

October 16, 2006

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

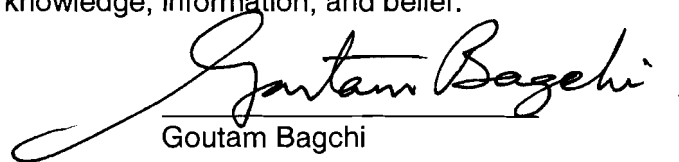
In the Matter of)
)
EXELON GENERATION COMPANY, LLC.) Docket No. 52-007-ESP
)
(Early Site Permit for Clinton ESP Site))

AFFIDAVIT OF GOUTAM BAGCHI CONCERNING PREFILED
DIRECT TESTIMONY IN THE CLINTON ESP PROCEEDING

I, Goutam Bagchi, do hereby state as follows:

1. I am a Senior Advisor in the Nuclear Regulatory Commission's (NRC's), Office of Nuclear Reactor Regulation (NRR), Division of Engineering (DE). A statement of my professional qualifications is attached.
2. As part of the NRC staff's health and safety review of the Exelon ESP application, documented in NUREG-1844, the "Safety Evaluation Report for an Early Site Permit (ESP) at the Exelon ESP Site: Final Report," May 2006 ("SER"), I reviewed the aspects of the Applicant's Site Safety Analysis Report that concerned hydrology.
3. I have primary technical responsibility for those portions of the NRC Staff's Prefiled Direct Testimony on Health and Safety Issues in the Clinton ESP Proceeding marked with my initials (GB).

4. I attest to the accuracy of those statements, support them as my own, and endorse their introduction into the record of this proceeding by the health and safety Project Manager, Joelle L. Starefos. I declare under penalty of perjury that those statements, and my statements in this affidavit, are true and correct to the best of my knowledge, information, and belief.


Goutam Bagchi

October 17, 2006

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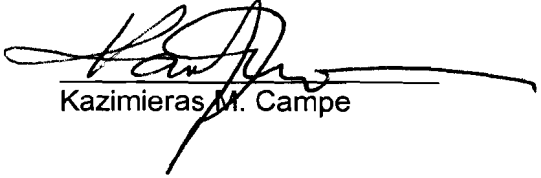
In the Matter of)
)
EXELON GENERATION COMPANY, LLC.) Docket No. 52-007-ESP
)
(Early Site Permit for Clinton ESP Site))

AFFIDAVIT OF KAZIMIERAS M. CAMPE CONCERNING PREFILED
DIRECT TESTIMONY IN THE CLINTON ESP PROCEEDING

I, Kazimieras M. Campe, do hereby state as follows:

1. In January 2006, I retired from full time employment with the U.S. Nuclear Regulatory Commission ("NRC") after 33 years of service. I am employed with the NRC staff under contract as a rehired annuitant. I am providing this testimony under that contract. A statement of my professional qualifications is attached.
2. As part of the NRC staff's health and safety review of the Exelon ESP application, documented in NUREG-1844, the "Safety Evaluation Report for an Early Site Permit (ESP) at the Exelon ESP Site: Final Report," May 2006 ("SER"), I reviewed the aspects of the Applicant's Site Safety Analysis Report that concerned man-made site hazards.
3. I have primary technical responsibility for those portions of the NRC Staff's Prefiled Direct Testimony on Health and Safety Issues in the Clinton ESP Proceeding marked with my initials (KC).

4. I attest to the accuracy of those statements, support them as my own, and endorse their introduction into the record of this proceeding by the health and safety Project Manager, Joelle L. Starefos. I declare under penalty of perjury that those statements, and my statements in this affidavit, are true and correct to the best of my knowledge, information, and belief.



Kazimieras M. Campe

October 16, 2006

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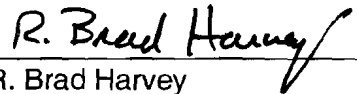
In the Matter of)
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EXELON GENERATION COMPANY, LLC.) Docket No. 52-007-ESP
)
(Early Site Permit for Clinton ESP Site))

AFFIDAVIT OF R. BRAD HARVEY CONCERNING PREFILED
DIRECT TESTIMONY IN THE CLINTON ESP PROCEEDING

I, R. Brad Harvey, do hereby state as follows:

1. I am a Physical Scientist in the Nuclear Regulatory Commission's (NRC's), Office of Nuclear Reactor Regulation (NRR), Division of Risk Assessment (DRA). A statement of my professional qualifications is attached.
2. As part of the NRC staff's health and safety review of the Exelon ESP application, documented in NUREG-1844, the "Safety Evaluation Report for an Early Site Permit (ESP) at the Exelon ESP Site: Final Report," May 2006 ("SER"), I reviewed the aspects of the Applicant's Site Safety Analysis Report that concerned meteorology.
3. I have primary technical responsibility for those portions of the NRC Staff's Prefiled Direct Testimony on Health and Safety Issues in the Clinton ESP Proceeding marked with my initials (RH).

4. I attest to the accuracy of those statements, support them as my own, and endorse their introduction into the record of this proceeding by the health and safety Project Manager, Joelle L. Starefos. I declare under penalty of perjury that those statements, and my statements in this affidavit, are true and correct to the best of my knowledge, information, and belief.


R. Brad Harvey

October 17, 2006

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NUCLEAR REGULATORY COMMISSION

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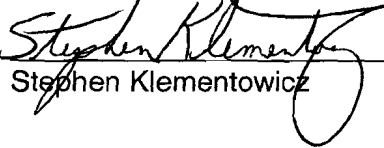
In the Matter of)
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EXELON GENERATION COMPANY, LLC.) Docket No. 52-007-ESP
)
(Early Site Permit for Clinton ESP Site))

AFFIDAVIT OF STEPHEN KLEMENTOWICZ CONCERNING PREFILED
DIRECT TESTIMONY IN THE CLINTON ESP PROCEEDING

I, Stephen Klementowicz, do hereby state as follows:

1. I am a Senior Health Physicist in the Nuclear Regulatory Commission's (NRC's), Office of Nuclear Reactor Regulation (NRR), Division of License Renewal (DLR). A statement of my professional qualifications is attached
2. As part of the NRC staff's health and safety review of the Exelon ESP application, documented in NUREG-1844, the "Safety Evaluation Report for an Early Site Permit (ESP) at the Exelon ESP Site: Final Report," May 2006 ("SER"), I reviewed the aspects of the Applicant's Site Safety Analysis Report that concerned the radioactive waste treatment system and the radiological impacts of routine operation to plant workers and members of the public, and to the environment.
3. I have primary technical responsibility for those portions of the NRC Staff's Prefiled Direct Testimony on Health and Safety Issues in the Clinton ESP Proceeding marked with my initials (SK).

4. I attest to the accuracy of those statements, support them as my own, and endorse their introduction into the record of this proceeding by the health and safety Project Manager, Joelle L. Starefos. I declare under penalty of perjury that those statements, and my statements in this affidavit, are true and correct to the best of my knowledge, information, and belief.


Stephen Klementowicz

October 16, 2006

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)
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EXELON GENERATION COMPANY, LLC.) Docket No. 52-007-ESP
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(Early Site Permit for Clinton ESP Site))

AFFIDAVIT OF JAY Y. LEE CONCERNING PREFILED
DIRECT TESTIMONY IN THE CLINTON ESP PROCEEDING

I, Jay Y. Lee, do hereby state as follows:

1. I am a Senior Health Physicist in the Nuclear Regulatory Commission's (NRC's), Office of Nuclear Reactor Regulation (NRR), Division of Risk Assessment (DRA). A statement of my professional qualifications is attached.
2. As part of the NRC staff's health and safety review of the Exelon ESP application, documented in NUREG-1844, the "Safety Evaluation Report for an Early Site Permit (ESP) at the Exelon ESP Site: Final Report," May 2006 ("SER"), I reviewed the aspects of the Applicant's Site Safety Analysis Report that concerned geography and demography, and radiological consequences of the design basis accidents.
3. I have primary technical responsibility for those portions of the NRC Staff's Prefiled Direct Testimony on Health and Safety Issues in the Clinton ESP Proceeding marked with my initials (JL).

4. I attest to the accuracy of those statements, support them as my own, and endorse their introduction into the record of this proceeding by the health and safety Project Manager, Joelle L. Starefos. I declare under penalty of perjury that those statements, and my statements in this affidavit, are true and correct to the best of my knowledge, information, and belief.



Jay Y. Lee

October 16, 2006

UNITED STATES OF AMERICA
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In the Matter of)
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EXELON GENERATION COMPANY, LLC.) Docket No. 52-007-ESP
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(Early Site Permit for Clinton ESP Site))

AFFIDAVIT OF ROBERT MOODY CONCERNING PREFILED
DIRECT TESTIMONY IN THE CLINTON ESP PROCEEDING

I, Robert Moody, do hereby state as follows:

1. I am a Senior Emergency Preparedness Specialist in the Nuclear Regulatory Commission's (NRC's), Office of Nuclear Security and Incident Response, Division of Preparedness and Response (DPR). A statement of my professional qualifications is attached.
2. As part of the NRC staff's health and safety review of the Exelon ESP application, documented in NUREG-1844, the "Safety Evaluation Report for an Early Site Permit (ESP) at the Exelon ESP Site: Final Report," May 2006 ("SER"), I reviewed the aspects of the Applicant's Site Safety Analysis Report that concerned emergency planning.
3. I have primary technical responsibility for those portions of the NRC Staff's Prefiled Direct Testimony on Health and Safety Issues in the Clinton ESP Proceeding marked with my initials (RM).

4. I attest to the accuracy of those statements, support them as my own, and endorse their introduction into the record of this proceeding by the health and safety Project Manager, Joelle L. Starefos. I declare under penalty of perjury that those statements, and my statements in this affidavit, are true and correct to the best of my knowledge, information, and belief.


Robert Moody

October 16, 2006

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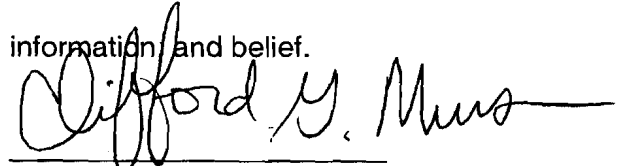
In the Matter of)
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EXELON GENERATION COMPANY, LLC.) Docket No. 52-007-ESP
)
(Early Site Permit for Clinton ESP Site))

AFFIDAVIT OF CLIFFORD G. MUNSON CONCERNING PREFILED
DIRECT TESTIMONY IN THE CLINTON ESP PROCEEDING

I, Clifford G. Munson, do hereby state as follows:

1. I am a Senior Technical Reviewer in the Nuclear Regulatory Commission's (NRC's), Office of Nuclear Reactor Regulation (NRR), Division of Engineering (DE). A statement of my professional qualifications is attached.
2. As part of the NRC staff's health and safety review of the Exelon ESP application, documented in NUREG-1844, the "Safety Evaluation Report for an Early Site Permit (ESP) at the Exelon ESP Site: Final Report," May 2006 ("SER"), I reviewed the aspects of the Applicant's Site Safety Analysis Report that concerned geology and seismology.
3. I have primary technical responsibility for those portions of the NRC Staff's Prefiled Direct Testimony on Health and Safety Issues in the Clinton ESP Proceeding marked with my initials (CM).

4. I attest to the accuracy of those statements, support them as my own, and endorse their introduction into the record of this proceeding by the health and safety Project Manager, Joelle L. Starefos. I declare under penalty of perjury that those statements, and my statements in this affidavit, are true and correct to the best of my knowledge, information, and belief.



Clifford G. Munson

October 16, 2006

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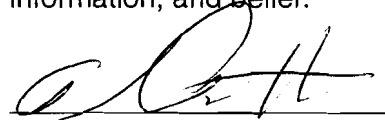
In the Matter of)
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EXELON GENERATION COMPANY, LLC.) Docket No. 52-007-ESP
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(Early Site Permit for Clinton ESP Site))

AFFIDAVIT OF PAUL F. PRESCOTT CONCERNING PREFILED
DIRECT TESTIMONY IN THE CLINTON ESP PROCEEDING

I, Paul F. Prescott, do hereby state as follows:

1. I am a Senior Technical Reviewer in the U.S. Nuclear Regulatory Commission's (NRC's), Office of Nuclear Regulation (NRR), Division of Engineering. A statement of my professional qualifications is attached.
2. As part of the NRC staff's health and safety review of the Exelon ESP application, documented in NUREG-1844, the "Safety Evaluation Report for an Early Site Permit (ESP) at the Exelon ESP Site: Final Report," May 2006 ("SER"), I reviewed the aspects of the Applicant's Site Safety Analysis Report that concerned quality assurance measures.
3. I have primary technical responsibility for those portions of the NRC Staff's Prefiled Direct Testimony on Health and Safety Issues in the Clinton ESP Proceeding marked with my initials (PP).

4. I attest to the accuracy of those statements, support them as my own, and endorse their introduction into the record of this proceeding by the health and safety Project Manager, Joelle L. Starefos. I declare under penalty of perjury that those statements, and my statements in this affidavit, are true and correct to the best of my knowledge, information, and belief.

A handwritten signature in black ink, appearing to read 'P. Prescott', written over a horizontal line.

Paul F. Prescott

October 16, 2006

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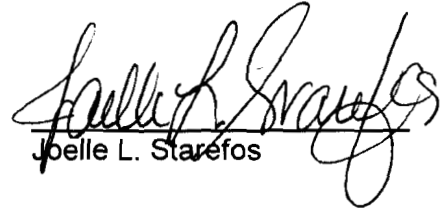
In the Matter of)
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EXELON GENERATION COMPANY, LLC.) Docket No. 52-007-ESP
)
(Early Site Permit for Clinton ESP Site))

AFFIDAVIT OF JOELLE L. STAREFOS CONCERNING PREFILED
DIRECT TESTIMONY IN THE CLINTON ESP PROCEEDING

I, Joelle L. Starefos, do hereby state as follows:

1. I am the NRC Project Manager for the health and safety review of Exelon Generation Company, LLC's (Exelon's) application for an early site permit (ESP) at the Exelon ESP site in Clinton, Illinois. A statement of my professional qualifications is attached.
2. I took over Project Management responsibilities in May 2006, following issuance of NUREG-1844, the "Safety Evaluation Report for an Early Site Permit (ESP) at the Exelon ESP Site: Final Report" ("SER"). I have been responsible for project management activities with respect to the SER since that time.
3. I have primary technical responsibility for those portions of the NRC Staff's Prefiled Direct Testimony on Health and Safety Issues in the Clinton ESP Proceeding marked with my initials (JS).

4. I attest to the accuracy of those statements, support them as my own, and endorse their introduction into the record of this proceeding. I declare under penalty of perjury that those statements, and my statements in this affidavit, are true and correct to the best of my knowledge, information, and belief.


Joelle L. Staréfos

October 17, 2006

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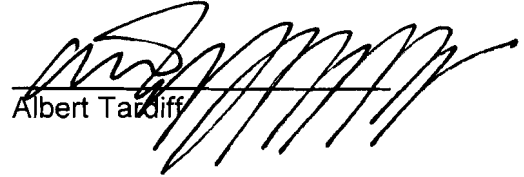
In the Matter of)
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AFFIDAVIT OF ALBERT TARDIFF CONCERNING PREFILED
DIRECT TESTIMONY IN THE CLINTON ESP PROCEEDING

I, Albert Tardiff, do hereby state as follows:

1. I am a Senior Technical Reviewer in the Nuclear Regulatory Commission's (NRC's), Office of Nuclear Security and Incident Response (NSIR), Division of Security Policy (DSP). A statement of my professional qualifications is attached.
2. As part of the NRC staff's health and safety review of the Exelon ESP application, documented in NUREG-1844, the "Safety Evaluation Report for an Early Site Permit (ESP) at the Exelon ESP Site: Final Report," May 2006 ("SER"), I reviewed the aspects of the Applicant's Site Safety Analysis Report that concerned physical security.
3. I have primary technical responsibility for those portions of the NRC Staff's Prefiled Direct Testimony on Health and Safety Issues in the Clinton ESP Proceeding marked with my initials (AT).

4. I attest to the accuracy of those statements, support them as my own, and endorse their introduction into the record of this proceeding by the health and safety Project Manager, Joelle L. Starefos. I declare under penalty of perjury that those statements, and my statements in this affidavit, are true and correct to the best of my knowledge, information, and belief.


Albert Tardiff

STATEMENT OF PROFESSIONAL QUALIFICATIONS OF GOUTAM BAGCHI

CURRENT POSITION

Senior Level Advisor for Civil Engineering and Geoscience, Division of Engineering,
United States Nuclear Regulatory Commission

EDUCATION

M.S. Mechanical Engineering, Northeastern University, Boston, MA, 1974
M.Sc. Structural Engineering, London University, London, United Kingdom, 1964
B.E. Civil Engineering, Calcutta University, India, 1959

PROFESSIONAL

American Society of Civil Engineers: Fellow, Member ASCE Nuclear Standards
Committee
American Society of Mechanical Engineers: Member
Earthquake Engineering Research Institute: Member
Professional Engineer: Massachusetts, Pennsylvania and New York

QUALIFICATIONS

Mr. Goutam Bagchi has over 47 years of professional work experience of which 39 years is in the design, evaluation, inspection, regulation of nuclear power plant structures, systems and components. He is currently a Senior Level Advisor in the Division of Engineering, NRR. He provides authoritative technical advice and assistance to the Director, Division of Engineering, as the Senior Level Advisor and Lead Coordinator on a broad variety of technical and regulatory issues. He serves as the agency's authority in performing and coordinating the evaluation and resolution of technical and regulatory issues related to structural mechanics involving structures, seismic geosciences and civil engineering areas in nuclear power plants under licensing review related to design certification and early site permit applications, under construction, in operation, under license renewal or in decommissioning.

Mr. Bagchi joined the NRC in 1975 as a technical reviewer. In 1976 he became a senior structural engineer. In 1978 he became the Branch Chief of the Structural Research Branch in the Office of Research. He was instrumental in developing the research program on containment capacity through testing of large scale containment structures to failure. In 1987 he joined the Senior Executive Service and became the Branch Chief for Structural and Civil Engineering Branch, NRR, DE. In 1999 he joined the Senior Level Service and has since served in DE, NRR. He was instrumental in the development of the endorsement of containment inspection requirements in 10 CFR Part 50.55a and maintenance of safety-related structures within the scope of the maintenance rule, 10 CFR 50.65.

In 1987 and 1997, he and his staff conducted the standard plant certification reviews for ABWR, CE System 80+, AP600, and AP 1000 in civil, mechanical and materials engineering areas. As a senior advisor he was involved in the discussions with stake holders on issues related to early site permit applications. He provided input for the ESP template, and the criteria to be used to determine permit conditions, site characteristics and COL action items. He is involved in the review of three ESP applications in the hydrology area. He participated in

a leadership role in all major seismic programs associated with NRR since 1978: Siting rule, 10 CFR Part 100.23, Appendix S to Part 50 and the associated Regulatory Guide 1.165 and corresponding Standard Review Plan Sections, Individual Plant Examination of External Events, Seismic Margins related Unresolved Safety Issues A 40 and A 46, Probabilistic Seismic Hazard Study update of 1993, Diablo Canyon Long Term Seismic Program review and evaluation, including determination of fragility of structures, systems and components. He participated and significantly contributed to the development of risk informed in-service inspection (ISI) of reactor coolant system piping, and was instrumental in the timely review and approval of ISI programs in the Chairman's Tracking List. He has made significant contributions to the development and acceptance of the performance-based seismic design of nuclear power plants.

Mr. Bagchi provided input for the hydrology portion of RS-002, by adapting the Standard Review Plan Section 2.4 for the review of ESP applications. In 2005, Mr. Bagchi represented the NRC, and served as co-chair of two sessions, at the International Workshop on External Flooding, which looked at issues related to tsunami hazards, and was held in Kalpakkam, India. He participated in the development of a tsunami guideline document for the IAEA in Trieste, Italy in 2006 under the joint sponsorship of the International Atomic Energy Agency and the International Center for Theoretical Physics. Currently he is the technical monitor for updating Section 2.4, Hydrologic Engineering, of the SRP.

SELECTED PUBLICATIONS AND PRESENTATIONS

Ashar, H, Bagchi G, NUREG 1522, "Assessment of Inservice Conditions of Safety-Related Nuclear Plant Structures." June, 1995.

Bagchi G. et al, "U. S. Regulatory Criteria on Nuclear Plant Protection against External Flooding," presented at the International Workshop in Kalpakkam, India in October, 2005.

Bagchi G. et al, "Containment Design, Performance Criteria and Research Needs for Advanced Reactor Designs," presented at the 12th International Conference on Nuclear Engineering.

Presentation in Trieste on U. S. Tsunami Hazard Protection.

Kazimieras M. Campe
Statement of Professional Qualifications

Current Position:

Consultant
Accident Dose Branch
Division of Risk Assessment
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C.

Education:

B.S., Mechanical Engineering, University of Connecticut
M.S., Mechanical Engineering, University of Connecticut
Ph.D., Nuclear Engineering, Purdue University

Post-Graduate Courses and Training

- Rensselaer Polytechnic Institute (Mathematics)
- Massachusetts Institute of Technology (Nuclear Power Plant Operations)
- Babcock & Wilcox (Nuclear Power Plant Operations)
- U. S. Nuclear Regulatory Commission
 - Applying Statistics
 - System Reliability and Safety Analysis
 - BWR Fundamentals
 - PWR Fundamentals
 - Fault Tree Analysis
 - Radiological Accident Assessment
 - Fundamentals of Inspection
 - Supervision and Management

Experience:

U. S. Nuclear Regulatory Commission (formerly U. S. Atomic Energy Commission), 1972 - Present

Dr. Campe has retired from the NRC as of January, 2006. Currently Dr. Campe is a rehired annuitant employed as a contractor to the NRC and provides technical support in the area of nuclear power plant site hazards within the Accident Dose Branch of the Division of Risk Assessment. Specifically, a principal part of his duties involves the performance of safety assessments of nuclear power plant facilities with respect to risks posed to nuclear facilities by external man-made hazards. These include assessment of risks associated with aircraft activity as well as other modes of transportation (e.g., railroads, highways, navigable waterways, and pipelines). The assessments also include evaluation of hazards such as explosions, toxic gas releases, fires, and missiles.

Prior to his present position, Dr. Campe was assigned to the Analytic Support Group, which provided analytic services to the technical branches within the Division of Systems Safety and Analysis. As a technical staff member of this group, he primarily performed thermal hydraulic analyses of nuclear power plant transients and design basis accidents using advanced nuclear analysis codes. Part of his duties within the group involved

code development and maintenance activities. In addition, he provided analytic support in other areas, such as spent fuel pool thermal analysis code work.

Before joining the Analytic Support Group, Dr. Campe was employed as Section Chief in the Risk Applications Branch. His responsibilities within the branch were to supervise and participate in the administrative and technical activities of the Reliability Applications Section. This involved the planning, coordinating, and directing risk evaluations with respect to the design and operation of nuclear power plants. Specifically, using a diverse background of systems engineering and risk assessment, Dr. Campe supervised the development and application of systems reliability and plant risk analysis for the purpose of identifying significant contributors to risk. As Section Chief, he also performed technical evaluations and provided expert consultation in the area of man-made hazards.

Prior to the Risk Applications Branch, Dr. Campe held the positions of Section Leader in the Plant Systems Branch and the Site Analysis Branch. His principal responsibilities were the technical and administrative supervision of licensing actions relating to plant systems design and operation, external hazards, and site suitability determinations.

Before accepting the position of Section leader, Dr. Campe was employed as Senior Site Analyst, Site Analyst, and Nuclear Engineer. He was responsible for performing licensing reviews, principally in the areas of man-made external hazards associated with toxic, flammable, or explosive substances, as well as missile impacts. In addition, he performed reviews of tornado and turbine missile risks, and control room habitability systems with respect to design basis accidents.

His activities in generic studies included technical contract management, computer code development, drafting of Regulatory Guides, and participating in Fission Product Release and Foreign Reactor Safety Research Groups. Specifically, he prepared most of the technical input for Regulatory Guide 1.115 on turbine missiles. He also prepared the following sections of the Standard Review Plan, NUREG-0800 (formerly NUREG-75/087): Standard Review Plan § 3.5.1.3, "Turbine Missiles"; Standard Review Plan § 2.2.1-2.2.2, "Identification of Potential Hazards in Site Vicinity"; Standard Review Plan § 2.2.3, "Evaluation of Potential Accidents"; Standard Review Plan § 3.5.1.5, "Site Proximity Missiles (Except Aircraft)"; and Standard Review Plan § 3.5.1.6, "Aircraft Hazards."

Hittman Associates, Inc., Columbia, MD, 1966 - 1972

As Section Chief for radiation analysis and special projects, Dr. Campe was responsible for radiation analysis of systems which either use or interface with radioisotopes.

In this capacity, he performed numerous parametric studies on the radiation shielding characteristics of conceptual polonium, promethium, and plutonium fueled heat sources, and was responsible for detailed analysis of the radiation fields and the radiation shielding requirements of radioisotope thermoelectric generators for spacecraft. He also performed radiation analyses for implanted medical devices.

Dr. Campe also was active in reactor physics analysis, performing calculations and developing advanced computer codes for analyzing water moderated reactor lattices.

Pratt and Whitney, CANEL, Middletown, CT, 1960 - 1962 (plus summer of 1963)

As Analytical Engineer, Dr. Campe worked in the Analytic Physics Group on problems

associated with the design of a nuclear propulsion reactor for an aircraft. This involved extensive reactor physics analyses of a liquid metal fast fission spectrum reactor.

STATEMENT OF PROFESSIONAL QUALIFICATIONS OF STEPHEN P. KLEMENTOWICZ

CURRENT POSITION

Senior Health Physicist
Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission

EDUCATION

M.S. Health Physics, University of Florida, Gainesville, FL, 1981
B.S. Radiological Science, Manhattan College, New York, NY, 1980

QUALIFICATIONS

Mr. Stephen Klementowicz joined the NRC in 1990 and has over 25 years experience in Health Physics, which includes extensive regulatory experience in radiological effluent monitoring programs, radiological environmental monitoring programs, radioactive material control programs. Mr. Klementowicz's current activities involve working as a Senior Health Physicist to prepare the Environmental Impact Statement for power reactor license renewal applications, in the areas of Occupational and Public radiation exposure from routine plant operation.

In his work for the Health Physics Branch in the Division of Inspection Program Management, Mr. Klementowicz was the lead NRR technical staffer for radiological effluent and environmental issues and was frequently called upon to review difficult and complex radioactive effluent and environmental monitoring program issues, in order to determine whether licensee actions were in conformance with NRC regulatory requirements and Commission policy and direction.

Mr Klementowicz was a member of the Liquid Lessons Learned Task Force, which dealt with abnormal spills and leaks of liquid radioactive material at nuclear power reactor plant sites. He prepared a thorough discussion of the regulatory requirements and guidance for the radiological effluent and environmental monitoring programs and made recommendations to enhance the effectiveness of the NRC regulatory programs.

Mr Klementowicz was the Lead for the Public Radiation Safety Cornerstone within the NRR Reactor Oversight Process inspection program. He was responsible for the following inspection program areas: radioactive material control, radiological effluent monitoring program, and the radiological environmental monitoring program. In his role as Lead for the Public Radiation Safety Cornerstone, he provided programmatic and technical support to Regional Inspectors during their on-site inspections and assisted in the review and comment of inspection findings in the final report.

Over his career with the NRC, in the areas of effluent and environmental monitoring, he has frequently led or been a prominent speaker at public meetings with a wide variety of stakeholders.

Mr. Klementowicz was also a Team Leader for the Health Physics Branch. In that role, he provided guidance, direction, and technical support to co-workers. He planned and directed their development, providing challenging and meaningful assignments that allowed the individuals to grow in their professional careers.

Mr. Klementowicz is a member of the NRC's Emergency Response Organization. He performs dose assessment calculations to assess the radiological dose impact to members of the public from a nuclear power reactor accident.

Awards

Mr Klementowicz has received numerous performance awards for his outstanding work as a Health Physicist with the NRC. He also received an award for his work as a mentor to new NRC employees in the Nuclear Safety Professional Development Program.

Reports/Publications

Liquid Radioactive Release Lessons Learned Task Force Final Report, 2006, S. Richard, T. Frye, J. Shepherd, T. Nicholson, G. Kuzo, R. Allen, U. Shoop, S. Sakai, M. Shannon, A. Keim, S. Klementowicz, R. Nimitz, S. Orth, S. Burnell. Prepared for the NRC's Executive Director of Operations.

STATEMENT OF PROFESSIONAL QUALIFICATIONS OF JAY Y. LEE

CURRENT POSITION

Senior Health Physicist
Accident Dose Branch
Division of Risk Assessment
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission

EDUCATION

B.S.	University of Minnesota, Chemical Engineering	1962
M.S.	Catholic University of America, Radiation Protection	1978

PROFESSIONAL AFFILIATIONS

American Nuclear Society
American Health Physics Society

INDUSTRY COMMITTEE ACTIVITIES

ANS-18.1 Working Group, "Radioactive Source Term for Normal Operation of Light Water Reactors."
ANS-55.6, Working Group, "Liquid Radioactive Waste Processing System for Light Water Reactor Plants."
ANS-55.4, Working Group, "Gaseous Radioactive Waste Processing System for Light Water Reactor Plants."

QUALIFICATIONS

Mr. Lee joined the NRC in 1974 and has over 40 years of experience in design, construction, operation, and licensing of nuclear power reactors.

Prior to joining the NRC in 1974, Mr. Lee worked at Pathfinder Atomic Power Plant (decommissioned) of (then) Northern States Power Company in Sioux Falls, SD as a nuclear chemist (1962 to 1966) and at Rancho Seco Nuclear Generating Station (decommissioned) of the Sacramento Municipal Utility District in Sacramento, CA as a chemical engineer and a health physicist (1969 to 1974). From 1966 to 1969, Mr. Lee worked at Bechtel Corporation in San Francisco, CA as a nuclear engineer and worked on design and construction of the Radioactive Waste Management Systems and the Reactor Water Treatment Systems for nuclear power plants (Palisades and Peach Bottom Nuclear Stations).

Current NRC Work

Site Characteristics and Radiological Consequence of Design Basis Accident Reviews for Early Site Permits. Mr. Lee reviewed the Site Safety Analysis Report (SSAR) submittals supporting the Clinton, Grand Gulf, and North Anna Early Site Permit (ESP) applications, including the preparation of the associated Safety Evaluation Report (SER) sections related to site characteristics and radiological consequences of design basis accidents. He reviewed draft and final Environmental Impact Statements prepared by an NRC contractor for the Clinton, Grand Gulf, and North Anna Early Site Permit (ESP) applications.

Standard Reactor Design Certification Review. He is reviewing General Electric ESBWR standard reactor design certification application Chapter 6, "Containment systems," and Chapter 15, "Safety Analysis."

License Amendment Reviews for Alternative Source Term (AST) Implementation. He is reviewing the radiological consequence analyses in support of licensing amendment requests related to implementation of the AST pursuant to 10 CFR 50.67.

He is participating in the NRC's new rulemaking of 10 CFR 52, "Early Site Permits; Standard Design Certifications; and Combined Licenses for Nuclear Power Plants."

He is preparing Regulatory Guide and Standard Review Plan Development for COL Applications.

He is developing reactor accident source terms for high burnup fuel and MOX fuel.

Recent Selected NRC Experience

Review Standard (RS)-002, "Processing Applications for Early Site Permits." He prepared selected sections of Chapter 2 and Chapter 15, "Radiological Consequences of Design Basis Accidents," of RS-002.

Standard Reactor Design Certification Reviews. He reviewed the standard reactor design certification of GE/ABWR, CE System 80+, Westinghouse AP600, and ACR 700 reactors and prepared safety evaluation reports for the radiological consequence analyses of the postulated reactor design basis accidents. Mr. Lee also completed the review of EPRI Advanced Light-Water Reactor Requirement Documents for Evolutionary and Passive Designs.

He helped refine the NRC Severe Accident Computer Code (MELCOR) and Consequence Computer Code (MACCS)

SELECTED PUBLICATIONS AND PRESENTATIONS

- NUREG-0016, Revision 1, "Calculation of Releases of Radioactive Materials in Gaseous and Liquid Effluents from Boiling Water Reactors (BWR-Gale Code)." 1979.
- NUREG-0017, Revision 1, "Calculation of Releases of Radioactive Materials in Gaseous and Liquid Effluents from Pressurized Water Reactors (PWR-Gale Code)." 1985.
- ANSI/ANS Standard 18.1 (as a working member), "Radioactive Source Term for Normal Operation of Light Water Reactors." Revision 0 (1976), Revision 1(1984), and Revision 2 (1999).
- SECY-94-302, "Source Term Related Technical and Licensing Issues Pertaining to Evolutionary and Passive Light-Water Reactor Designs" (1994).
- Presentation to 2004 ANS Winter Meeting, "Reactor Accident Source Term Program at U.S. Nuclear Regulatory Commission," Washington, D.C. November 2004.
- Presentation to 2006 ANS Annual Meeting, "Alternative Source Term Implementation at U.S. Reactors," Reno, NV, 2006.
- Presentation to 14th Pacific Basin Nuclear Conference, "Implementation of Alternative Source Term at U.S. Power Reactors," Honolulu, Hawaii, March 2004.

- Presentation to 2006 Cooperative Severe Accident Research and MELCOR code Assessment Technical Review Meeting, "Alternative Source Term Implementation at U.S. Power Reactors," Albuquerque, NM, September 2006.

STATEMENT OF PROFESSIONAL QUALIFICATIONS OF ROBERT E. MOODY

Current Position

Senior Emergency Preparedness Specialist
Licensing and Regulatory Improvements Branch
Division of Preparedness and Response
Office of Nuclear Security and Incident Response
U.S. Nuclear Regulatory Commission

Education/Certifications

Certification	Incident Investigation Team member, 2003
Certification	Lead Auditor, ASME NQA-1, 1995
Certification	Senior Reactor Operator, 1992
M.S.	The University of Michigan, environmental science/health physics, 1973
License	Reactor Operator, N.S. Savannah, 1970
License	Second Assistant Engineer, U.S. Coast Guard, 1969
B.S.	Maine Maritime Academy, marine engineering, 1968

Professional Affiliations

American Nuclear Society (1993 - present)

Qualifications

Mr. Moody has over 25 years experience in the area of commercial nuclear power with over 15 years in the emergency preparedness area. He has visited more than fifty U.S. nuclear power plants and three international plants. Since joining the NRC in 2000, Mr. Moody has served in several positions primarily in the emergency preparedness area.

Prior to joining the NRC in 2000, Mr. Moody worked in the commercial nuclear power industry in several capacities including employment with the Institute of Nuclear Power Operations for over 12 years, managed his own consulting company for five years, and worked for several other consulting companies as a sub-contractor. Mr. Moody was also employed as a health physicist with the Michigan Department of Public Health for eight years and served as a reactor operator on the N.S. Savannah.

NRC Experience

Emergency Planning Reviews for Early Site Permits. Mr. Moody is the principal reviewer of the emergency preparedness area for the Clinton Early Site Permit application. Responsibilities included preparing the associated Safety Evaluation Report (SER) section related to emergency preparedness. This review evaluated: 1) whether there were any significant impediments to the development of emergency plans for the site, 2) whether the Applicant provided acceptable descriptions of contacts and arrangements made with Federal, State, and local agencies with emergency planning responsibilities, and 3) whether the proposed major features of the proposed emergency plan were acceptable.

Development of a COL Review Template for Emergency Planning. Mr. Moody developed a template to enhance efficiency and consistency when a large number of combined license (COL) applications (expected in FY 2008) may be reviewed by a number of different individuals, including contract personnel. The template also includes all the emergency preparedness regulations (combines the requirements of Appendix E and planning standards in 10 CFR 50.47 for the first time) and current guidance related to emergency preparedness in one document. As part of the development of the template Mr. Moody reviewed over 250 NRC generic communications related to emergency preparedness and identified which ones were current, out-of-date, no longer valid, needed updating, or had been superseded. This final list was included as an attachment to revised Chapter 13.3, "Emergency Planning," to the Standard Review Plan (NUREG-0800)."

Reviews of proposed emergency plan changes. For several years Mr. Moody has performed reviews of many emergency plan change requests from licensees. The proposed changes involve emergency action levels associated with emergency classification, shift staffing and augmentation, and the relocation of emergency response facilities.

Emergency Preparedness Program Inspections. Mr. Moody participated in two in-depth inspections at plants with repeat emergency preparedness program problems.

Revision to Regulatory Guide 1.23, "Onsite Meteorological Programs." Mr. Moody worked with the technical lead to develop a new section specifically related to emergency preparedness.

Project Manager for River Bend. Mr. Moody served as the Project Manager for the River Bend nuclear power plant. His responsibilities included performing acceptance reviews of requested license changes, project management of technical reviews, and planning and conducting public meetings. One emergency plan change request involved the extension of emergency response organization augmentation response times.

Member of the Incident Response Organization. Mr. Moody has served in various positions on the Protective Measures Team, most recently as the Protective Actions Assistant Director.

Private Sector Experience

Consulting Services. Mr. Moody provided consulting services to the commercial nuclear power industry and a Department of Energy facility for seven years as President of his own company and as a subcontractor in the areas of root cause, corrective action, operating experience, and emergency preparedness.

Project Manager/Program Manager at the Institute of Nuclear Power Operations. From 1981 through 1993, Mr. Moody conducted in-depth evaluations of many U. S. and international commercial nuclear power plant emergency preparedness programs, drills and exercises. Mr. Moody periodically performed on-call duties and was responsible for receiving emergency notifications from commercial nuclear power plants and activating INPO's emergency center, when necessary.

Inspecting Industry Emergency Preparedness Programs. Mr. Moody has over six years of experience as a team leader and team member evaluating emergency preparedness programs, drills and exercises. Responsibilities included leading teams of up to eight technical experts, briefing senior utility management, and development of reports.

Emergency Plan Implementation. As an operator and certified SRO, Mr. Moody received emergency preparedness training and implemented the training during drills and exercises. In addition, he also participated in commercial nuclear power plant exercises and drills in the offsite dose assessment area in the State of Michigan emergency operations center.

Supervisor, Emergency Preparedness. Following the accident at TMI, Mr. Moody developed and tested the State of Michigan's Nuclear Facility Emergency Plan. Other responsibilities included supervision of the radiological protection portion of the State's emergency preparedness program, participating in emergency preparedness seminars, staff training, and drill and exercise participation.

Expertise outside the Emergency Preparedness Area. While at INPO for over 12 years, Mr. Moody evaluated U.S. and international commercial nuclear plant operations in the areas of radiological protection, operating experience, corrective action and training. In addition, Mr. Moody has extensive experience teaching root cause courses and conducting root cause investigations.

Documents Related to Emergency Preparedness. Mr. Moody was directly involved in the development of the following documents:

INPO, "Maintaining Emergency Preparedness Manual"

INPO, "Dose Assessment Manual"

INPO, "Analysis of 1990 Significant Events"

NUMARC/NESP-008, "Analysis of Dose Models for Accidental Airborne Radioactive Releases"

STATEMENT OF PROFESSIONAL QUALIFICATIONS OF CLIFFORD G. MUNSON

CURRENT POSITION

Senior Geophysicist
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission

Since joining the NRC in 1995, Dr. Munson has been involved in projects covering a diverse set of seismic related issues. His professional experience includes basic and applied research, and regulatory compliance assessments. His areas of expertise cover a broad spectrum of areas related to the geosciences.

PROFESSIONAL INTERESTS

Seismic Source Characterization
Seismic Ground Motion Modeling
Probabilistic Seismic Hazard Analysis
Site Response Analysis

EDUCATION

B.S.	Brigham Young University, statistics	1987
M.S.	University of Wisconsin - Madison, geophysics	1991
Ph.D.	University of Wisconsin - Madison, geophysics	1995
M.C.E.	Johns Hopkins University, civil engineering	2001

PROFESSIONAL AFFILIATIONS

American Geophysical Union
Seismological Society of America

CURRENT PROJECTS

Seismic and Geologic Site Safety Reviews for Early Site Permits. Lead reviewer for geology, seismology, and geotechnical engineering sections. Three applications for an Early Site Permit (ESP) have been submitted to the Nuclear Regulatory Commission.

Standard Review Plan Update. Lead for update of NUREG-0800, "Standard Review Plan For The Review of Safety Analysis Reports For Nuclear Power Plants," in the areas of geology, seismology, and geotechnical engineering.

Regulatory Guide Development. Key participant for development of new regulatory guide for determining performance-based site-specific earthquake ground motion.

KEY PUBLICATIONS

Munson, C.G. and C.H. Thurber (1997). Analysis of the attenuation of strong ground motion on the island of Hawaii, Bull. Seismol. Soc. Of Am., 87, 945-960.

Munson, C.G., C.H. Thurber, Y. Li, and P.G. Okubo (1995). Crustal shear-wave anisotropy in southern Hawaii: Spatial and temporal variations, J. Geophys. Res., 100, 20367-20377.

Munson, C.G., C.H. Thurber, and Y. Li (1993). Observations of shear-wave splitting on the southeast flank of Mauna Loa Volcano, Hawaii, Geophys. Res. Lett., 20, 1139-1142.

STATEMENT OF PROFESSIONAL QUALIFICATIONS OF PAUL F. PRESCOTT

CURRENT POSITION

Senior Operations Engineer
U.S. Nuclear Regulatory Commission
Office of Nuclear Reactor Regulation
Division of Engineering
Quality and Vendor Branch A

EDUCATION

B. S., Marine Engineering, Maine Maritime Academy, 1979

QUALIFICATIONS

Mr. Paul Prescott joined the U.S. Nuclear Regulatory Commission in 1990 and has over 20 years experience in fossil and nuclear plant operations, maintenance, test and inspection activities. Mr. Prescott has been a senior resident inspector and resident inspector at both PWR and BWR reactor facilities. Mr. Prescott holds a United States Coast Guard combined license as a First Assistant Engineer (steam, unlimited horsepower) and Third Assistant Engineer (diesel, unlimited horsepower).

Mr. Prescott's current activities involve technical support in licensee quality assurance program reviews, vendor inspections and new reactor licensing activities. He assists in technical, policy and program development for the implementation of licensee quality assurance programs. He provides decisions, guidance and assistance in the resolution of issues raised as a result of reviews associated with the development of regulatory guidance and issues.

Specific examples of his activities include: 1) development and execution of quality assurance measures applied to early site permit and combined license activities; 2) providing assistance in the development of SECY 03-117, which outlined the staff's position on use of other international quality assurance standards; 3) work on licensee-specific submissions for changes to existing quality assurance programs; 4) membership and participation in ASME codes and standards committees; 5) development of the quality assurance inspection program for new reactors by participation on the Construction Inspection Program Team, and; 6) providing assistance in the development of a review standard for extended power uprates.

STATEMENT OF PROFESSIONAL QUALIFICATIONS OF JOELLE L. STAREFOS

CURRENT POSITION

Senior Project Manager
Division of New Reactor Licensing
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission

EDUCATION

M.P.A. Master of Public Administration, American University, Washington, DC, 2006
B.S. Mathematics, University of Massachusetts-Dartmouth, North Dartmouth, MA, 1991
B.S. Mechanical Engineering, University of Massachusetts-Dartmouth, 1991

QUALIFICATIONS

In 1991, Ms. Starefos joined the NRC in the Region II Office in Atlanta, Georgia. After completing several rotational assignments, including nine months at the Vogtle Electric Generating Plant resident inspectors' office, she qualified as a pressurized water reactor operations inspector. She held numerous positions of increasing responsibility in Region II, including Project Engineer for three commercial reactor sites, Resident Inspector assigned to pressurized water reactor and boiling water reactor plants for nearly seven years, and two Senior Resident Inspector rotational assignments.

In 2002, Ms. Starefos was promoted to Project Manager as a member of the AP1000 design certification project team in the Office of Nuclear Reactor Regulation; within a year she was further promoted to Senior Project Manager for the new reactors effort in NRC Office of Nuclear Regulatory Research (RES). Subsequently, in May of 2004, she was selected as the Technical Assistant to the Director of the Division of Safety Analyses and Regulatory Effectiveness within RES. As the technical assistant, she was responsible for coordination of work associated with the division's budget and operating plan and has been an advisor to the division's Director on project management issues.

Ms. Starefos has been a key contributor in numerous high-profile assignments during her career with the NRC, including work on the Institutionalizing Agency Lessons Learned Task Force 2006, the NRC's Davis-Besse Lessons Learned Task Force in 2002, and the Hatch Augmented Inspection Team in 2000.

Ms. Starefos concurrently earned a Bachelor of Science degree in Mechanical Engineering and a Bachelor of Science degree in Mathematics at the University of Massachusetts-Dartmouth in 1991, and a Master of Public Administration degree at American University in 2006. She began her Federal career with the Department of the Navy and has contributed over 17 years of Federal government service.

AWARDS

Ms. Starefos has received numerous performance and special act awards while working at the NRC. She is also a member of Pi Alpha Alpha, the National Honor Society for Public Affairs and Administration.

STATEMENT OF PROFESSIONAL QUALIFICATIONS OF ALBERT N. TARDIFF

CURRENT POSITION

Security Specialist
U.S. Nuclear Regulatory Commission
Office of Nuclear Security and Incident Response
Division of Security Policy
Reactor Security Branch

EDUCATION

B.S. Chemical Engineering, University of Maryland, College Park, MD, 1985

QUALIFICATIONS

Mr. Albert Tardiff joined the U.S. Nuclear Regulatory Commission in 2000 and has over 20 years experience in chemical/biological physical protection, nuclear material measurements, and nuclear material/facility physical protection. Mr. Tardiff currently serves as a security specialist in the New Reactor Security Team. As part of this assignment, he initiated the development of the cyber security program for the U.S. nuclear power reactor fleet and conducted security-related spent fuel pool studies. Mr. Tardiff was also responsible for the development of the security-related elements of the scope of review for design certification and early site permit applications and is currently helping to develop the scope of review for combined license applications.

Mr. Tardiff is assisting in the development of the new security assessment rule for design certification and combined license applications.

Mr. Tardiff managed a study to identify the physiological effects of blast overpressures and the resultant loss in combat effectiveness.

Mr. Tardiff developed and manages the interagency agreement between the Office of Nuclear Security and Incident Response and the U.S. Army Corps of Engineers. This agreement focuses on the development of blast effects guidance and vehicle threat protection measures. He also participates in the interagency Counter Terrorism Technical Support Office's Technical Support Working Groups (both the Physical Protection and Infrastructure Protection subgroups).

Mr. Tardiff is assisting the International Atomic Energy Agency in the development of the sections of its new Security Series guidance documents dealing with the design and evaluation of physical protection systems to protect against radiological sabotage.

PATENT RECEIVED

Multilayer Protective Gas Mask, patent number 5,181, 506, January 26, 1993