

The effect of electromagnetic fields due to HV line on the parallel pipeline

ABSTRACT

The effects of electromagnetic fields (EMF) due to high voltage line on the parallel pipeline are not a common issue nowadays. The EMF will bring up some pipeline problems and safety issues. There are only a few of previous studies about EMF effects consider in the lightning fault parameter and study in term of currents. This means the EMF effect of the transmission line to the pipeline still not completed. A study has been carried out to determine the effect of electromagnetic field in term of voltage and current of the shared corridor between the transmission tower and the pipeline. This study is simulated by using ANSYS Maxwell software. The induced voltage obtained is in the range of 2.6089V to 4.7723V which within the maximum acceptable value (15V) of IEEE 80-2000 standards. The induced current obtained is in the range of 3.1893nA to 61.4640 nA. Besides, mitigation is also discussed.

Keyword: Electromagnetic field; Induced voltage