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The Grounding Electrode System

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This book includes an analysis of the grounding electrode system, which includes the various types of grounding electrodes that are commonly used to ground systems and equipment. These grounding electrodes include:

- Metal underground water pipes
- Metal in-ground support structures
- Concrete-encased electrodes
- The ground ring
- Ground rods
- Chemically charged ground rods
- Plate electrodes

In addition to referencing electrical systems to the earth as a means of protecting people and equipment from the hazards of ground-fault currents, this book also includes a detailed explanation of a lightning protection system.

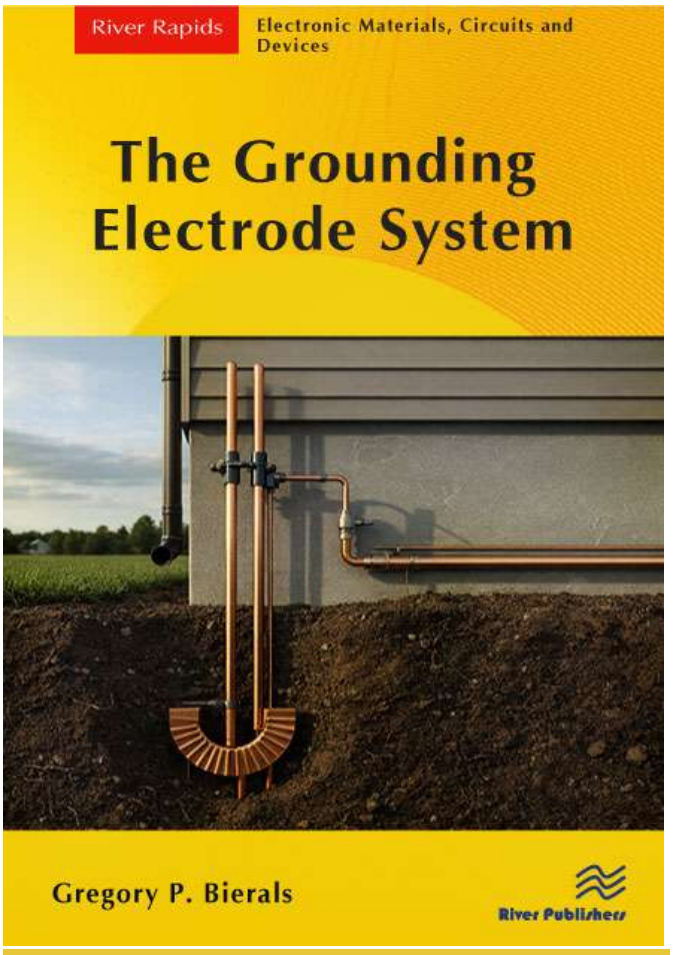
Other important topics are covered, including the importance of bonding the grounding electrodes of different systems to reduce the effects of voltage differences between these systems, which is extremely important for the protection of people (there is an example of an actual case history where an individual was killed due to the lack of bonding between the electrical service grounding electrode system and a land-line telephone system grounding electrode). The bonding of the grounding electrodes of different systems will also reduce the resistance-to-ground of the entire grounding electrode system, an added benefit for people and equipment.

This summary includes an explanation of the use of surge-protective devices. And, for systems that require continuous power, an alternative system design using an impedance-grounded system is discussed in detail.

Finally, there is a 30-question quiz and an answer key to further enhance the understanding of this very important topic.

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Ground, Grounded, Grounded Conductor, Grounding Conductor, Impedance, Grounding Electrodes, Grounding Electrode Conductor, Groundâ€“Fault, Grounding-Fault Current Path, Effective, Ground-Fault Protection of Equipment (GFPE), Grounding Electrode Conductor, Lightning Protection, Bond (Bonding), Bonding of Grounding Electrodes, Impedance Grounded Systems, Insulation Withstand Ratings, Conductor Fusing or Melting Currents

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