

Arc Flash Analysis: Technique to Mitigate Fire Incidents in Substations

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Abstract : Arc Flash Analysis has been a subject of great interest since the electrical fire incidents have been reduced to a great extent after the implementation of arc flash study at different sites. An Arc flash in substations is caused by short circuits over the air or other melted conductors and small shrapnel. Arc flash incidents result in the majority of deaths in substations worldwide. Engro Fertilizers Limited (EFERT) site having a mix of vintage non-internal arc rated and modern arc rated switchgears, carried out an arc flash study of the whole site in accordance with NFPA70E standard. The results not only included optimizing site protection coordination settings but also included marking of Shock and Arc flash protection boundaries in all switchgear rooms. Work permit procedures upgradation is also done in accordance with this study to ensure proper arc rated PPEs and arc flash boundaries protocols are fully observed and followed. With the new safety, protocols working on electrical equipment will be much safer than ever before.

Keywords : Arc flash, non-internal arc rated, protection coordination, shock boundary

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