

# E1

## **Title of Abstract:**

Line Current Differential Relay Operation under Severe Current Transformer Saturation Conditions

## **Author(s), Company(s)**

Roger A. Hedding, ABB Inc.  
Stig Holst, ABB Inc.

## **Speaker, Company (if known)**

Roger A. Hedding, ABB Inc.

## **Abstract (not to exceed 300 words)**

Relays rely on the current transformer to produce a secondary current that faithfully reflects the primary current for proper operation. In some instances this isn't the case. This paper will look at cases where severe ct saturation can be a problem, review the real time digital simulator inputs to the relay, and look at what mechanisms in modern line current differential relays are used to mitigate the problem.

This proposed paper will:

1. Briefly summarize the ct saturation problem.
2. Review cases where ct saturation is an issue.
3. Describe digital simulations of network and DFR record of saturation
4. Describe relay response to ct saturation

## **Contact Author:**

**Name:** Roger A. Hedding

**Company:** ABB Inc.

**Phone:** Office: (262) 431-4036  
Cell: (414) 581-6115  
Fax: (262) 431-4036

**Email:** roger.a.hedding@us.abb.com