ABSTRACT

As technology develops, the Non-Destructive Testing method is often used in various tests, because the Non-Destructive Testing method is a test without directly damaging the object. Many design tools that support the Non-Destructive Testing method, one of which is the design of the tools carried out in this final project. The design of the tool in the form of a multicoil system will identify an anomaly which in this case is a copper plate found in the soil. Then some data will be obtained in the form of electromotive force (emf). The multicoil system can operate optimally at a frequency of 100Hz, judging from the distribution pattern of the induced electromotive force (emf) produced. The identification process is carried out by reviewing two conditions, the first condition is when the anomaly is located under the transmitter coil and the second condition is when the anomaly is located under the closest receiver coil from the transmitrer coil. The standard deviation of the distribution of induced electromotive force (emf) values for conditions when anomaly located below the transmitter coil at the corner and center of the multicoil configuration results in a low value standard deviation and increases when the anomaly is moved to the nearest receiver coil. For the transmitter coil located in the multicoil center, the standard deviation generated under anomalous conditions under the transmitter coil is low and will increase if the anomaly is moved to its position under the closest receiver coil.

Keywords: Non-Destructive Testing, Anomaly, Soil, electromotive force (emf), Standard Deviation.