

PETITIONERS' HEARING REQUEST AND WAIVER PETITION

ATTACHMENT 1

MITMAN DECLARATION

EXHIBIT 1

MITMAN DECLARATION

EXHIBIT 2

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
BEFORE THE SECRETARY

In the Matter of)	
Duke Energy Carolinas, LLC)	Docket Nos. 50-269/270/287 SLR
Oconee Nuclear Station,)	
Units 1, 2 & 3)	

**DECLARATION OF JEFFREY T. MITMAN
IN SUPPORT OF BEYOND NUCLEAR AND SIERRA CLUB HEARING REQUEST**

Under penalty of perjury, I, Jeffrey T. Mitman declare:

1. My name is Jeffrey T. Mitman. By education and experience, I am a nuclear engineer, with a significant level of expertise in risk analysis.
2. I have been retained by Beyond Nuclear, Inc. and the Sierra Club to evaluate the Environmental Report submitted by Duke Energy Corp. in connection with its subsequent license renewal (SLR) application to the U.S. Nuclear Regulatory Commission (NRC) for 20-year extension of the license terms for the Oconee Nuclear Plant, Units 1, 2 and 3 (Oconee). My expert report on the application, entitled *NRC Relicensing Crisis at Oconee Nuclear Station: Stop Duke From Sending Safety Over the Jocassee Dam* (September 2021), is attached to my declaration as Exhibit 1. I understand that Beyond Nuclear and the Sierra Club intend to submit a hearing request and waiver petition in this proceeding, based on my expert report.
3. As set forth in my attached Curriculum Vitae (Exhibit 2), I have more than 40 years of experience in the nuclear industry and 16 years as a regulator with the NRC. My experience includes 16 years on the technical staff of the NRC as a Reliability and Risk Analyst. For the past 15 years, I have served as Senior Reliability and Risk Analyst, with significant responsibility for managing a number of risk analysis projects and teams.
4. During my employment in the nuclear industry and NRC, I became very familiar with NRC regulations and guidance regarding nuclear power plant safety, and with the application of risk analysis to reactor safety analysis. I am also generally familiar with the NRC's conceptual approach to the analysis of Severe Accident Mitigation (SAMA) alternatives in the context of reactor license renewal.
5. As an NRC Staff member, I participated in some NRC safety reviews and performed risk analysis for Oconee, including reviews related to the risk to Oconee posed by potential failure of the upstream Jocassee Dam. I also participated in a generic study by NRC of dam failure risk, with particular application to Oconee.
6. I am familiar with correspondence between Duke Energy Corp. (Duke) and the NRC regarding Oconee's design and operation, including NRC Staff technical reports. I am

**Beyond Nuclear and Sierra Club Hearing Request
Attachment 1**

also familiar with the Environmental Reports submitted by Duke in connection with its initial license renewal application in 1998, and its subsequent license renewal (SLR) application in June 2021.

7. The factual statements in my expert report are true and correct to the best of my knowledge, and the opinions stated therein are based on my best professional judgment.



Jeffrey T. Mitman

9/27/2021

Date

CURRICULUM VITAE FOR JEFFREY T. MITMAN

Rockville, MD

Project Management / PRA Position in the Nuclear Industry

QUALIFICATIONS

Senior Reliability and Risk Analyst with more than 35 years experience in the Nuclear Industry. Responsible for managing risk analysis projects and teams. Solid record of bringing projects in on schedule and budget.

MAJOR ACCOMPLISHMENTS

- Transitioned NRC to detailed PRA models for low power and shutdown significance determinations process evaluations.
- Guided development of and managed industry's first configuration risk management software tool.
- Obtained regulatory approval of EPRI's RI-ISI methodology.
- Managed first PRA of bolted spent fuel storage cask.

EXPERIENCE

US NUCLEAR REGULATORY COMMISSION (Rockville, MD) 2005 - 2021

Senior Reliability and Risk Analyst (NRC Office of Nuclear Reactor Regulation)

- Conducted Significance Determination Process (SDP) evaluations of reactor events including development and/or modification of required models.
- Lead analyst for low power and shutdown event issues and concerns.
- Guided development of shutdown Standardized Plant Analysis Risk (SPAR) models.
- Conducted Human Reliability Analysis (HRA).
- Evaluated external event risk from dam failures.
- Participated in post NRC's Fukushima NTTF flooding guidance development.
- Developed NRC's guidance on crediting FLEX in risk-informed regulatory applications.
- Advised NRC NFPA-805 team on issues related to shutdown fire risk.
- Performed evaluations of risk informed license applications.

Reliability and Risk Analyst (NRC Office of Nuclear Regulatory Research)

- Project Manager for the development of shutdown SPAR models

ERIN ENGINEERING AND RESEARCH, INC. (Walnut Creek, CA) 2004 - 2005

Lead Senior Engineer

- Configuration risk management evaluation of at-power fire risk.
- Configuration risk management evaluation of loss of offsite power.

ABE STAFFING SERVICES (Palo Alto, CA) 2003 - 2005

Consultant to EPRI

- Brought project to closure involving Dry Cask Storage PRA project and team, involving Transnuclear bolted cask containing PWR fuel.

EPRI (Palo Alto, CA) 1998 - 2003

Project Manager

- **Outage Risk Assessment and Management (ORAM-Sentinel):** Grew first of a kind software application for performing configuration risk management in nuclear power plants.
 - Conducted research in low power and shutdown risk; shutdown initiating event and event frequency derivation.
 - Delivered multiple versions (including alpha, beta & production), testing and full documentation.
 - Administered utility user group, marketing, contract preparation, technology transfer, technical report publication and training.
 - Actively managed both development and application contracts with multiple suppliers and customers. Managed annual \$1M budget.

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- **Dry Cask Storage PRA:** Initiated innovative analysis of Transnuclear cask containing PWR fuel.
 - Managed unique team with diverse experience in both cask design and PRA backgrounds.
 - **Risk Informed In-service Inspections Project (RI-ISI):** Lead team in obtaining regulatory approval of methodology to safely reduce piping weld inspection requirements using combination of probabilistic and degradation analysis.
 - Responsible for methodology finalization and acceptance by industry and U.S. NRC.
 - Conducted marketing, sales, contract preparation, technology transfer, training and technical report publication.
 - Actively managed both development and application contracts with both suppliers and customers. Managed annual \$1M budget.
 - **Human Reliability Analysis Project:** Managed project to bring consistency to on industry use of HRA methods.
 - Responsible for EPRI HRA area, including development of HRA Calculator software and establishment of associated users group.

ERIN ENGINEERING AND RESEARCH, INC. (Palo Alto, CA)

1992 - 1998

Lead Senior Engineer

Collaborated with EPRI ORAM-SENTINEL Project Manager in project development and administration, user group administration, contract preparation, technology transfer workshops, technical report generation and editing. Performed ORAM analysis of the Diablo Canyon plant. Performed ORAM Probabilistic Analysis of Perry spent fuel pool. Drafted and edited ORAM V2.0 User's Manual. Assisted in ORAM-SENTINEL software design, performed software debugging. Principle researcher and author of BWR outage contingency report. Prepared marketing and training, materials.

ABB IMPELL CORPORATION (King of Prussia, PA)

1990 - 1992

Lead Senior Engineer

- **Design Basis Documentation:** directed team of three engineers to review PECO Feedwater System Design. Wrote Design Basis Documentation reports for Limerick and Peach Bottom power plants, identifying licensing and design concerns by reviewing the system design as documented in drawings, calculations, vendor manuals, Technical Specifications, UFSAR, SER, SRP, 10CFR50.59 safety evaluations etc. and by interfacing with utility engineering personnel. Prepared Engineering Change Requests as necessary.
- **Shift Outages:** during Limerick Nuclear Power Plant refueling / maintenance outage. Coordinated all shift maintenance work and testing. Collaborated with all groups in power plant, allocating resources as needed to maintain schedule and reporting to senior plant outage management. Performed system reviews prior to placing them back in service. Conducted shift outage meetings. Tracked work group performance against schedule. Advised utility management on techniques for schedule and outage organizational improvements.

GENERAL ELECTRIC COMPANY (San Jose, CA)

Experience Prior to 1990

Startup-Test Engineer

- **Shift Startup Engineer:** During power ascension phase coordinated all system testing on shift and startup interface with operations. During preoperational phase, acted as operations shift supervisor responsible for coordinating all system testing and flushing on shift from main control room. Updated senior utility management daily on testing status.
- **Additional positions:** Shift Technical Advisor, Test Engineer, Lead QC / Welding Inspector

EDUCATION / PROFESSIONAL DEVELOPMENT

- BSE, Nuclear Engineering, University of Michigan, Ann Arbor, MI
- Introductory VBA class, University of California, Berkeley, CA
- Misc. business courses at various colleges and universities
- Senior Reactor Operator Certified
- GE Station Nuclear Engineering
- Effective Utilization of PSA, ERIN Engineering & Research, Walnut Creek, CA.

PROFESSIONAL ASSOCIATIONS

- American Nuclear Society (ANS) member since 1978
- ANS Risk Informed Standards Committee (RISC)
- ANS Risk Informed Standards Writing Group on Shutdown PRA Standard
- ASME Section XI, Working Group on Implementation of Risk Based Examination
- MIT Professional Summer Programs Guest Lecturer at Risk-Informed Operational Decision Management Course

Reports and Papers

by

Jeffrey T. Mitman

As of September 2021

Papers:

1. Technical Challenges Associated with Shutdown Risk when Licensing Advanced Light Water Reactors, PSAM12 2014. Co-author.
2. Potentially Non-conservative Screening Value for Dam Failure Frequency in PRA, US NRC Information Notice 2012-02 (ML090510269). Co-author and technical point of contact.
3. Comparing Various HRA Methods to Evaluate Their Impact on the results of a Shutdown Risk Analysis during PWR Reduced Inventory, PSAM11 2012. Co-author.
4. Uncertainty Analysis for Large Dam Failure Frequencies Based on Historical Data, PSAM11 2012. Co-author.
5. An Assessment of Large Dam Failure Frequencies Based on US Historical Data, PSA 2011. Co-author.
6. Generic Failure Rate Evaluation for Jocassee Dam, US NRC (ML13039A084), 2010. Co-author.
7. Development of PRA Model for BWR Shutdown Modes 4 and 5 Integrated in SPAR Model, to be presented at PSAM10 2010. Co-author.
8. Development of Standardized Probabilistic Risk Assessment Models for Shutdown Operations Integrated in SPAR Level 1 Model, PSAM9 2008. Co-author.
9. Probabilistic Risk Assessment of Bolted Dry Spent Fuel Storage Cask, Presented at ICONE12. 2004. Co-author.
10. Low Power and Shutdown Risk Assessment Benchmarking, Presented at PSA 02 2002. Co-author.
11. EPRI Human Reliability Analysis Guidelines, Presented at PSA 02 2002. Co-author.
12. Derivation of Shutdown Initiating Event Frequencies, Presented at PSAM5 2000. Co-author.
13. Quantitative Assessment of a Risk Informed Inspection Strategy for BWR Weld Overlays, Presented at ICONE 8 2000. Co-author.
14. EPRI RI-ISI Methodology and the Risk Impacts of Implementation, Presented at SMiRT 11 1999. Co-author.
15. Application of Markov Models and Service Data to Evaluate the Influence of Inspection on Pipe Rupture Frequencies published. PVP 1999. Co-author.
16. Progress in Risk Evaluation of Outages, International Conference on the Commercial and Operational Benefits of PSA. 1997. Co-author.
17. Control of Reactor Vessel Temperature/Pressure during Shutdown, GE SIL 357. June 1981. Co-author.

Software:

1. HRA Calculator Version 2.0, EPRI 2003. 1003330. Project Manager (PM).
2. ORAM-Sentinel Version 3.4, EPRI 2001. 1002958. PM and co-author.

Reports/Standards:

1. "Requirements for Low Power and Shutdown PRA - ANS/ASME-58.22-2014 (Trial Use Standard)."
2. "Probabilistic Risk Assessment (PRA) of Bolted Storage Casks: Quantification and Analysis Report," EPRI 2003. 1002877. PM.
3. "Low Power and Shutdown Risk Assessment Benchmarking Study," EPRI, Palo Alto, CA and U.S. DOE. 2002. 1003465. PM and principal investigator.
4. "Dry Cask Storage PRA Scoping Study," EPRI 2002. 1003011. PM.
5. "Guidance for Incorporating Organizational Factors into Nuclear Power Plant Risk Assessments: Phase 1 Workshop." EPRI and U.S. DOE 2002. 1003322. PM.
6. "An Analysis of Loss of Decay Heat Removal Trends and Initiating event Frequencies (1989-2000)": EPRI 2001. 1003113. PM.
7. "Piping System Failure Rates and Rupture Frequencies for Use in Risk Informed In-service Inspection Applications": TR-111880-NP, EPRI 2000. 1001044. PM
8. "Application of Risk-Informed Inservice Inspection Alternative Element Selection Criteria." EPRI, Charlotte NC: 2000. TE-11482. PM.
9. "Revised Risk-Informed Inservice Inspection Evaluation Procedure," EPRI 1999. TR-112657 Revision B-A. PM & co-author.
10. "Piping System Failure Rates and Rupture Frequencies for Use in Risk Informed In-service Inspection Applications," EPRI 1999. TR-111880. PM
11. "Comparison between EDF and EPRI of Pipe Inspection Optimization Methods," EPRI Palo Alto, CA; Electricite de France, Paris, France: 1999. TR-113315. PM.
12. "Economic Feasibility Study of Implementing RBISI at 2-loop PWR," EPRI 1998. TR-107613. PM.
13. "Evaluation of Pipe Failure Potential via Degradation Mechanism Assessment," EPRI Palo Alto, CA: 1998. TR-110157. PM.
14. "Piping Failures in U.S. Nuclear Power Plants: 1961-1997," EPRI 1998. TR-110102. PM.
15. "Piping System Reliability Models and Database for used in Risk Informed Inservice Inspection Applications," EPRI 1998. TR-110161. PM.
16. "Use of Risk Informed Inspection Methodology for BWR Class 1 Piping," EPRI 1998. TR-110701. PM.
17. "ORAM v4.0 Functional Specification Outline," EPRI 1999. TR-111652. PM.
18. "Survey on the Use of Configuration Risk and Safety Management Tools at NPPs," EPRI, 1998. TR-102975. PM.
19. "ORAM-SENTINEL Demonstration at Diablo Canyon," EPRI 1998. TR-110739. PM.
20. "ORAM-SENTINEL Development at Indian Point 3," EPRI 1999, TR-110716. PM.
21. "ORAM-SENTINEL Development and ORAM Integration at Oconee," EPRI 1998. TR-111207. PM.
22. "ORAM-SENTINEL Development at Fitzpatrick," EPRI 1998. TR-110505. PM.
23. "ORAM-SENTINEL Demonstration at Sequoyah," EPRI 1998. TR-110771. PM.
24. "SENTINEL Technical Basis Report for Limerick," EPRI 1998. TR-108953. PM.
25. "Outage Risk Assessment and Management Implementation at Fermi 2," EPRI 1997. TR-109013. Co-author.
26. "Contingency Strategies for BWRs during Potential Shutdown Operations Events," EPRI 1993. TR-102973. Principal investigator.
27. "Generic Outage Risk Management Guidelines for BWRs," EPRI 1993. TR-102971. Co-principal investigator.

PETITIONERS' HEARING REQUEST AND WAIVER PETITION

ATTACHMENT 2A

DATE _____

PETITIONERS' HEARING REQUEST AND WAIVER PETITION

ATTACHMENT 2B

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
BEFORE THE SECRETARY

<u>In the Matter of</u>)	
Duke Energy Carolinas, LLC)	Docket Nos. 50-269/270/287 SLR
Oconee Nuclear Station,)	
<u>Units 1, 2 and 3</u>)	

DECLARATION OF FRANK M. POWELL

Under penalty of perjury, Frank M. Powell declares as follows:

- 1) My name is Frank M. Powell. I am a member of the Sierra Club.
- 2) I live at 1098 Doug Hollow Road, Seneca, SC 29672.
- 3) My home is located within the 50-mile emergency planning zone (EPZ) of the Oconee Nuclear Power Station, for which Duke Energy Carolinas LLC (Duke) has submitted an application to the U.S. Nuclear Regulatory Commission for the Subsequent License Renewal of its operating license. All three Oconee units have previously received a 20-year license extension on their original 40-year operating licenses.
- 4) Based on the historical experience of nuclear power stations, I believe that these facilities are inherently dangerous. Continued operations of Oconee Nuclear Power Station for an additional 20 years beyond the three reactors' current license expiration dates could cause a severe nuclear accident in the reactor(s) and/or irradiated fuel storage pool(s) thereby causing death, injury, illness, dislocation, and economic damage to me and my family. It could also cause devastating environmental damage.
- 5) I believe that Duke's application to extend operations of Oconee Nuclear Station from 60 to 80 years is inadequate to reasonably assure the protection of my health, safety and the environment. Therefore, I have authorized the Sierra Club to represent my interests in this proceeding.

Frank M. Powell

Frank M. Powell

9/21/21

DATE

PETITIONERS' HEARING REQUEST AND WAIVER PETITION

ATTACHMENT 2C

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
BEFORE THE SECRETARY


In the Matter of)
Duke Energy Carolinas, LLC)
Oconee Nuclear Station,)
Units 1, 2 & 3)

Docket Nos. 50-269/270/287 SLR

DECLARATION OF ROSELLEN ALEGUIRE

Under penalty of perjury, Rosellen Aleguire declares as follows:

- 1) My name is. Rosellen Aleguire. I am a member of the Sierra Club.
- 2) I live at 145 Gladys Circle, Fair Play, SC 29643.
- 3) My home is located within the 50-mile emergency planning zone (EPZ) of the Oconee Nuclear Power Station, for which Duke Energy Carolinas LLC (Duke) has submitted an application to the U.S. Nuclear Regulatory Commission for the Subsequent License Renewal of its operating license. All three Oconee units have previously received a 20-year license extension on their original 40-year operating licenses.
- 4) Based on the historical experience of nuclear power stations, I believe that these facilities are inherently dangerous. Continued operations of Oconee Nuclear Power Station for an additional 20 years beyond the three reactors' current license expiration dates could cause a severe nuclear accident in the reactor(s) and/or irradiated fuel storage pool(s) thereby causing death, injury, illness, dislocation, and economic damage to me and my family. It could also cause devastating environmental damage.
- 5) I believe that Duke's application to extend operations of Oconee Nuclear Station from 60 to 80 years is inadequate to reasonably assure the protection of my health, safety and the environment. Therefore, I have authorized the Sierra Club to represent my interests in this proceeding.



Rosellen Aleguire

09/23/2021

DATE

PETITIONERS' HEARING REQUEST AND WAIVER PETITION

ATTACHMENT 3

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
BEFORE THE SECRETARY

In the Matter of)	
Duke Energy Carolinas, LLC)	Docket Nos. 50-269/270/287 SLR
Oconee Nuclear Station,)	
Units 1, 2 & 3)	

**DECLARATION OF DIANE CURRAN IN SUPPORT OF
PETITION FOR WAIVER OF 10 C.F.R. §§ 51.53(c)(3)(i), 51.53(c)(ii)(L), 51.71(d),
51.95(c)(1), AND 10 C.F.R. SUPBART A, APPENDIX B, TABLE B-1 TO ALLOW
CONSIDERATION OF CATEGORY 1 NEPA ISSUES AND SAMA ISSUES**

Under penalty of perjury, I, Diane Curran state as follows:

1. I am an attorney for Petitioners Beyond Nuclear, Inc. and Sierra Club, Inc. in the above-captioned subsequent license renewal proceeding.
2. I am qualified by my legal training and professional experience as an expert on the Atomic Energy Act, the National Environmental Policy Act (“NEPA”), judicial opinions interpreting those statutes, and regulations and decisions of the U.S. Nuclear Regulatory Commission (“NRC”) interpreting those statutes. My expertise extends to NRC regulations and decisions regarding reactor license renewal and subsequent license renewal. I also have a general understanding of technical issues related to nuclear reactor safety and environmental impact analysis, at a level that is sufficient for me to make a reasonable evaluation of NRC technical correspondence and reports on safety and environmental issues.
3. My legal training consists of a Juris Doctor degree from the University of Maryland. My professional experience consists of more than 35 years of providing legal representation to citizen groups and state and local governments in NRC licensing and enforcement proceedings, including license renewal proceedings and subsequent license renewal proceedings.
4. The purpose of my declaration is to support Petitioners’ Petition for Waiver of 10 C.F.R. §§ 51.53(c)(3)(i), 51.53(c)(ii)(L), 51.71(d), 51.95(c)(1), and 10 C.F.R. Part 51, Subpart A, Appendix B, Table B-1 to Allow Consideration of Category 1 NEPA Issues (“Waiver Petition”). The Petition is presented in Section V of Hearing Request and Petition to Intervene by Beyond Nuclear and the Sierra Club (Sept. 27, 2021) (“Hearing Request”), which has been submitted to the NRC.
5. I am responsible for the contents of the Waiver Petition, including its assertion that application of the regulations from which Petitioners seek an exemption would not serve the purposes for which the rules were adopted. I am also responsible for identifying, with particularity, the specific aspects of the subject matter of this proceeding that should be

considered in a full environmental analysis that is compliant with the procedural requirements of the National Environmental Policy Act (“NEPA”).

6. The factual assertions in the Waiver Petition and Hearing Request are based on the expert opinion of Mr. Jeffrey Mitman, as set forth in his Declaration (Attachment 1 to Petitioners’Hearing Request) and his Expert Report, NRC Relicensing Crisis at Oconee Nuclear Station: *Stop Duke From Sending Safety Over the Jocassee Dam* (Sept. 2021) (Exhibit 1 to Mr. Mitman’s Declaration). Mr. Mitman’s Expert Report, in turn, is based on publicly available documents generated by Duke Energy Corp. (“Duke”) and the NRC.
7. I have no reason to question the veracity of the facts recited by Mr. Mitman or the reliability of his expert opinion. Thus, my representation of the content of his Expert Report and the documents he relies on is true and correct to the best of my knowledge. And the legal opinions expressed in the Waiver Petition are based on my best professional judgment.



Diane Curran

September 27, 2021