

Prosanta Chowdhury
Statement of Professional Qualifications

CURRENT POSITION

Project Manager
Licensing Branch 1
Division of New Reactor Licensing
Office of New Reactors
Nuclear Regulatory Commission

EDUCATION

M.S., Nuclear Engineering, Louisiana State University, Baton Rouge, Louisiana
M.S., Electrical Engineering, Moscow Power Engineering Institute, Moscow, Russia

PROFESSIONAL

U.S. Nuclear Regulatory Commission (NRC) Qualified Project Manager
Secretary, National Radiological Emergency Preparedness Conference, Inc. (USA)

QUALIFICATIONS

Mr. Chowdhury is the U.S. Nuclear Regulatory Commission (NRC) lead Project Manager (PM) for review of the PSEG Site Early Site Permit (ESP) application, and has about 8 years of experience as a project manager within the NRC Office of New Reactors (NRO). Since the docketing of the PSEG Site ESP application, Mr. Chowdhury coordinated all aspects of the NRC staff's review of the application that included such disciplines as Site Hazards, Meteorology, Hydrology, Geology-Seismology-Geotechnical Engineering, Aircraft Hazards, Radiological Effluent Release Dose Consequences, Emergency Planning, Physical Security, Radiological Consequences of Design Basis Accidents, Quality Assurance Program, and Fukushima Near-Term Task Force (NTTF) Recommendations. Mr. Chowdhury also coordinated staff's presentation of safety evaluations to the Advisory Committee on Reactor Safeguards (ACRS), and publication of the Final Safety Evaluation Report (FSER). In this regard, Mr. Chowdhury's experience includes timely and effective communication of issues with the applicant and coordinating the staff efforts for resolution of the issues within established schedules. As part of his responsibilities, Mr. Chowdhury coordinated and actively participated in a number of regulatory audits and site visits. Mr. Chowdhury also participated in several public outreach meetings as well as government-to-government meetings.

In the capacity of project management, Mr. Chowdhury also coordinated the review of Chapter 19 in conjunction with the U.S. EPR design certification application and the Calvert Cliffs Unit 3 combined license application (COLA). Mr. Chowdhury was also the lead PM for the Nine Mile Point Unit 3 COLA (now withdrawn), and was assigned lead PM responsibilities of the-then suspended Callaway Unit 2 COLA (now withdrawn). Prior to joining NRO, Mr. Chowdhury served from 2005 until 2008, as an emergency preparedness specialist within the Office of Nuclear Security and Incident Response (NSIR), where he drafted the safety evaluation on emergency planning associated with the South Texas Project Units 3 & 4 COLA.

Prior to joining the NRC, Mr. Chowdhury served for 18 years as a Radiation Protection Specialist and Environmental Scientist in the State of Louisiana Department of Environmental Quality. In this capacity, Mr. Chowdhury oversaw the day-to-day function of the State's emergency preparedness program involving nuclear power plants affecting the State, and also of the State's radioactive materials transportation emergency response program. Mr. Chowdhury conducted radiation protection training for State and local responders.

From 1996 until 2004, Mr. Chowdhury was periodically recruited as an emergency planning, preparedness, and response expert of the International Atomic Energy Agency (IAEA) to instruct students from various member states, and also as a technical expert to review several IAEA draft technical documents.

As his M.S. research at LSU, Mr. Chowdhury developed and validated a three-dimensional neutron flux synthesis methodology and computer code, which became his thesis and was published as NUREG/CR-4984, ORNL/TM-10503. Mr. Chowdhury also co-authored technical papers involving neutron cross-sections and nuclear reactor pressure vessel embrittlement studies.

Allen H. Fetter, Ph.D.
Statement of Professional Qualifications

Current Position

Senior Project Manager
Environmental Projects Branch
Division of New Reactor Licensing
Office of New Reactors
U.S. Nuclear Regulatory Commission

Education

Ph.D., Geology, University of Kansas, Lawrence, Kansas
M.S., Geology, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina
B.A, Geology, Guilford College, Greensboro, North Carolina

Professional

U.S. Nuclear Regulatory Commission Senior Project Manager
Geological Society of America, Member

Qualifications

Dr. Fetter is the U.S. Nuclear Regulatory Commission (NRC) environmental Project Manager (PM) for review of the PSEG Site Early Site Permit (ESP) application, and has about 7 years of experience as a project manager within the NRC Office of New Reactors (NRO). Since the docketing of the PSEG Site ESP application, he has planned and coordinated most aspects of the NRC staff's environmental review of the application, including the acceptance review and docketing, scoping and information gathering, site audits, and preparation of the draft and final environmental impact statements (EISs). Dr. Fetter also planned and executed public meetings for comment on the draft EIS, and interfaced effectively with other government entities and stakeholders throughout the environmental review process. In addition to the PSEG ESP application review, he has worked at NRC a total of over 11 years as a qualified technical reviewer and project manager on a variety of pre-application activities and licensing reviews pertaining to high-level waste storage and disposal, in-situ uranium recovery, complex materials sites, and other new reactor siting applications. Most of Dr. Fetter's work as a project manager at the NRC has involved coordinating and managing a number of environmental reviews, and the associated preparation of environmental assessments and environmental impact statements as part of the NRC licensing process and the agency's implementation of NEPA.

Prior to coming to NRC, Dr. Fetter spent several years in the private sector where he worked as a hydrogeologist and project manager on numerous geotechnical, geophysical and hydrological site characterizations to determine the suitability of sites for waste disposal and to assist in the development of remediation plans for contaminated industrial sites. He also spent time in academia where he utilized heavy and rare-earth isotopes to delineate the crustal framework and reconstruct the tectonic evolution of complex metamorphic Precambrian geologic domains in North and South America, Africa and Antarctica. He was invited to Universidade Estadual Paulista in São Paulo, Brazil and spent 5 years helping to design, equip and manage two state-of-the-art isotope geochemistry labs for preparation of geologic and environmental samples for analysis by mass spectroscopy, and to expand and continue his research in South America. He obtained external funding for field research and laboratory equipment, and established a revenue source through the analytical work performed in the laboratory. He taught short courses on isotope chemistry and laboratory techniques, and their application to studies of environmental monitoring, and geologic and

tectonic evolution. Dr. Fetter also advised undergraduates and graduate students with their research projects and served as a committee member for seven graduate student oral examinations and final defense examinations. He refereed journal articles for the *Journal of South American Earth Sciences* and *Gondwana Research* and evaluated the merits of research proposals for CNPq (Brazilian equivalent to NSF). While in Brazil, he developed collaborative research projects with fellow scientists in Brazil (USP –São Paulo, UNICAMP, UFC, UF-Brasília), and in the United States (UNC – Chapel Hill, University of Kansas), publishing the results in peer-reviewed journals. Dr. Fetter is the author and coauthor on 22 publications related to geology.

Bruce J. Musico
Statement of Professional Qualifications

Current Position

Sr. Emergency Preparedness Specialist
Division of Preparedness and Response
Office of Nuclear Security and Incident Response
U.S. Nuclear Regulatory Commission

Education

J.D., Franklin Pierce Law Center, Concord, NH 1992
B.S., Nuclear Engineering, University of Michigan, Ann Arbor, MI 1976

Professional Affiliations

Bar Admission – Pennsylvania & Washington, D.C.

Qualifications

Mr. Musico is a nuclear engineer with over 30 years experience in the commercial nuclear power and related industries, including approximately 25 years relating to nuclear reactor emergency planning (EP). This EP experience included work in virtually all facets of reactor emergency preparedness and response, including substantial experience performing a variety of EP work for nuclear utilities, local, State and Federal governments, and Canadian & U.S. nuclear licensing work. Prior to joining the NRC in 2002, Mr. Musico had a private consulting and law practice providing counsel to governmental agencies and legislators in the area of nuclear power operation, regulation, and decommissioning.

NRC Experience

Combined Licenses (COLs) – Staff technical reviewer for the emergency planning information submitted in the Vogtle, North Anna, and Turkey Point COL applications; including testifying as an expert witness before the NRC Commission during the Vogtle COL hearings.

Early Site Permits (ESPs) – Staff technical reviewer for the emergency planning information submitted in the Vogtle, North Anna, and PSEG Site ESP applications; including testifying as an expert witness during the Vogtle NRC Atomic Safety and Licensing Board (ASLB) hearings.

Standard Review Plan (SRP) – Author of Section 13.3, “Emergency Planning,” of the March 2007 update to the Standard Review Plan (NUREG-0800). Creator of the emergency planning Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) contained in SRP Section 14.3.10, “Emergency Planning – Inspections, Tests, Analyses, and Acceptance Criteria.”

Regulatory Guide (RG) 1.206 – Author of Section 13.3, “Emergency Planning,” and related guidance in RG 1.206, “Combined License Applications for Nuclear Power Plants (LWR Edition).”

ESP Review Standard (RS)-002 – Author of Section 13.3, “Emergency Planning,” of NRC RS-002, “Processing Applications for Early Site Permits.”

New Reactor Licensing Final Rule (10 CFR Part 52) – Principal author of various revisions to emergency planning regulations associated with new reactor licensing under 10 CFR Part 52, “Licenses, Certifications, and Approvals for Nuclear Power Plants.”

NRC Incident Response Organization – Member of the NRC Headquarters Protective Measures Team, associated with NRC response in support of nuclear reactor emergencies. Participated in the NRC’s 24-hour emergency response to the Fukushima Daiichi nuclear incident.

Non-NRC Experience

Counsel – New Hampshire Nuclear Decommissioning Financing Committee

Reactor Licensing Engineer – Ontario Power Generation, Toronto & Pickering Nuclear Station

Reactor Licensing Engineer – Commonwealth Edison Co., Zion Nuclear Station

Counsel – Maryland NRC Agreement State Nuclear Materials Licensee

Emergency Planning Consultant – Impell Corporation

Emergency Planning Manager – Illinois Department of Nuclear Safety

Radwaste System Designer – Sargent & Lundy Engineers

Reactor Startup and Operations Engineer – VEPCO, North Anna Unit 1

Publications

“Getting It Right—New Hampshire’s State-of-the-Art Nuclear Decommissioning Law,” *Radwaste Solutions*, Nov/Dec 2001 (<http://www.ans.org/pubs/magazines/rs/docs/2001-11-12-5.pdf>)

Seshagiri "Rao" Tammara
Statement of Professional Qualifications

CURRENT POSITION

Physical Scientist
Radiation Protection and Accident Consequences Branch
Division of Site Safety and Environmental Analysis
Office of New Reactors
U.S. Nuclear Regulatory Commission

EDUCATION

M.S. Environmental engineering, University Maryland, 1974
M.S. Chemical Eng., and Nuclear Eng., University of Maryland, 1970
M.S. Chemical Eng., Osmania University, India, 1968

PROFESSIONAL

Technical Reviewer Qualification, NRC, 2008

QUALIFICATIONS

Mr. Tammara is a physical scientist with over 40 years of experience as a technical analyst and physical scientist. Mr. Tammara has 10 years of experience at the NRC performing reviews for new reactors and operating reactors. Mr. Tammara's reviews have been in the areas of population distributions, site characteristics/site suitability, external hazards, aircraft crash evaluations, control room habitability, design basis accident evaluations, and the environmental impact evaluations for the EIS.

Mr. Tammara has 20 years of experience performing accident assessments using the ALOHA code with the DOE and the NRC. ALOHA calculates the plume concentrations and the vapor cloud explosions for the review of external hazards and control room habitability chemical concentrations.

As a qualified technical reviewer in NRO Mr. Tammara has performed the COL reviews for 12 COL applications and has performed the ESP reviews for three ESPs. Mr. Tammara has also performed reviews for the reactor license renewal applications for current operating reactors.

Gerry L. Stirewalt, Ph.D., P.G., C.E.G.
Statement of Professional Qualifications

CURRENT POSITION

Senior Geologist
Geoscience and Geotechnical Engineering Branch 2 (RGS2)
Division of Site Safety and Environmental Analysis (DSEA)
Office of New Reactors (NRO)
U.S. Nuclear Regulatory Commission (NRC)
Rockville, MD

EDUCATION

Postdoctoral Research Studies
 Structural Geology and High-Temperature Experimental Deformation, University of British Columbia, Vancouver, British Columbia, Canada, 1971-1973
 Structural Geology and Petrofabrics, Lemont-Doherty Geological Observatory of Columbia University, Palisades, NY, 1969-1971
Ph.D. in Structural Geology from the University of North Carolina at Chapel Hill, Chapel Hill, NC, 1970
B.A. in Geology and Mathematics from Catawba College, Salisbury, NC, 1964

PROFESSIONAL

U.S. NRC Qualified Technical Reviewer for New Reactor Applications
Professional Organization Memberships
 Geological Society of America (GSA) and the following Divisions of GSA:
 Structural Geology and Tectonics
 Environmental and Engineering Geology
 Geology and Society
 History and Philosophy of Geology
 American Geophysical Union
 Association of Engineering and Environmental Geologists
Professional Registrations
 Registered Professional Geologist and Certified Engineering Geologist (Number 229 and E229) in Oregon
 Registered Professional Geologist (Number 896) in North Carolina

EXPERIENCE

Dr. Stirewalt is a structural geologist with more than 43 years of national and international experience in geoscience, including university teaching, independent consulting, and working as a contractor on site characterization of nuclear and other critical power facilities. His experience as a contractor encompassed work with an architectural engineering firm on projects in Southeast Asia and the U.S; with the Department of Energy in the high level radioactive waste (HLW) disposal program (including interface with the Canadian and Swedish site characterization programs, overview of the characterization of all potential sites for the first HLW repository, and development of the second repository program in crystalline rock locations east of the Mississippi River); with the NRC for 3D geospatial modeling of Yucca Mountain and other

non-HLW facilities; and with the NRC on Yucca Mountain at the Center for Nuclear Waste Regulatory Analyses. His primary technical specialty lies in field geologic site characterization for critical facilities. His particular interests include investigation of tectonic deformation features (faults, shear zones, and fractures) and paleoseismic features in relation to potential for surface deformation and geologic and seismic hazard, and assessment of geologic data for seismic source characterization.

Dr. Stirewalt's 43 years of experience include working as a geologist at the NRC for the past 10 years, initially with the HLW program in NMSS but also in NRO preparing Safety Evaluation Reports for COL and ESP applications (e.g., Vogtle, Summer, Levy, Lee, PSEG); participating in mandatory licensing hearings for Vogtle and Summer and a contested hearing for Levy under 10 CFR Part 52; reviewing application materials in ESP or COL applications for Calvert Cliffs, Comanche Peak, and Harris as the primary technical reviewer of Sections 2.5.1 and 2.5.3; acting as a member of the Technical Integration Team for characterization of seismic sources in the central and eastern U.S. as presented in NUREG-2115; re-assessing seismic hazard at operating nuclear power plants as required by the 50.54(f) letters that were issued following the NTTF Fukushima recommendations; interfacing with external stakeholders, including applicants and licensees, in various public and non-public meetings; and mentoring junior staff.

Dr. Stirewalt is the author or co-author of more than 56 technical publications related to the field of geoscience.

Frankie G. Vega
Statement of Professional Qualifications

CURRENT POSITION

Project Manager
Hazard Management Branch
Japan Lessons Learned Division (JLD)
Office of Nuclear Reactor Regulation (NRR)
Nuclear Regulatory Commission (NRC)

EDUCATION

M.E., Civil Engineering, University of Maryland, College Park
B.S., Civil Engineering, University of Puerto Rico, Mayaguez

PROFESSIONAL

Professional Engineer (PE) – Puerto Rico 09/2012, #23820

QUALIFICATIONS

Mr. Vega has 9 years of experience as an engineer and project manager participating in major, multidisciplinary safety projects for U.S. Nuclear Regulatory Commission (NRC) within the Offices of New Reactors (NRO) and the Nuclear Reactor Regulation (NRR). This experience includes the technical review of multiple combined license applications (COLAs) and Early Site Permits (ESPs) in the area of geotechnical engineering. Mr. Vega currently serves as a project manager in the Japan Lessons Learned Division (JLD) managing projects related to Near Term Task Force (NTTF) Recommendations 2.1 and 2.3 “Seismic”.

As a qualified technical reviewer in NRO, Mr. Vega has planned, lead, and coordinated activities in the Division of Site and Environmental Analysis (DSEA) related to the technical review of COL and ESP applications for licensing new nuclear power plants under NRC regulations in Title 10 of the *U.S. Code of Federal Regulations* (10 CFR) Parts 50, 52, and 100. Specifically, Mr. Vega has reviewed Sections 2.5.4, “Stability of Subsurface Materials and Foundations” and Section 2.5.5, “Stability of Slopes” of the South Texas Project, Turkey Point, Comanche Peak COL applications and the PSEG ESP application. In these technical review activities, Mr. Vega applied his engineering knowledge to perform confirmatory analysis of the licensee’s soil stability analyses, engaged in technical discussions with licensees, developed requests for Additional Information (RAIs), participated in safety audits and provided key technical input into Safety Evaluation Reports (SERs).

As a project manager in JLD, Mr. Vega is involved in projects related to site specific seismic hazard evaluations and seismic walkdowns performed as part of NTTF Rec. 2.1 and 2.3. Mr. Vega has coordinated, assisted, planned and provided technical oversight/support related activities involving these recommendations. Mr. Vega has provided key support in the issuance of Staff Assessments (SAs) related to the seismic hazard evaluation for over 30 operating nuclear power plants in the US, has developed key pieces of communication, and participated in public meetings to better inform licensees and other stakeholders of NRC positions and review statuses.

Joseph F. Giacinto
Statement of Professional Qualifications

CURRENT POSITION

Hydrologist
Hydrology Branch
Division of Safety and Environmental Analysis
Office of Nuclear Reactor Regulation (NRR)
Nuclear Regulatory Commission (NRC)

EDUCATION

M.S., Hydrology, University of Arizona
B.S., Geology (Geophysics), San Diego State University

PROFESSIONAL

Certified Professional Geologist, Virginia License 001350, Wyoming License 2788.

QUALIFICATIONS

Mr. Giacinto has 8 years of experience as a U.S. Nuclear Regulatory Commission hydrologist participating in major, multidisciplinary safety projects for NRC within the Offices of New Reactors and the Nuclear Reactor Regulation. His experience includes the technical review of multiple combined license (COL) and early site permit (ESP) applications in the areas of hydrology and geology. Mr. Giacinto currently serves as a technical lead in the Division of Site and Environmental Analysis (DSEA) developing projects related to reviews of new reactors and combined license and early site permit applications.

As a qualified technical reviewer, Mr. Giacinto has planned, led, and coordinated activities within DSEA related to the technical review of COL and ESP applications for licensing new nuclear power plants under NRC regulations in Title 10 of the *U.S. Code of Federal Regulations* (10 CFR) Parts 50, 52, and 100. Specifically, Mr. Giacinto has reviewed Safety Analysis Reports and associated information for Section 2.4, "Hydrologic Engineering" for the Bell Bend Nuclear Power Plant, Fermi Unit 3, North Anna Power Station (Unit 3), Turkey Point Units 6&7 and William States Lee III COL applications and, North Anna Unit 3, Victoria County Station and PSEG ESP applications. In these technical review activities, Mr. Giacinto applied his hydrogeologic expertise to evaluate and perform independent and confirmatory analysis of applicant's conclusions, analyses, and results. Mr. Giacinto has engaged in technical discussions with licensees, developed requests for additional information, participated in pre-audits and safety audits, and provided key technical input for Safety Evaluation Reports.

As a DSEA hydrologist, Mr. Giacinto routinely reviews site specific hydrologic evaluations as part of new reactor applications, and assists, plans, and provides technical oversight/support involving staff reviews and recommendations. Mr. Giacinto has also provided key support in the issuance of Staff Assessments (SAs) related to the flood hazard evaluation for over 30 operating nuclear power plants in the U.S. Mr. Giacinto regularly participates in public and non-public meetings to better inform licensees and other stakeholders regarding NRC positions and review statuses.

Henry Jones, Ph.D.
Statement of Professional Qualifications

CURRENT POSITION

Hydrologist
Meteorology and Oceanography Team (RMOT)
Hydrology and Meteorology Branch (RHMB)
Division of Site Safety and Environmental Analysis (DSEA)
Office of New Reactors (NRO)
Nuclear Regulatory Commission (NRC)

EDUCATION

Ph.D., Physical Oceanography, Naval Postgraduate School
M.S., Meteorology and Physical Oceanography, Naval Postgraduate School
M.S., Systems Management (Information Systems), University of Southern California
M.A., International Relations, Salve Regina University
B.S., Oceanography, United States Naval Academy
Diploma, Strategic Studies, Naval War College

PROFESSIONAL

Tropical Cyclone Forecaster – United States Navy
Co-Chair, International Atomic Energy Agency (IAEA) Working Group on Tsunami Hazards

QUALIFICATIONS

Dr. Jones joined the U.S. Nuclear Regulatory Commission (NRC) in 2007. He is currently a hydrologist and technical reviewer in the Office of New Reactors (NRO). He continues to lead several of NRC's high priority reviews in the new and operating reactor business lines in the area of oceanography. Dr. Jones is the lead for several of the licensees' 50.54(f) responses to Recommendation 2.1, flooding hazard reevaluation including Point Beach, St. Lucie, and Salem / Hope Creek. Dr. Jones is assigned as the surge, seiche and tsunami hazard technical reviewer for all new reactor COL or ESP applications. He is also the lead or supporting reviewer for multiple COL or ESP reviews including PSEG, Turkey Point, Calvert Cliffs, STP, Fermi, and Levy County.

Following commissioning in 1979, Dr. Jones was assigned as a division officer aboard the USS BRADLEY (FF-1041). After completing his Surface Warfare Officer qualification, he transferred to the Meteorology and Oceanography (METOC) community in 1981.

Initial assignments ashore included Typhoon Duty Officer, Naval Oceanography Command Center, Guam (1982-1984) and Officer-in-Charge, Naval Oceanography Command Detachment, Kadana, Japan (1986-1989). Dr. Jones subsequently served as Ship's Oceanographer, USS MISSOURI (BB-63) during DESERT SHIELD/DESERT STORM (1989-1991). Following this tour, he served as Assistant Program Manager for the Airborne Laser Theater Missile Defense Program (ABL) in the Ballistic Missile Defense Organization (BMDO) and Naval Research Laboratory (1992-1994). From 1994-1996 Dr. Jones served as Program Manager, Navy Satellite Remote Sensing in the Office of the Oceanography of the Navy (N096).

From 1996-2000, he provided graduate instruction as an Oceanography Lecturer at the Naval Postgraduate School in Monterey, CA. Dr. Jones was selected as a Permanent Military Professor (PMP) in 1999 and returned to the U.S. Naval Academy in 2000 where he served as an Assistant Professor in the Oceanography Department until his retirement from the United States Navy in 2007.

Kevin Quinlan
Statement of Professional Qualifications

CURRENT POSITION

Physical Scientist (Meteorologist)
Division of Site Safety & Environmental Analysis (DSEA)
Nuclear Regulatory Commission

EDUCATION

M.S. Atmospheric Science, University of Alabama in Huntsville (2008)
B.S. Meteorology, Millersville University of Pennsylvania (2006)

QUALIFICATIONS

Mr. Quinlan has been working in the Office of New Reactors at the U.S. Nuclear Regulatory Commission (NRC) since July 2008. He is, or has been, the lead NRC meteorological reviewer on eight combined license applications, two early site permit applications, and one design certification currently undergoing review by the NRC Staff. Mr. Quinlan has successfully testified in front of the Advisory Committee on Reactor Safeguards nine times and once before the Commission in a combined license mandatory hearing.

His work primarily includes the analysis of regional and local climatology to determine the most severe weather that may impact a potential reactor site or design. As part of his reviews, he inspects the meteorological instrument tower at each site to ensure that it provides accurate data for use in determining the correct atmospheric dispersion properties of the site. Since March 2013 he has been a lead reviewer on the NRC's near-term task force recommendation 2.1 reviews of Flood Hazard Reevaluation Reports.

Dogan Seber, Ph.D.
Statement of Professional Qualifications

CURRENT POSITION

Senior Geophysicist
Geosciences and Geotechnical Engineering Branch 1
Division of Site Safety & Environmental Analysis
Office of New Reactors
U.S. Nuclear Regulatory Commission
Washington, D.C.

EDUCATION

Ph.D. Cornell University, Seismology
M.Sc. St. Louis University - Geophysics
B.S. Istanbul Technical University – Geophysical Engineering

PROFESSIONAL

U.S. Nuclear Regulatory Commission (NRC) Qualified Reactor Technical Reviewer
American Geophysical Union, Member
Seismological Society of America, Member

QUALIFICATIONS

Dr. Seber has 30 years of professional work experience in geophysics. This experience has evolved around academia and the NRC. At the NRC, as a senior geophysicist in NRO, he has been working on a variety of science and policy issues related to nuclear regulation. He has worked on issues related to licensing new reactors under 10 CFR Part 52, re-assessment of seismic hazards of the operating nuclear power plants as required by 50.54(f) letters issued following the NTF Fukushima recommendations, interfaced with external stakeholders through various public and non-public meetings, conducted seismic software audits, and collaborated with external experts to develop documents, participated in revisions of existing regulatory documents, and mentored junior staff. In addition, he was the NRC representative for the IAEA's seismic hazard guidance documentation development activities, provided advice and guidance to the IAEA's extra budgetary program, and worked extensively with Japanese and European counterparts to develop international nuclear safety reports and documents.

Prior to working for the NRC, in academia, he developed independent earth science research programs, obtained external funding from government organizations, initiated national-scale grass-roots efforts, developed educational programs, served as a senior advisor to many national earth science programs, and supervised work activities of undergraduate students. Dr. Seber worked as the Director of the Geoinformatics Lab and Scientist at the University of California, San Diego conducting original research in broad earth science fields and application of information technology into the geosciences. Overall responsibilities consisted of establishing externally funded research programs, supervising technical and scientific personnel, and budget preparation and administration. Specific research activities involved development of state-of-the-art information technology resources to aid geoscience research primarily in the areas of seismology, geophysics, geology, seismotectonics, and lithospheric deformation. He led the

development of a state-of-the-art, high-performance computing based, full 3-dimensional seismic wave propagation calculation environment to study the effects of seismic sources, crustal structure, and attenuation models. He also published a series of papers about the uses of advance information technology tools in geophysical and geological studies. As an education and outreach expert, he created online earth science educational materials and promoted the uses of web-based learning in high school and middle school classroom environments. He organized a variety of workshops and trained earth science researchers and students in uses of information technology resources.

Dr. Seber also worked as a Senior Research Associate at Cornell University. He conducted original geophysics and seismology research activities, developed externally funded research programs, advised Master's and PhD. students. He also led and managed the activities of the Geographic Information Systems (GIS) lab within the Institute for the Study of the Continents at Cornell University. He served as a Co-Investigator in a series of research projects that conducted research activities in the areas of geophysics, seismology and tectonics. Dr. Seber organized and participated in seismological field studies, installed broadband seismic stations, collected and interpreted data to understand seismicity, crustal structure and seismic hazard conditions in continental collision zones. He also participated as a co-investigator in a series of research activities funded by Department of Energy and Department of Defense aimed at better monitoring the Comprehensive Nuclear Test Ban Treaty using seismic networks, geophysical methods, and data and knowledge management systems.

Dr. Seber is the author and co-author on more than 100 scientific articles and reports related to geophysics and earth sciences.

Stephanie Devlin-Gill
Statement of Professional Qualifications

CURRENT POSITION

Project Scientist
Division of Site Safety & Environmental Analysis
Office of New Reactors
U.S. Nuclear Regulatory Commission
Washington, D.C.

EDUCATION

Ph.D. Cornell University, Geophysics
B.A. Rutgers, The State University of New Jersey, Physics, Computer Science minor

PROFESSIONAL

U.S. Nuclear Regulatory Commission (NRC) Qualified Reactor Technical Reviewer
Federal Acquisition Institute Qualified Contracting Officer's Representative
NRC Qualified Emergency Response Official
Geological Society of Washington, Member, Former Meeting Secretary, Former Councilor
Seismological Society of America, Member

QUALIFICATIONS

Dr. Devlin-Gill is a geophysicist with seven years of experience at the NRC with the five most recent years as a Qualified Reactor Technical Reviewer. Devlin-Gill's areas of expertise include probabilistic seismic hazard analysis, earthquake seismology, and siting of critical facilities. Devlin-Gill has reviewed numerous combined and operating license (COL), early site permit (ESP), and design certification (DC) applications, which are the Levy and William States Lee COL applications, the Advanced Power Reactor 1400 (APR1400) DC application, and now the PSEG ESP application. Additionally, Devlin-Gill has reviewed numerous existing reactor site seismic hazard reevaluations associated with the Near-Term Task Force (NTTF) seismic Recommendation 2.1 (R2.1). Further, Devlin-Gill gained experience with two roles during the NTTF R2.1 Expedited Approach review project, as both a Technical Reviewer and as Technical Coordinator for the Senior Review Board, a board that advised the review staff for the purpose of consistency across the review project. Devlin-Gill was the lead geophysicist on the 2014 update of the Standard Review Plans (SRP) 2.5.2 "Vibratory Ground Motion" and 3.7.4 "Seismic Instrumentation."

Prior to working for the NRC, Devlin-Gill was a teaching and research assistant in graduate school at Cornell University where Devlin-Gill received numerous honors and awards – the National Science Foundation Graduate Research Fellowship (2004 – 2007), the IRIS Workshop Graduate Student Fellowship Recipient (June 2005 and June 2006), and the Cornell University McMullen Fellowship (August 2002 – May 2003).

Prior to graduate school, Devlin-Gill worked as a Laboratory Technician at Princeton University's Geosciences Department. Devlin-Gill worked on studies of subsurface

geomicrobiology and bacterial transport and conducted laboratory experiments and field research in the gold mines of South Africa and at the Oyster, Virginia field site.

Devlin-Gill is the author and co-author on two peer-reviewed journal publications and was author or coauthor on nine conference publications.

Donald Palmrose, Ph.D
Statement of Professional Qualifications

CURRENT POSITION

Senior Reactor Engineer
Radiation Protection and Accident Consequences Branch
Division of Site Safety and Environmental Analysis
Office of New Reactors
U.S. Nuclear Regulatory Commission
Washington, D.C.

EDUCATION

B.S., Nuclear Engineering, Oregon State University
M.S. Nuclear Engineering, Texas A&M University
Ph.D., Nuclear Engineering, Texas A&M University

PROFESSIONAL

Duke University, Nicholas School of the Environment, National Environmental Policy Act Certification Program

QUALIFICATIONS

Dr. Donald Palmrose is a Senior Reactor Engineer at the U.S. Nuclear Regulatory Commission (NRC) with responsibility for technical reviews and technical oversight of contractors for new reactor NEPA assessments. He has over 30 years of experience in the nuclear engineering profession. His expertise includes project management, operations, research, and technical review expertise in new reactor licensing reviews, National Environmental Policy Act (NEPA) assessments and documentation, regulatory analysis, risk assessments, nuclear safety analysis, radiation protection, U.S. Department of Energy nuclear safety management under 10 Code of Federal Regulation (CFR) Part 830, and five years of managerial and operational experience with the U.S. Navy surface nuclear propulsion program. Of particular note, Dr. Palmrose was an expert witness as a contractor to the NRC for a prior Atomic Safety Licensing Board hearing involving the NRC's National Enrichment Facility environmental impact statement.

As a Senior Reactor Engineer for the NRC, Dr. Palmrose serves as senior reviewer for new reactor 10 CFR Part 52 applications in the areas of environmental radiological dose analyses, nuclear power plant severe accident risks, and the evaluations of the transportation of radioactive materials. This includes information regarding nuclear power plant technology such as reactor systems, reactor core design, and evaluations of expected operating performance. Dr. Palmrose performs and coordinates the environmental reviews and evaluations of power reactor standard design certification, combined license and early site permit applications with the appropriate portions of the companion safety review to assure public health and safety and protection of the environment. He has also supported the review of operating reactors' license amendment requests involving reactor systems safety analyses. Additionally, Dr. Palmrose has also served as project leader and coordinator of other reviewers for the resolution of complex technical and licensing issues and provided expert technical assistance and advice relating to the safety aspects of the analysis of accident source terms and the environmental impact of severe accidents.

Stephen E. Williams
Statement of Professional Qualifications

CURRENT POSITION

Health Physicist
Radiation Protection and Accident Consequence (RPAC)
Division of Site and Environmental Analysis (DSEA)
Office of Nuclear Reactors (NRO)
Nuclear Regulatory Commission (NRC)

EDUCATION

M.S., Environmental Pollution Control, Penn State University, State College, Pennsylvania
B.S., Radiological Health, Duquesne University, Pittsburgh, Pennsylvania

PROFESSIONAL

Health Physics Society (HPS) – United States
Technical Reviewer Qualification, NRC, 2009

QUALIFICATIONS

Mr. Williams has 40 years of experience in various disciplines in Health Physics. Current experience as a Health Physicist for 8 years, participating in major, multidisciplinary radiological safety projects for U.S. Nuclear Regulatory Commission (NRC) within the Office of New Reactors (NRO). This experience includes the technical review of multiple (3) combined license applications (COLAs), (4) Design Certification Documents (DCD), and (3) Early Site Permits (ESPs) in the area of Radiological Environmental Technical Specifications and Radiological Protection. Mr. Williams currently serves as a project manager in Health Physics/Environmental Review for the Small Modular Reactor (SMR) Design submittal and developing the Design-Specific Review Standards (DSRS) procedures for SMR applications.

As a qualified technical reviewer in NRO, Mr. Williams has planned, lead, and coordinated activities, such as audits, in the Division of Site and Environmental Analysis (DSEA) related to the technical review of COLAs and ESP applications for licensing new nuclear power plants under NRC regulations in Title 10 of the *U.S. Code of Federal Regulations* (10 CFR) Parts 50, 52, and 100. Specifically, Mr. Williams has reviewed Sections 2.4.13, 11 and 12, “Radioactive Waste Systems” and developed Requests for Additional Information (RAIs), participated in safety audits and produced and many Safety Evaluation Reports (SERs) in support of applicant submitted projects.

As a Program Manager for the Bureau of Radiation Protection at the Pennsylvania Department of Environmental Protection (DEP) for 8 years Mr. Williams managed the X-Ray and Accelerator inspection, registration and licensing program for the State. Prior to working at DEP Mr. Williams managed the Radiological Effluent Program at Three Mile Island for 16 years without an NRC finding. For 6 years as an Industrial Radiographer, Mr. Williams inspected pipelines, station piping, and building structure. Mr. Williams also performed University/Hospital Health Physics functions for 2 years, as well as managing the radwaste and dosimetry programs at Wayne State University.

Michael H. Willingham
Statement of Professional Qualifications

Current Position

Project Manager
Hydrology and Meteorology Branch 2
Division of Site Safety and Environmental Analysis
Office of New Reactors
U.S. Nuclear Regulatory Commission (NRC), Washington, D.C.

Education

M.S. Environmental Engineering and Science, Johns Hopkins University, Baltimore, Maryland
B.S. Environmental Science, Texas A&M University Corpus Christi, Corpus Christi, Texas

Professional

Duke University Environmental Leadership Courses: Implementation of the National Environmental Policy Act (NEPA); Accounting for Cumulative Effects under NEPA; Considering Greenhouse Gas Emissions and Climate Change under NEPA; Preparing and Documenting Environmental Impact Analyses; Socioeconomic Impact Analysis under Implementation of NEPA; and Scoping, Public Involvement, and Environmental Justice.

Aquaveo: Hydrologic and Hydraulic Modeling with WMS

Project Manager Qualification, NRC

Sigma Xi, The Scientific Research Society, Associate Member

Qualifications

Mr. Willingham is a Project Manager with over nine years of experience managing and participating in multidisciplinary environmental and safety related projects for the NRC. His experience includes NEPA reviews, preparation of environmental impact statements (EISs), and pre-application activities associated with environmental reviews of new reactors. Additionally, he supported safety assessments related to Near-Term Task Force Recommendation 2.1 and 2.3 flood hazard reviews.

As a Project Manager in the hydrology and meteorology branch 2 (RHMB2) at the NRC, Mr. Willingham is responsible for planning, coordinating, and developing staff assessments related to NTF Recommendation 2.3 and 2.1 flood hazard reviews under Title 10 of the *U.S. Code of Federal Regulations* (10 CFR) Part 50.54(f). He continues to serve as a technical manager and hydrology reviewer in support of the Japan Lessons-Learned Division for numerous operating reactors staff assessments. Mr. Willingham provides technical support and completes staff assessments of Flooding Walkdown Report Supporting Implementation of Near-Term Task Force Recommendation 2.3 and Recommendation 2.1.

Prior to joining RHMB2, Mr. Willingham served both as an environmental project manager and technical reviewer for the Environmental Technical Support Branch (RENV) and the Environmental Projects Branch 1 (RAP1). He planned, coordinated, and developed environmental impact statements for: Vogtle Electric Generating Station, Units 3 and 4 combined license (COL); Comanche Peak Nuclear Power Plant, Units 3 and 4 COL; and Turkey

Point, Units 6 and 7 COL. Mr. Willingham was the environmental lead for the environmental review and environmental impact statement development of the Comanche Peak Nuclear Power Plant, Units 3 and 4 COL application. He supported the terrestrial ecology and hydrology reviews of Vogtle Electric Generating Station COL and Turkey Point COL. He has coordinated communication and consultations with Federal and State agencies in support of those activities. Mr. Willingham was essential in the development of new reactors' environmental review pre-application process and served as a technical reviewer for terrestrial ecology, hydrology, and land-use in support of those activities.

Prior to joining the NRC, Mr. Willingham was employed with the Texas Commission on Environmental Quality as an Environmental Investigator and Emergency Response Coordinator for the Waco Regional Office from 2004 to 2006. He was responsible for performing complex technical work in the field of wastewater and stormwater management in the Waco Regional Office. Activities included conducting technical inspections, sanitary surveys, and follow-up investigations, preparing technical reports documenting field activities and observed conditions; conducting environmental monitoring; collecting and analyzing environmental samples; and providing technical assistance to the public and regulated community.

As a graduate and undergraduate (2001-2004), he researched the environmental effects of naturally occurring radioactive material from abandoned uranium mines in south Texas for the Texas A&M University's Division of Nearshore Research.

Neil R. Giffen
Statement of Professional Qualifications

CURRENT POSITION

Natural Resources Manager
Facilities and Operations Directorate
Oak Ridge National Laboratory
Oak Ridge, TN

EDUCATION

M.S., University of Maryland	Wildlife Management	1983
B.A., State University of New York	Environmental Science	1979

QUALIFICATIONS

Mr. Giffen has over 25 years of experience conducting environmental assessments. This work has included environmental impact analysis for proposed development projects and review of numerous environmental assessments and impact statements. Past reviews were conducted at the local level for residential and commercial projects, along with reviews conducted for the Department of Energy (DOE) and the Department of Defense (DoD). Mr. Giffen has also conducted numerous sensitive resources surveys to assess potential impacts on wildlife habitat, wetlands and other natural features in the environment. He has provided written input to a number of environmental assessments as a subject matter expert in terrestrial ecology and wetlands. Mr. Giffen currently oversees overall natural resource impact reviews of projects taking place on the DOE Oak Ridge Reservation, as the leader of a team of Oak Ridge National Laboratory (ORNL) subject matter experts in various areas of terrestrial and aquatic ecology.

Mr. Giffen has over 40 publications in the areas of wildlife and habitat management, as well as other areas of natural resource management.

Jack Cushing
Statement of Professional Qualifications

CURRENT POSITION

Senior Project Manager
Environmental and Technical Support Branch
Division of Site Safety and Environmental Analysis
Office of New Reactors

EDUCATION

B.S. Marine Engineering, Massachusetts Maritime Academy

PROFESSIONAL

Advisory Council on Historic Preservation: The Section 106 Essentials,
National Preservation Institute: Cultural and Natural Resources: An Integrated Management
Strategy

National Preservation Institute: Native American Graves Protection and Repatriation Act
(NAGPRA) and the Archaeological Resources Protection Act (ARPA): Applications and
Requirements

QUALIFICATIONS

Mr. Cushing has 33 years of environmental, licensing, and operating experience in the nuclear power field. The 33 years includes, 17 years of regulatory experience with the NRC, and 16 years of operating experience as both an auxiliary operator and a licensed reactor operator at Maine Yankee nuclear power plant. Since joining the NRC, Mr. Cushing has been a project manager for operating reactors and an environmental project manager for license renewal applications and for new reactors. Specifically, he managed the environmental reviews for Farley Nuclear Plant and Fort Calhoun Station license renewal and for the North Anna early site permit. Mr. Cushing has, in addition to PSEG early site permit application, supported a number of new reactor combined license applications reviews including Summer, Fermi, South Texas Project, Calvert Cliffs, Bell Bend, and Turkey Point. This professional experience required the coordinating the licensing reviews for new and operating nuclear facilities as well as providing technical oversight for the historic and cultural resource review for the PSEG early site permit project.

Mr. Cushing, has been responsible for coordinating the development of several environmental guidance documents, including COL/ESP-ISG-026, Interim Staff Guidance on Environmental Issues Associated with New Reactors and COL/ESP-ISG-027, Interim Staff Guidance on Specific Environmental Guidance for Light Water Small Modular Reactor and the NRC

endorsement of NEI 10-07 NEI 10-07, Industry Guideline for Effective Interactions With Agencies Other Than NRC During the Early Site Permit Process.

Prior to joining the Office of New Reactors, Mr. Cushing served as a Senior Project Manager in the Office of Nuclear Reactor Regulation, Division of License Renewal. In that position, he was the environmental project manager for two license renewals and the North Anna early site permit review. As the project manager for those reviews he was responsible for coordinating the National Historic Preservation Act Section 106 reviews with the States and Tribes.

Mohammad Haque
Statement of Professional Qualifications

CURRENT POSITION

Senior Hydrologist
Environmental Technical Support Branch
Division of Site Safety and Environmental Analysis
Office of New Reactors
U.S. Nuclear Regulatory Commission
Washington, D.C.

EDUCATION

M.S., Civil Engineering, University of Texas at Arlington, Texas
B.S., Civil Engineering

PROFESSIONAL

Registered Professional Engineer (P.E.), Virginia, Maryland, and Massachusetts
Member Tau Beta Pi (National Engineering Honor Association)
Member of Chi Epsilon (National Civil Engineering Honor Fraternity)

QUALIFICATIONS

Mr. Haque is a Civil Engineer with over 40 years of experience in environmental and water resources engineering with private and public sectors, including about eighteen years at the U.S. Nuclear Regulatory Commission (NRC). His experience at the NRC includes about seven years in the Division of Site Safety and Environmental Analysis, initially serving as a project manager and then as a technical expert reviewing hydrologic aspects of safety analysis reports and environmental reports for various early site permit (ESP) and combined license (COL) applications in the Office of New Reactors; and about eleven years serving as a project manager for various uranium recovery facilities in the Division of Waste Management (DWM), and for fuel manufacturing facilities in the Division of Fuel Cycle Safety and Safeguards (FCSS) in the Office of Nuclear Material Safety and Safeguards (NMSS). At the NRC, besides managing projects, Mr. Haque has prepared various environmental assessments and technical evaluation reports, and served as the lead in performing surface water hydrologic modeling.

Prior to joining NRC, Mr. Haque served as Chief of Engineering Plan Review Division at Prince William County, Virginia for about four years. At the County, his responsibilities included administration of floodplain management, and watershed management programs. He served on various Northern Virginia engineering committees on regulatory aspects and design standards. He served as the Chairman of Prince William County Design and Construction Standards Committee.

While at graduate school, Mr. Haque also taught courses on hydrology and water quality and pollution control. After graduation, he began his career in private sector working with consulting engineering companies in Houston, Texas.

Philip D. Meyer
Statement of Professional Qualifications

CURRENT POSITION

Senior Research Engineer
Hydrology Group, Energy and Environment Directorate
Pacific Northwest National Laboratory
Richland, Washington

EDUCATION

Ph.D., University of Illinois, Civil Engineering, 1992
M.S., University of Illinois, Civil Engineering, 1988
B.A., Cornell University, Physics, 1986

PROFESSIONAL

American Geophysical Union, Member
ANS-2.17 Working Group Member, Revised ANSI/ANS-2.17-2010, Evaluation of Subsurface Radionuclide Transport at Commercial Nuclear Power Plants

QUALIFICATIONS

Dr. Meyer is a Sr. Research Engineer at Pacific Northwest National Laboratory with more than 20 years of experience in applying hydrologic principles to the solutions of engineering problems, with a focus on modeling flow and transport through unsaturated and saturated porous media, and consideration of the effects of uncertainty on the model results and engineering solutions. Dr. Meyer has evaluated and/or applied multiple analytical and numerical hydrologic models, parameter estimation methods, and probability modeling and statistical methods. Dr. Meyer has experience with the analysis of flow and transport in soil covers, engineered barriers, and the near-field environment at waste disposal facilities, which included data collection and analysis for the near-field environment of the U.S. Dept. of Energy Hanford Site Integrated Disposal Facility performance assessment. As part of research sponsored by the NRC, Dr. Meyer developed a methodology to estimate the combined impact of uncertainties in hydrogeologic model parameters, conceptualization, and future scenarios. The practicality and benefits of this methodology were demonstrated in applications to geostatistical modeling of subsurface properties, uranium transport in groundwater, and groundwater flow at a new reactor site. Dr. Meyer's experience includes the development, evaluation, and application of simulation models and optimization methods to the design of groundwater monitoring networks, and the evaluation of uncertainty in modeling the stimulated bioreduction of uranium.

Dr. Meyer's support to the Nuclear Regulatory Commission includes preparation of ten NUREG/CR reports and a number of related peer-reviewed journal articles addressing modeling, parameter estimation, and uncertainty assessment in low-level radioactive waste disposal, dose assessment for decommissioning, and new reactor licensing. Dr. Meyer has supported the NRC Office of New Reactors since 2007. He was the principal author and technical analyst for the groundwater sections of safety evaluations for the North Anna Unit 3 COL, Calvert Cliffs Unit 3 COL, and Vogtle Units 3 & 4 COL. In addition, he was a contributor to the North Anna Unit 3 and Vogtle COL Supplemental EISs and the primary contributor to the water-related sections of the Bell Bend COL and PSEG ESP environmental impact statements. Dr. Meyer contributed to draft revisions of Regulatory Guide 4.2, the Environmental Standard Review Plan (NUREG-1515), and the Design-Specific Review Standard for mPower™ iPWR. As a member of the ANS-2.17 Working Group, Dr. Meyer contributed to the revised ANSI/ANS-2.17-2010 standard for evaluation of subsurface radionuclide transport at commercial nuclear

power plants. Dr. Meyer has also provided technical contributions to the NRC staff's reviews of flood hazard reevaluations at existing reactor sites.

Dr. Meyer is the author or coauthor of more than 20 peer-reviewed journal articles and more than 30 additional papers and reports.

Jennifer A. Davis
Statement of Professional Qualifications

CURRENT POSITION

Senior Project Manager
Environmental Technical Support Branch
Division of Site Safety and Environmental Analysis
Office of New Reactors
U.S. Nuclear Regulatory Commission
Washington, D.C.

EDUCATION

B.A., Historic Preservation/Classical Civilization, Mary Washington College

PROFESSIONAL

Duke University Environmental Leadership Courses: The Law of NEPA, Accounting for Cumulative Effects

The Shipley Group: Cultural and Natural Resource Management

National Preservation Institute: Integrating Cultural Resources in NEPA Compliance: Environmental Assessment, Cultural Resource Management and Historic Preservation Responsibilities and their Implementation Through the NEPA Process; Native American Graves Protection and Repatriation Act (NAGPRA) and Archaeological Resources Protection Act (ARPA): Applications and Requirements

SWCA Environmental Consultants: Issues in Section 106: Advanced

Advisory Council on Historic Preservation: The Section 106 Essentials, Section 106 – An Advanced Seminar, Managing Confidentiality and Section 304 of the National Historic Preservation Act (NHPA), NHPA Section 106 Process – Determination of Eligibility, Considerations in Tribal Interactions

QUALIFICATIONS

Ms. Davis has approximately 14 years of experience managing and participating in major, multidisciplinary environmental projects for the U.S. Nuclear Regulatory Commission (NRC) within the Offices of Nuclear Reactor Regulation (NRR), the Office of Federal and State Materials and Environmental Management Programs (FSME), the Office of Nuclear Material Safety and Safeguards (NMSS), and in the Office of New Reactors (NRO). This experience includes National Environmental Policy Act (NEPA) reviews and preparation of environmental impact statements (EISs). She also supports environmental reviews managed by other NRC staff, reviews NEPA documents prepared by others, analyzes and determines NEPA documentation requirements for nuclear facilities, and contributes to the development of guidance associated with the preparation of NRC NEPA documents. Ms. Davis also serves as a technical reviewer for the field of historic and cultural resources and National Historic

Preservation Act (NHPA) Section 106 compliance and has provided technical support to other program offices.

As a Senior Project Manager at the NRC, Ms. Davis has planned, led, and participated in major, complex multidisciplinary environmental reviews and development of guidance documents and EISs for licensing nuclear facilities under NRC regulations in Title 10 of the *U.S. Code of Federal Regulations* (10 CFR) Parts 40, 70, 51, and 54. During the PSEG review, Ms. Davis was the NRC's technical lead for the NEPA evaluation of impacts to cultural and historic resources and the NHPA Section 106 consultation, provided technical oversight of contractor staff, and served as one of the principle authors in developing the Memorandum of Agreement for the PSEG ESP Site.

Prior to joining NRO, Ms. Davis was a senior project manager in FSME and in NMSS. She was the EIS project manager for the General Electric-Hitachi Global Laser uranium enrichment facility near Wilmington, North Carolina. Ms. Davis also supported staff in finalizing the first three *in-situ* recovery (ISR) supplemental EISs and assisted project managers in Section 106 compliance. In addition, Ms. Davis assisted in the development of a MOA for the Nichols Ranch ISR project in Campbell and Johnson Counties, Wyoming. In NMSS, Ms. Davis was the technical reviewer responsible for the historic and cultural resources, socioeconomic, environmental justice, land use, and noise sections of NUREG-2157, *Generic Environmental Impact Statement for Continued Storage of Spent Nuclear Fuel*.

Prior to her appointment in FSME and NMSS, Ms. Davis served both as an environmental scientist and project manager in the Division of License Renewal (DLR) within NRR. Ms. Davis was the project manager for the update to *Generic Environmental Impact Statement (GEIS) for License Renewal of Nuclear Plants* (NUREG-1437, Volumes 1 and 2) and supported the associated rulemaking; lead project manager for Monticello license renewal application (NUREG-1437, Supplement 26); provided technical oversight/support for 25 license renewal reviews; authored historic and archaeological resource sections for Susquehanna, Beaver Valley, Three Mile Island, Kewaunee, Cooper, and Prairie Island supplemental EISs to NUREG-1437; developed NRC's "Section 106 through NEPA" approach used in both NRR and NRO licensing reviews, and provided technical support to other NRC program offices.

Prior to serving as an environmental scientist and project manager in DLR, Ms. Davis was a general scientist who supported environmental project managers in the assessment of environmental impacts associated with nuclear power plant operations and the preparation of EISs for license renewal and early site permit applications. Ms. Davis also attended and participated in technical conferences and seminars sponsored by the NRC and/or professional societies, for the purpose of emphasizing the safety and environmental impact of nuclear power plants while serving as a technical expert in the field of archaeology.

Prior to joining the NRC, Ms. Davis worked for Old Dominion University Research Foundation and served as their payroll coordinator. She also served as a field archaeologist for Louis Berger and Associates in 1996.

Andrew J. Kugler
Statement of Professional Qualifications

Current Position

Senior Environmental Project Manager
Environmental Technical Support Branch
Division of Site Safety and Environmental Analysis
Office of New Reactors

Education

B.S. - Mechanical Engineering - Cooper Union - 1978
M.S. - Technical Management - Johns Hopkins University – 1998

Professional

Duke University, Nicholas School of the Environment, Certificate in the National Environmental Policy Act

Qualifications

Mr. Kugler has 15 years of experience managing and participating in major, multidisciplinary environmental projects for the U.S. Nuclear Regulatory Commission (NRC) within the Office of Nuclear Reactor Regulation (NRR) and the Office of New Reactors (NRO). This experience includes National Environmental Policy Act (NEPA) reviews and preparation of environmental impact statements (EISs). He also supports environmental reviews managed by other NRC staff, reviews NEPA documents prepared by others, analyzes and determines NEPA documentation requirements for nuclear reactor facilities, and contributes to the development of guidance associated with the preparation of NRC NEPA documents. Mr. Kugler also serves as a technical reviewer for the field of alternatives for almost all new reactor license applications.

As a Senior Project Manager in NRO, Mr. Kugler has planned, led, and participated in major, complex multidisciplinary environmental reviews and development of EISs for licensing of nuclear reactors under NRC regulations in Title 10 of the *U.S. Code of Federal Regulations* (10 CFR) Parts 51 and 52. He managed the project to update high priority portions of the Environmental Standard Review Plan (ESRP), completing the update of approximately 40 sections, including the Introduction (which includes guidance common to all sections), and the sections addressing energy alternatives and alternative sites. He also provided environmental insights to the 2007 rulemaking updating Parts 52 and 51, and provided comments for the 2007 rulemaking that modified the definition of construction.

Prior to the creation of NRO, Mr. Kugler managed environmental reviews for licensing and relicensing nuclear reactors in NRR. From 2003 to 2005 he was the Chief of the Environmental Branch in NRR, managing the NRC staff responsible for all environmental review activities in NRR. The branch's primary activities involved the review of multiple license renewal applications and the first three early site permit (ESP) applications. From 2000 to 2003 Mr. Kugler managed or supported teams performing environmental reviews of 10 license renewal and 2 ESP applications. Mr. Kugler developed and incorporated lessons-learned into staff review processes, including preparations for the first new reactor applications.

From 1995 to 2000 Mr. Kugler was a Project Manager in the Division of Licensing Program Management in NRR. He managed all licensing actions for Fermi 2, including 15 amendments issued over a 6-month period to support a refueling outage, and the conversion to the improved standard technical specifications. In addition, he led NRR activities related to dry cask storage, coordinating between the Regions, NRR, and the Office of Nuclear Material Safety and Safeguards for issues related to dry cask storage of spent fuel.

From 1990 to 1995, Mr. Kugler was a Reactor Engineer in the Generic Communications Branch in NRR. He prepared or managed the development of NRC generic communications (bulletins, generic letters, and information notices) on a broad range of technical issues. He also managed a major review of the closure of past technical issues and recommended action on a select few for which the NRC's closure had not been fully effective.

Prior to joining the NRC, Mr. Kugler worked for Gulf States Utilities at the River Bend Station. From 1987 to 1990 he supervised 16 system engineers who monitored the performance of all of the mechanical systems at River Bend, a BWR-6 design. He managed the inservice testing program, portions of the fire protection program, and the erosion/corrosion and motor-operated valve monitoring programs. He reviewed all major modifications and procedure changes as a voting member of the Facility Review Committee. Finally, he managed the on-site response (with the exception of the control room) to emergencies as the Technical Support Center Manager.

From 1983 to 1987 Mr. Kugler was a Senior Start-Up Engineer in the Preoperational Test Organization. He developed test procedures and directed preoperational testing for assigned systems (condensate and feedwater, closed cooling water). He also served as one of three shift test directors, responsible for coordinating all of the test activities of the various organizations (Stone & Webster, Preoperational Test Organization, Operations, and Maintenance). Among other activities, he supervised the integrated emergency core cooling systems test, initial fuel load, and initial criticality for the unit. As the test program came to a close, he entered the licensed operator training program and earned a senior reactor operator's license.

From 1978 to 1983 Mr. Kugler served in the U.S. Navy. After completing the nuclear training program, he taught enlisted personnel at the Nuclear Power School for a year. He was then assigned to submarine duty, qualifying as a diving officer and engineering officer of the watch (supervising the operation of the nuclear plant).