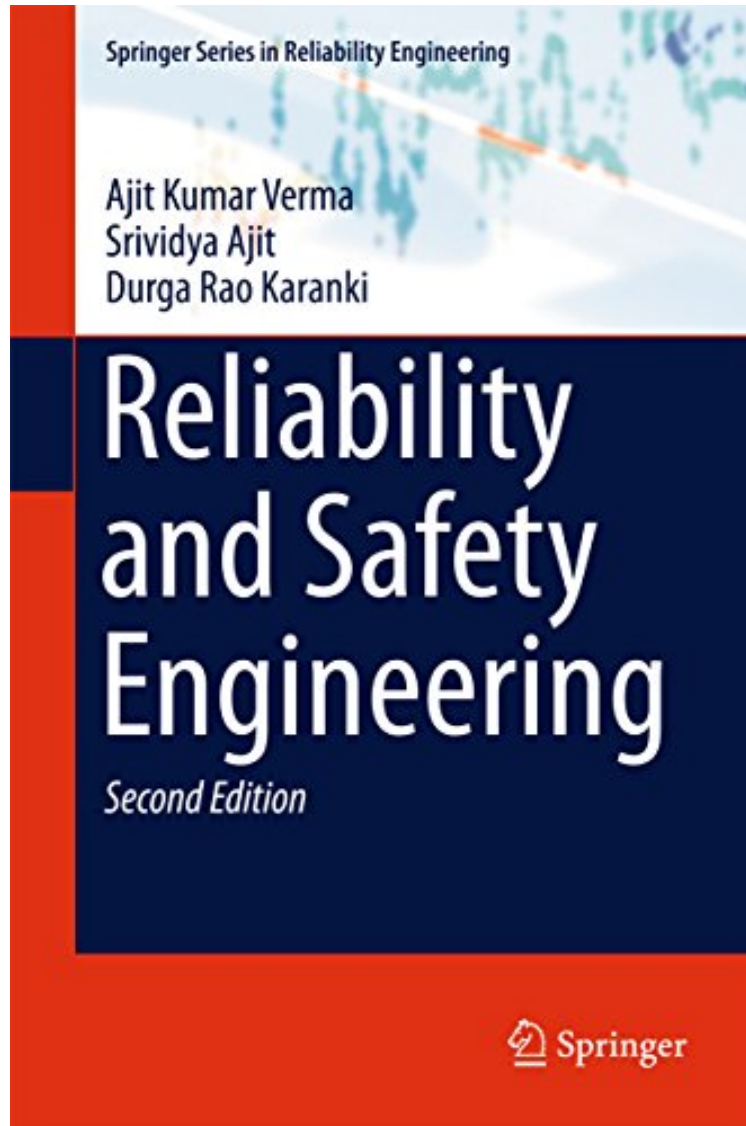


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Reliability and Safety Engineering (Springer Series in Reliability Engineering)

Ajit Kumar Verma, Srividya Ajit, Durga Rao Karanki

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Ajit Kumar Verma, Srividya Ajit, Durga Rao Karanki : Reliability and Safety Engineering (Springer Series in Reliability Engineering) before purchasing it in order to gauge whether or not it would be worth my time, and all praised Reliability and Safety Engineering (Springer Series in Reliability Engineering):

Reliability and safety are core issues that must be addressed throughout the life cycle of engineering systems.

Reliability and Safety Engineering presents an overview of the basic concepts, together with simple and practical illustrations. The authors present reliability terminology in various engineering fields, viz., electronics engineering, software engineering, mechanical engineering, structural engineering and power systems engineering. The book describes the latest applications in the area of probabilistic safety assessment, such as technical specification optimization, risk monitoring and risk informed in-service inspection. Reliability and safety studies must, inevitably, deal with uncertainty, so the book includes uncertainty propagation methods: Monte Carlo simulation, fuzzy arithmetic, Dempster-Shafer theory and probability bounds. Reliability and Safety Engineering also highlights advances in system reliability and safety assessment including dynamic system modeling and uncertainty management. Case studies from typical nuclear power plants as well as from structural, software and electronic systems are also discussed. Reliability and Safety Engineering combines discussions of the existing literature on basic concepts and applications with state-of-the-art methods used in reliability and risk assessment of engineering systems. It is designed to assist practicing engineers, students and researchers in the areas of reliability engineering and risk analysis.

From the Back Cover Reliability and safety are core issues that must be addressed throughout the life cycle of engineering systems. Reliability and Safety Engineering presents an overview of the basic concepts, together with simple and practical illustrations. The authors present reliability terminology in various engineering fields, viz., electronics engineering, software engineering, mechanical engineering, structural engineering, and power systems engineering. They describe the latest applications in the area of probabilistic safety assessment, such as technical specification optimization, risk monitoring and risk informed in-service inspection. Reliability and safety studies must, inevitably, deal with uncertainty, so the book includes uncertainty propagation methods: Monte Carlo simulation, fuzzy arithmetic, Dempster-Shafer theory and probability bounds. Reliability and Safety Engineering also highlights advances in system reliability and safety assessment including dynamic system modeling and uncertainty management. Case studies from typical nuclear power plants, as well as from structural, software, and electronic systems are also discussed. Reliability and Safety Engineering combines discussions of the existing literature on basic concepts and applications with state-of-the-art methods used in reliability and risk assessment of engineering systems. It is designed to assist practicing engineers, students and researchers in the areas of reliability engineering and risk analysis.

About the Author Prof. Ajit Kumar Verma is Director of the International Institute of Information Technology Pune, India. He is also a professor in the Department of Electrical Engineering at Indian Institute of Technology Bombay with a research focus on reliability engineering and quality management. He has over 180 papers in journals and in conference proceedings. He is the editor-in-chief of OPSEARCH (published by Springer) and of the International Journal of Systems Assurance Engineering and Management (also published by Springer). He is on the editorial board of various international journals. He has been a guest editor of IJRQSE, IJPE, CDQM, IJAC, etc., and has supervised 23 PhDs. His area of research is reliability and maintainability engineering.

Prof. Srividya Ajit received her BE degree in 1982, her MTech in Reliability Engineering in 1985 and her PhD in 1994, from IIT Bombay. She has been with IIT Bombay since 1988 and is currently a professor in the Department of Civil Engineering at IIT Bombay with a research focus on reliability in engineering design, structural reliability and environmental effects on system reliability. Over 50 of her papers have been published in various national and international journals, and over 100 have been part of national or international conferences. She has also co-authored a book entitled Fuzzy Reliability Engineering: Concepts and Applications. She was conference chairperson of the International Conference on Reliability, Safety Hazard 2005 (Advances in Risk Informed Technology), for which she also edited the proceedings; the International Conference on Quality, Reliability and Infocom 2006; and the International Conference on Reliability, Safety and Quality Engineering 2008 (for which she also edited the proceedings). She has been instrumental in editing and reviewing the proceedings of various international conferences, such as the International Conference on Quality Reliability and Control 2001, the International Conference on Multimedia and Design 2002, and the International Conference on Quality Reliability and Information Technology 2003. She is a recipient of SREQOM's Leadership in Reliability Engineering Education Research award.

Dr. Durga Rao Karanki is presently working as a scientist at the Paul Scherrer Institute, Switzerland. He graduated in Electrical and Electronics Engineering from the Nagarjuna University, India, and holds MTech (Reliability Engineering) and PhD (Engg.) degrees from the Indian Institute of Technology Kharagpur and Bombay respectively. He also completed an OCEP course in Nuclear Science and Engineering at the Bhabha Atomic Research Centre (BARC), India. He was with BARC as a scientist in the Reactor Safety Division during 2002-2008. He was also a visiting faculty member at the training school for the Department of Atomic Energy, India. He has been actively involved in probabilistic safety assessment (PSA) of nuclear reactors, and risk informed decision-making and its implementation in chemical and nuclear facilities. His research interests are uncertainty management in PSA, accident dynamics for integrated safety analysis, and application of Monte Carlo simulation and genetic algorithms in reliability/risk management. He has published several research papers in leading international journals and conferences, as well as being an organizing committee member of reliability and safety conferences: ICRESH 2005, ICQRIT 2006, ICRSQE 2008, and ICQRIT 2009. He is a member of the editorial board of IJSAEM. He is a recipient

of SREQOMrsquo;s researcher award for his contribution to uncertainty management in PSA of NPPs.