

MOVEMENT OF EXISTING CABLES INSTALLED IN GROUND

The following points below are some of the important items to consider when the movement of existing cable installed in the ground is required

1. What is the cable voltage and what type of cable insulation is involved? (XLPE, Fluid Filled, PILAC)
2. What is the conductor size and conductor material?
3. What is the age of the cable? (date manufactured, date commissioned)
4. How many years has the cable been in service?
5. What is the rated MVA for the cable circuit and what is required maximum MVA? (Volts, Amps)
6. What is the average load or loading profile on the cable per year?
7. What are the soil conditions and how consistent is it? (soil temperature, thermal resistance and state)
8. What are the cable installation conditions? (burial depth, spacing, other cables/heat sources nearby)
9. What will be the ambient air temperature during removal and relocation of the cable?
10. What is the present condition of the cable serving or outer sheath?
11. Are there jointed cable sections with joints that have to be moved as well?
12. Do terminations have to be relocated as well?
13. Can the excavation of the soil be done without mechanical damage to the cable and outer sheath?
14. Can the cable be easily removed by hand with minimal force or is a power winch required?
15. Can the cable be moved without exceeding the minimum bending radius during removal and relocation?
16. Will the cables be relocated to a trench that is thermally independent of other heat sources?
17. Will the cable be reinstated with correct spacing, formation, soil conditions and installation conditions?
18. Will the cables be reinstated with proper bedding soil and compacted correctly?
19. Is the contractor experienced with removal of existing cable in the ground and its re-instatement?
20. Apart from the risk of mechanical damage to the insulation or dielectric disturbance during cable movement, thermal ageing of the main conductor insulation is a concern and some of the points above can have an influence on the rate and extent of such thermal ageing

Abnormal thermal ageing leads to thermal degradation of the insulation affecting the insulation's electrical and mechanical properties. Eventually, the cable insulation may break down resulting in premature failure. Should any point as listed present valid reasoning to make it a high risk to the cable's design performance, longevity and operational reliability, then the movement or relocation of the cable would not be recommended unless measures are put in place to manage or mitigate these high risks

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