Electrical Inspection Case Study Moroil Ltd

Power Quality Monitoring

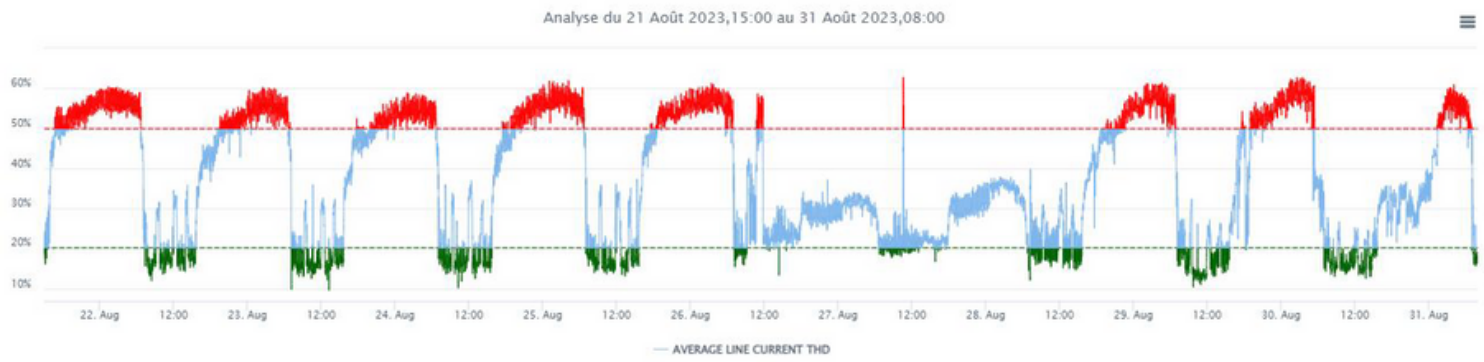
Time Frame: 2023

Scope:

The power quality monitoring exercise was carried out to evaluate the harmonic distortions present in Moroil Ltd's electrical systems, in particularly the Total Harmonic Distortion, refered to as ITHD%, to discern any potential anomalies, variations, or issues that could compromise the efficiency or longevity of its equipment

Methodology

An EASTRON, an energy monitoring meter, was installed at CEB mains to monitor the quality of the incoming electrical supply harmonics. The meter was installed for a period of two weeks both while the refinery was operating and when it was not.



Analysis

As shown by the above Figure, while the refinery was not operating, the %ITHD sat at an average of 37.44% average with peaks at 62.76% far above the 20% recommended by IEEE and BS7430 guidelines.

Recommendations

To reduce Total Harmonic Distortions, it was recommended that regular maintenance of the grounding system be carried out as poor grounding can sometimes exacerbate harmonic issues, install active or passive harmonic filters which can substantially reduce harmonic currents and .network reactors to the inputs of drives or other harmonic-generating devices