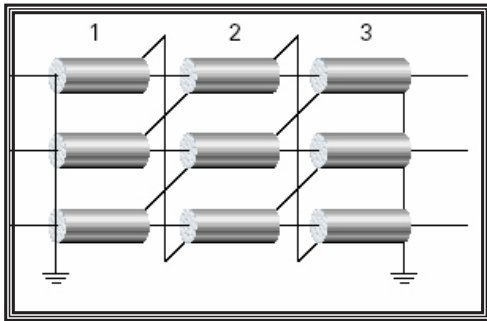
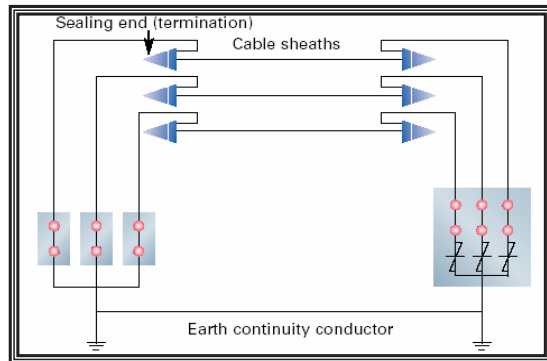


R&D Fund Project

Feasibility Study On Single Point Sheath Earthing For Single Core Cables



Example : Cross Bonding System



Single Point Sheath Earthing

Project Overview

This project involved a review of the existing cross-bonding system and looked into the possibility of using single-point-grounding system as well as multi-point-grounding system. The effects of these bonding schemes on ampacity, induced voltages, shield size requirements and the induced shield current were measured. Studies were also carried out to investigate the effect of single circuit and double circuit

installations with various spacing distances among the cables as well as spacing distance between the circuits. The calculations were made based on single core cables at voltage levels 33kV, 22kV, and 11kV. The construction of the cable was in accordance to TNBD specifications. The relevant IEC and AEIC standards were referred to while performing the tasks.

Deliverables

A report detailing out the following: -

- Results showed that using the single point grounding technique has improved the allowable current carrying capacity of the underground cable system. This will however introduce high standing voltage on the cable sheath.
- The amount of standing voltage can be reduced with a proper arrangement of cable installation or implementing an appropriate laying formation.
- With multi-point grounding technique, the standing voltage on the cable sheath is minimum, coupled with the low current carrying capacity on the cable.

Benefits

- This study addresses the feasibility of single point grounding from the point of view of current carrying capacity and induced standing voltage in comparison to multi point grounding system.
- The findings of this study contribute towards TNBD's continuous efforts to improve power delivery and minimize operating costs.