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Nota di contenuto	Nuclear waste story : setting the stage / Thomas A. Cotton -- Regulating the geologic disposal of high-level nuclear waste at Yucca Mountain / William M. Murphy -- Performance assessment : what is it and why is it done? / Chris Whipple -- Performance assessments : are they necessary or sufficient? / Rodney C. Ewing -- Technical policy decision making in siting a high-level nuclear waste repository / Allison M. Macfarlane -- The mountain matters / David Applegate -- Volcanism : the continuing saga / Bruce M. Crowe ... [et al.] -- Climate change at Yucca Mountain : lessons from earth history / MaryLynn Musgrove and Daniel P. Schrag -- Hot upwelling water : did it really invade Yucca Mountain? / Nicholas S.F. Wilson and Jean S. Cline -- Water and radionuclide transport in the unsaturated zone / June

Fabryka-Martin ... [et al.] -- Colloidal transport of radionuclides / Annie B. Kersting -- Contaminant transport in the saturated zone at Yucca Mountain / Lynn W. Belhar -- Thermohydrologic effects and interactions / G.S. Bodvarsson -- The near field at Yucca Mountain : effects of coupled processes on nuclear water isolation / William M. Murphy -- Waste package corrosion / David W. Shoesmith -- Drip shield and backfill / David Stahl -- Zircaloy cladding / Eric R. Siegmann -- Spent fuel / Jordi Bruno and Esther Cera -- Glass / Werner Lutze -- Storing waste in ceramic / William L. Bourcier and Kurt Sickafus -- The path to Yucca Mountain and beyond / Luther J. Carter -- Uncertainty, models, and the way forward in nuclear waste disposal / Allison M. Macfarlane.

Sommario/riassunto

Despite approval by Congress and the Bush administration and over seven billion dollars already spent, the Yucca Mountain, Nevada, site for disposal of highly radioactive spent nuclear fuel is not yet in operation. The reasons for the delay lie not only in citizen and activist opposition to the project but also in the numerous scientific and technical issues that remain unresolved. Although many scientists favor geologic disposal of high-level nuclear waste, there are substantial unknowns in projecting the performance of a site over the tens to hundreds of thousands of years that may be required by Environmental Protection Agency standards. *Uncertainty Underground* is the first effort to review the uncertainties in the analysis of the long-term performance of the proposed repository at Yucca Mountain. The book does not pass judgment on the suitability of the site but provides reliable science-based information to support open debate and inquiry into its safety. Experts from the geosciences, industry, and government review different aspects of the repository system, focusing on the uncertainties inherent in each. After an overview of the historical and regulatory context, the contributors investigate external factors (including climate change and volcanic activity) that could affect repository performance and then turn to topics concerning the repository itself. These include hydrologic issues, the geological conditions with which the nuclear waste in the repository would interact, and the predicted behavior of the different kinds of waste and waste package materials. *Uncertainty Underground* succeeds in making these important technical issues understandable to a wide audience, including policymakers and the general public.
