AMITAVA GHOSH

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Ph.D., Mining Engineering, University of Arizona, 1990
M.S., Mining Engineering, University of Arizona, 1983
B.Tech., Mining Engineering, Indian Institute of Technology, Kharagpur, 1978

Dr. Ghosh is a mining engineer with more than 25 years of diverse experience conducting academic and industrial research, consulting in mining and geological engineering, and performing reliability/risk engineering. His expertise is in numerical simulations, field and laboratory experiments, rock mechanics and rock engineering, explosives and blasting, soil mechanics, rock fracture mechanics, application of probabilistic methods, risk analysis, theory of fractal geometry, geostatistics, and artificial intelligence. Since joining the Center for Nuclear Waste Regulatory Analyses, Geosciences and Engineering Division, he has provided technical support to the U.S. Nuclear Regulatory Commission (NRC) on the design and experimental programs for site characterization of the proposed nuclear waste repository, spent fuel storage projects, reclamation of active mill tailings sites, and design and performance of nuclear facilities subjected to different natural and human-induced hazards.

Dr. Ghosh is currently involved in probabilistic risk assessment, identification of natural and human-induced hazards, seismic ground motion propagation, and design and performance of repository facilities. Currently, he is leading a study to develop an efficient probabilistic approach for risk assessment in geotechnical applications. Dr. Ghosh was the principal investigator and led a multidisciplinary team for all aspects of the design and performance of the potential repository at Yucca Mountain encompassing the fuel receiving, handling, aging, and packaging at the surface facilities and permanent emplacement at the subsurface facilities. In addition, he was the principal investigator for two projects on Independent Spent Fuel Storage Installation (ISFSI), Centralized Interim Storage Facility and Private Fuel Storage Facility, to develop the NRC staff Safety Evaluation Report (SER). He was responsible for the overall SER development and personally developed the staff position on credible natural, human-induced, and operational hazards. These hazards include activities at nearby facilities and overflights by commercial and military aircraft. Dr. Ghosh testified in the adjudicatory hearings before the Atomic Safety and Licensing Board on contentions filed by the State of Utah with respect to credible human-induced hazards. He was also part of the team developing SERs for other ISFSI projects, Diablo Canyon, and Humboldt Bay nuclear power plants.

As part of a worldwide competition, The International Society for Rock Mechanics awarded Dr. Ghosh the Manuel Rocha Medal in 1992 for his Ph.D. research on the application of fractal geometry and numerical methods to examine fracture formation and propagation in rock using explosives. A paper based on the application of fractal geometry to quantify the effects of natural fractures on rock blasting won the Society of Mining Engineers Outstanding Student Paper contest in the Graduate Division in 1989. Dr. Ghosh worked as a Technical Services Engineer at IDL Chemicals Ltd. He has taught several courses at the University of Arizona, has published more than 40 technical papers and 55 research reports, and has reviewed papers for several journals and rock mechanics symposiums. He has also developed and chaired the session of Rock Fragmentation from Blasting at the 35th U.S. Symposium on Rock Mechanics and the session on Waste Repositories at the 38th U.S. Symposium on Rock Mechanics.

PROFESSIONAL CREDENTIALS: IDL Chemicals Ltd.: technical services engineer, 1978–81; University of Arizona: graduate assistant/associate, 1982–90; University of Nevada, Reno: postdoctoral fellow, 1990–2; Southwest Research Institute: 1992–[research engineer, 1992–4; senior research engineer, 1994–9; principal engineer, 1999–2004; staff engineer, 2004–present].

MEMBERSHIPS: American Geophysical Union; American Rock Mechanics Association International; International Society for Rock Mechanics; Society for Mining, Metallurgy, and Exploration; International Association for Mathematical Geology.

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