



Nuclear Regulatory Commission
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Admitted: 07/12/2011
Rejected:

Withdrawn:
Stricken:

NRC000151

Bruce M. Biber
Statement of Professional Qualifications

CURRENT POSITION

Environmental Systems Engineer
Radiological Health Risk Section
Environmental Science Division
Argonne National Laboratory
Argonne, IL

EDUCATION

Ph.D., Chemistry, Princeton University
M.S., Chemistry, Princeton University
B.A., Chemistry, St. Anselm College

PROFESSIONAL

American Chemical Society, Member
American Nuclear Society, Member
Society for Risk Analysis, Member

QUALIFICATIONS

Dr. Biber is an environmental systems engineer with over 20 years of work experience concerned with radiological pathway analysis and dose calculations for environmental impact assessments for the U.S. Department of Energy (DOE), U.S. Environmental Protection Agency, and U.S. Nuclear Regulatory Commission (NRC). He is also involved in work related to determinations of chemical fate and transport in the environment. His expert areas include radiological transportation risk and analysis of potential radiological material releases during normal operations, accidents, and terrorist events.

As an environmental systems engineer in Argonne National Laboratory's (Argonne's) Environmental Science Division, he is responsible for project management, technical analyses, and development of computer models for radiological risk assessment. For current NRC projects, Dr. Biber is responsible for the transportation and waste management sections in the Environmental Impact Statement (EIS) for the proposed Global Laser Enrichment (GLE) facility in North Carolina, the transportation sections in EISs for the Fermi 3 new reactor and the Victoria County Station early site permit, and the accident analysis section in the EIS for the Nine Mile Point 3 new reactor. He also served as project manager for the NRC's EIS for the Eagle Rock uranium enrichment facility in Idaho, and authored the terrorism section. For current DOE work, he is responsible for the transportation and facility accident sections in a programmatic EIS on the disposal of Greater-Than-Class C (GTCC) Low-Level Radioactive Waste and shares responsibility for disposal facility design, the waste inventory database, and the terrorism analysis (analysis of intentional destructive acts).

Dr. Biber has a strong background in risk assessment codes/models and in data analysis with custom and commercial software. He has extensive experience in computer program conception and development and is a member of the RESRAD-OFFSITE development team. RESRAD-OFFSITE is sponsored by the DOE and NRC and is used primarily to assess human

health impacts from exposure to areas with low levels of radioactive contamination (e.g., during site cleanup or decommissioning activities).

Prior to his current position, Dr. Biber worked in Argonne's Chemical Technology Division (1987-1992) as an Assistant Chemist, where he investigated the leaching mechanism of radionuclides immobilized in glass for storage in a high level waste repository. He utilized a multidisciplinary approach with optical microscopy, Raman spectroscopy, SIMS, SEM, and EXAFS to study radionuclide speciation within unreacted and leached nuclear waste glasses.

Following graduate studies, Dr. Biber was a Postdoctoral Appointee in Argonne's Chemistry Division (1985-1987) where he investigated interfacial phenomena related to corrosion. He developed second harmonic generation as a new general purpose laser-based in-situ technique, in conjunction with voltammetry, to study metal corrosion that could occur in nuclear reactor cooling systems. He was also involved with other surface analysis projects using AES, SIMS, ELS, and PES techniques.

In graduate school (1980-1985), he studied the effect of catalyst support on catalyst performance from the perspective of electronic and structural modifications. He designed and constructed a surface analysis system incorporating AES, ELS, PES, and TDS analytical techniques to provide complementary methods for a comprehensive investigation of material interfaces.

Dr. Biber is the author or co-author of over 90 journal, book, report, and conference publications.