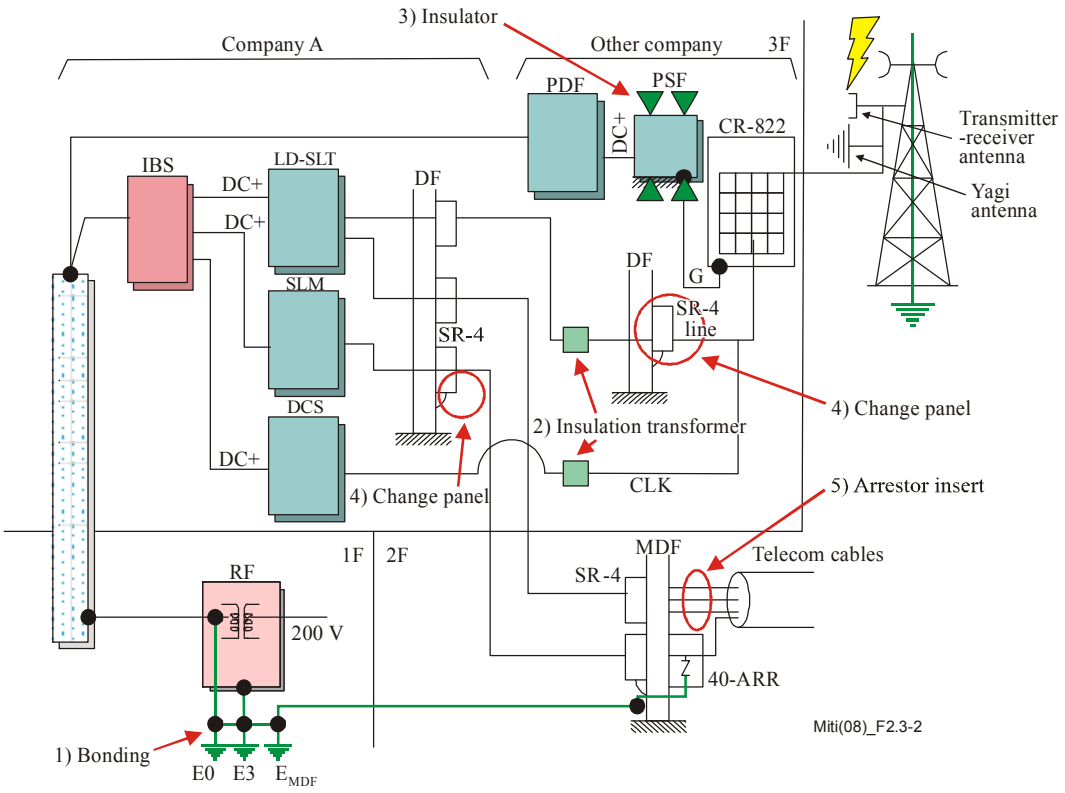

Figure 2.3-2 – Mitigation configuration

References

Recs ITU-T K.27, ITU-T K.35, ITU-T K.40, ITU-T K.56; Annex C.