ABSTRACT

An arc furnace is primary equipment on steel making industry (PT. Ispat Indo) and source of harmonics. High current which caused by harmonic distortion possible to affect relay protection setting. on this final project, discuss about how to set over current relay with respect to harmonic effect which is excited by arc furnace.

This final project testifies to the influence of harmonics that can affect the relay settings on the PT. Ispat Indo. In the simulation detected that the largest harmonic contained in the arc furnace load, precisely on the arc furnace transformers. In the arc furnace load, there are two forms of harmonic disturbance, there are normal harmonic disturbance and worst harmonic disturbances. Normal harmonics produce current THD of 22.23% which occurred in a long time. While the worst harmonic disturbances produce current THD of 61.07% which occurred in a short time. Harmonic disturbances above become one of the parameters in the relay settings so that the power supply remains safe even if such defects occur.

**Keyword**: Harmonic, over current relay, arc furnace