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| Titolo | Reliability analysis for asset management of electric power grids // Robert D. Ross, IWO, Ede, the Netherlands, TU Delft, Delft, the Netherlands |
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| ISBN | 1-5231-2846-1 1-119-12518-9 1-119-12520-0 |
| Descrizione fisica | 1 online resource (518 pages) |
| Disciplina | 621.319 |
| Soggetti | Electric power distribution - Reliability Electronic books. |
| Lingua di pubblicazione | Inglese |
| Formato | Materiale a stampa |
| Livello bibliografico | Monografia |
| Nota di bibliografia | Includes bibliographical references. |
| Nota di contenuto | Basics of Statistics and Probability -- Measures in Statistics -- Specific Distributions -- Graphical Data Analysis -- Parameter Estimation -- System and Component Reliability -- System States, Reliability and Availability -- Application to Asset and Incident Management -- Miscellaneous Subjects -- Appendix A Weibull Plot -- Appendix B Laplace Transforms -- Appendix C Taylor Series -- Appendix D SI Prefixes -- Appendix E Greek Characters -- Appendix F Standard Weibull and Exponential Distribution -- Appendix G Standardized Normal Distribution -- Appendix H Standardized Lognormal Distribution -- Appendix I Gamma Function -- Appendix J Plotting Positions. |
| Sommario/riassunto | A practical guide to facilitate statistically well-founded decisions in the management of assets of an electricity grid Effective and economic electric grid asset management and incident management involve many complex decisions on inspection, maintenance, repair and replacement. This timely reference provides statistically well-founded, tried and tested analysis methodologies for improved decision making and asset management strategy for optimum grid reliability and availability. The |

techniques described are also sufficiently robust to apply to small data sets enabling asset managers to deal with early failures or testing with limited sample sets. The book describes the background, concepts and statistical techniques to evaluate failure distributions, probabilities, remaining lifetime, similarity and compliancy of observed data with specifications, asymptotic behavior of parameter estimators, effectiveness of network configurations and stocks of spare parts. It also shows how the graphical representation and parameter estimation from analysis of data can be made consistent, as well as explaining modern upcoming methodologies such as the Health Index and Risk Index. Key features: -Offers hands-on tools and techniques for data analysis, similarity index, failure forecasting, health and risk indices and the resulting maintenance strategies. -End-of-chapter problems and solutions to facilitate self-study via a book companion website. The book is essential reading for advanced undergraduate and graduate students in electrical engineering, quality engineers, utilities and industry strategists, transmission and distribution system planners, asset managers and risk managers.
