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PRACTICES

July 2016

Electrical

PIP ELEGL03
Guidelines for Power Systems Analysis

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1. Scope

This Practice provides guidelines for electrical system analysis used to develop and validate electrical power systems performance, including safety, reliability, and efficiency.

This Practice does not provide guidance on the type of analysis to be performed for specific applications. The following items are examples of additional studies which are beyond the scope of this Practice:

- a. Ground grid study
- b. High voltage substation design analysis
- c. Insulation coordination studies
- d. Switching transients
- e. Flicker
- f. Telephone Interference Factor (TIF)
- g. Load shedding
- h. Motor re-acceleration
- i. System efficiency
- j. Power factor correction

2. References

Applicable parts of the following industry codes and standards shall be considered an integral part of this Practice. The edition in effect on the date of contract award shall be used, except as otherwise noted. Short titles are used herein where appropriate.

2.1 Industry Codes and Standards

- Institute of Electrical and Electronic Engineers (IEEE)
 - IEEE C37.56 - *AC High-Voltage Circuit Breakers Rated on Symmetrical Current Basis - Preferred Ratings and Related Required Capabilities for Voltages Above 100 kV*
 - IEEE C37.010 - *Application Guide for AC High-Voltage Circuit Breakers Rated on a Symmetrical Current Basis*
 - IEEE C37.012 - *Application Guide for Capacitance Current Switching for AC High Voltage Circuit Breakers*
 - IEEE C37.5 - *Guide for Calculation of Fault Currents for Application of AC High-Voltage Circuit Breakers on a Total Current Basis (withdrawn)*
 - IEEE C37.13 - *Low Voltage AC Power Circuit Breakers Used in Enclosures*
 - IEEE 141 (IEEE Red Book) - *Recommended Practices for Electric Power Distribution in Industrial Plants*
 - IEEE 242 (IEEE Buff Book) - *Recommended Practice for Protection and Coordination of Industrial and Commercial Power Systems*