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Titolo	The Risks of Nuclear Energy Technology : Safety Concepts of Light Water Reactors / / by Günter Kessler, Anke Veser, Franz-Hermann Schlüter, Wolfgang Raskob, Claudia Landman, Jürgen Päsler-Sauer
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Soggetti	Nuclear energy Radiation - Safety measures Radiation—Safety measures Energy systems System safety Nuclear Energy Effects of Radiation/Radiation Protection Energy Systems Security Science and Technology
Lingua di pubblicazione	Inglese
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Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	From the Contents: Inherent safety characteristics of Pressurized Water- and Boiling Water Reactors (PWRs and BWR s) -- Safety design concepts of present and future PWRs and BWR s -- Radiation protection and emission of radioactivity during normal operation of PWRs and BWRs -- Accident and risk analysis as well as additional severe accident measures to be initiated after core cooling accidents -- Safety design concepts against external hazards, e. g. earthquakes, chemical explosions, flooding.
Sommario/riassunto	The book analyses the risks of nuclear power stations. The security concept of reactors is explained. Measures against the spread of radioactivity after a severe accident, accidents of core melting and a possible crash of an air plane on a reactor containment are discussed. The book covers three scientific subjects of the safety concepts of Light

Water Reactors: – A first part describes the basic safety design concepts of operating German Pressurized Water Reactors and Boiling Water Reactors including accident management measures introduced after the reactor accidents of Three Mile Island and Chernobyl. These safety concepts are also compared with the experiences of the Fukushima accidents. In addition, the safety design concepts of the future modern European Pressurized Water Reactor (EPR) and of the future modern Boiling Water Reactor SWR-1000 (KERENA) are presented. These are based on new safety research results of the past decades. – In a second, part the possible crash of military or heavy commercial air planes on a reactor containment is analyzed. It is shown that reactor containments can be designed to resist to such an airplane crash. – In a third part, an online decision system is presented. It allows to analyze the distribution of radioactivity in the atmosphere and to the environment after a severe reactor accident. It provides data for decisions to be taken by authorities for the minimization of radiobiological effects to the population. This book appeals to readers who have an interest in save living conditions and some understanding for physics or engineering.