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Nota di contenuto	Background on Japanese and U.S. Nuclear Plants -- Great East Japan Earthquake and Tsunami and Impacts on Japanese Nuclear Plants -- Fukushima Daiichi Nuclear Accident -- Lessons Learned: Plant Operations and Safety Regulations -- Lessons Learned: Offsite Emergency Management -- Lessons Learned: Nuclear Safety Culture -- References -- Appendix A: Biographical Sketches of Committee, Technical Advisor, and Staff -- Appendix B: Presentations, Breakout Sessions, and Visits -- Appendix C: Detailed Accident Time Line -- Appendix D: Operation and Support Organizations -- Appendix E: Recommendations from Other Organizations -- Appendix F: Regulator and Industry Actions in the United States -- Appendix G: Hydrogen Control in Severe Accidents -- Appendix H: Nuclear Plant Emergency Procedures and Guidelines -- Appendix I: Probabilistic Risk Assessment -- Appendix J: Human Reliability Analysis -- Appendix K: Tsunami Hazards in the Atlantic Ocean Basin -- Appendix L: Factoring the Costs of Severe Nuclear Accidents into Backfit Decisions -- Appendix M: Access to Timely and Reliable Information to Support Decision Making During a Nuclear Power Plant Accident -- Appendix N: Conversions and Units -- Appendix O: Acronyms.
Sommario/riassunto	"The March 11, 2011, Great East Japan Earthquake and tsunami sparked a humanitarian disaster in northeastern Japan. They were responsible for more than 15,900 deaths and 2,600 missing persons as well as physical infrastructure damages exceeding 200 billion dollars. The earthquake and tsunami also initiated a severe nuclear accident at the Fukushima Daiichi Nuclear Power Station. Three of the six reactors at the plant sustained severe core damage and released hydrogen and radioactive materials. Explosion of the released hydrogen damaged three reactor buildings and impeded onsite emergency response efforts. The accident prompted widespread evacuations of local populations, large economic losses, and the eventual shutdown of all nuclear power plants in Japan. Lessons Learned from the Fukushima Nuclear Accident for Improving Safety and Security of U.S. Nuclear Plants is a study of the Fukushima Daiichi accident. This report examines the causes of the crisis, the performance of safety systems at the plant, and the responses of its operators following the earthquake and tsunami. The report then considers the lessons that can be learned and their implications for U.S. safety and storage of spent nuclear fuel and high-level waste, commercial nuclear reactor safety and security regulations, and design improvements. Lessons Learned makes recommendations to improve plant systems, resources, and operator training to enable effective ad hoc responses to severe accidents. This report's recommendations to incorporate modern risk concepts into safety regulations and improve the nuclear safety culture will help the industry prepare for events that could challenge the design of plant structures and lead to a loss of critical safety functions. In providing a broad-scope, high-level examination of the accident, Lessons Learned is meant to complement earlier evaluations by industry and regulators. This in-depth review will be an essential resource for the nuclear power industry, policy makers, and anyone interested in the state of U.S. preparedness and response in the face of crisis situations."--