

## **Presentation of HVA Faults in SONEGAS Underground Network and Methods of Faults Diagnostic and Faults Location**

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**Abstract :** Power supply networks are growing continuously and their reliability is getting more important than ever. The complexity of the whole network comprises numerous components that can fail and interrupt the power supply for the end user. Underground distribution systems are normally exposed to permanent faults, due to specific construction characteristics. In these systems, visual inspection cannot be performed. In order to enhance service restoration, accurate fault location techniques must be applied. This paper describes the different faults that affect the underground distribution system of SONEGAS (National Society of Electricity and Gas of Algeria), and cable fault location procedure with impulse reflection method (TDR), based in the analyses of the cable response of the electromagnetic impulse, allows cable fault prelocation. The results are obtained from real test in the underground distribution feeder from electrical network of energy distribution company of Souk-Ahras, in order to know the influence of cable characteristics in the types and frequency of faults.

**Keywords :** distribution networks, fault location, TDR, underground cable

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