



## Power Systems Analysis (2nd Edition)

By Arthur R. Bergen, Vijay Vittal

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**Power Systems Analysis (2nd Edition)** By Arthur R. Bergen, Vijay Vittal

This is the first book on power system analysis to explore the major changes in the structure and operation of the electric utility industry, and to show how power system operation will be affected by the new changes. It reflects the trends in state-of-the-art, *computer-based* power system analysis and shows how to apply *each modern analysis tool* in designing and improving an expansion of an existing power system. **KEY FEATURES:** Features a computer-based design example (carried out from chapter-to-chapter) which uses all the analysis. As the example develops, readers determine the parameter values for a proposed transmission system upgrade to support load growth and a new steel mill being located in the area; convert all the parameters to per unit -- the preferred choice of units for system analysis; determine typical parameters for the generators in the system being designed; develop the admittance matrix and the impedance matrix for the system being designed; conduct the power flow and check the designed system for possible violations, and appropriately modify the design; and conduct a contingency analysis on the designed system; analyze the behavior of the designed system under faulted condition; continue the design with a selection of relay settings to protect the system in the event of these faulted conditions; and perform a transient stability simulation on the system and verify the ability of the system to remain stable. For engineers working in the electric utility industry.

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### Editorial Review

#### From the Back Cover

Keeping pace with the major changes in the structure and operation of the electric utility industry, this is the first book on power system analysis that explores the issues and shows how power system operation will be affected by the changes in the industry. It incorporates state-of-the-art, *computer-based* power system analysis and describes how to apply *each modern analysis tool* in designing and improving an expansion of an existing power system.

### FEATURES/BENEFITS

- **NEW—Describes the new market environment of the electric utility industry.**
  - Introduces changes in the electric utility industry structure, and describes how the restructuring will impact important aspects of power system analysis.
- **NEW—Emphasizes computer application and design** and reflects current industry practice.
- **NEW—A computer-based design problem dealing with the calculations of transmission line parameters** is introduced in Chapter 3 and continued in each successive chapter.
  - Providing readers with the opportunity to apply the tools they encounter in each chapter.
- **NEW—A new chapter on network matrices**, their construction and manipulation.
  - This chapter introduces efficient computational techniques to analyze large power systems.
- **NEW—Many additional worked-out examples and problems**—Includes several problems which can be solved using MATLAB.
  - Giving the reader clear illustrations of key issues and provides them with methods to solve complex problems.
  - **Clearly stated objectives and explanation of material** without sacrificing necessary rigor and understanding.

### Users Review

#### From reader reviews:

##### Rafael Runyan:

The guide untitled Power Systems Analysis (2nd Edition) is the e-book that recommended to you to see. You can see the quality of the e-book content that will be shown to you actually. The language that author use to explained their ideas are easily to understand. The article author was did a lot of investigation when write the book, therefore the information that they share to you is absolutely accurate. You also could get the e-book of Power Systems Analysis (2nd Edition) from the publisher to make you far more enjoy free time.

##### Jonathan Peterson:

The reason? Because this Power Systems Analysis (2nd Edition) is an unordinary book that the inside of the guide waiting for you to snap that but latter it will distress you with the secret the idea inside. Reading this

book next to it was fantastic author who else write the book in such remarkable way makes the content inside easier to understand, entertaining method but still convey the meaning completely. So , it is good for you for not hesitating having this any more or you going to regret it. This phenomenal book will give you a lot of benefits than the other book possess such as help improving your ability and your critical thinking technique. So , still want to postpone having that book? If I had been you I will go to the publication store hurriedly.

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