

Blue Ridge Environmental Defense League

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August 10, 2016

The Honorable Ronald J. Spritzer, Chairman
Atomic Safety Licensing Board
Nuclear Regulatory Commission
Washington, DC

RE: Docket Nos. 52-025-LA-2 and 52-026-LA-2

Dear Chairman Spritzer:

In response to the invitation by the Atomic Safety and Licensing Board to provide further information on the qualifications of its technical expert Arnold Gundersen, the Petitioner, Blue Ridge Environmental Defense League, hereby submits the information and this letter of objection to the request.¹ Please find a supplementary declaration regarding his qualifications attached to this letter.

Although we are supplying the requested information, Petitioner hereby objects to the importuning of its technical expert by Administrative Judge Gary S. Arnold during the oral argument as an untimely and improper challenge of Mr. Gundersen's expertise.

Federal rules state that "A witness who is qualified as an expert by knowledge, skill, experience, training, or education may testify in the form of an opinion or otherwise..."² Gundersen has submitted an extensive curriculum vitae and a declaration in support of the Petitioner's contentions. A cursory reading of Arnold Gundersen's CV will show *inter alia* that he was honored in Senate testimony by then-NRC Chairman Ivan Selin, who stated, "It is true...everything Mr. Gundersen said was absolutely right; he performed quite a service."³

As the record and the attached declaration shows, Mr. Gundersen is qualified. He is also necessary to the decision-making process of this Board. As a decision-making body, the ASLB must confront the facts and legal arguments presented by the parties and articulate the reasons for its conclusions on disputed issues; i.e., it must take a hard look at the salient problems.⁴ Moreover, the Board has a duty not only to resolve contested issues, but also to articulate in reasonable detail the basis for the course of action chosen. A Board must do more than reach conclusions; it must confront the facts.⁵ Without the experience and expertise of Mr. Gundersen, the Board would be flying on one wing, relying only upon the applicant for its source of information.

¹ On August 3, 2016, the Atomic Safety and Licensing Board held oral arguments via audio-video teleconference in the matter of License Amendments in Dockets No. 52-025-LA-2 and 52-026-LA-2. The invitation to provide further information was granted to Petitioners by Chairman Spritzer.

² Federal Rules of Evidence, Article VII. Opinions and Expert Testimony, Rule 702. Testimony by Expert Witnesses

³ Gundersen curriculum vitae, page 12

⁴ See *Union Elec. Co. (Callaway Plant, Unit 1)*, ALAB-740, 18 NRC 343, 366 (1983), citing *Seabrook*, ALAB-422, 6 NRC at 41; *Pac. Gas & Elec. Co. (Diablo Canyon Nuclear Power Plant, Units 1 & 2)*, ALAB-781, 20 NRC 819, 836 (1984), *aff'd in part LBP-82-70*, 16 NRC 756 (1982).

⁵ See *La. Power & Light Co. (Waterford Steam Electric Station, Unit 3)*, ALAB-732, 17 NRC 1076, 1087 n.12 (1983), citing *Pub. Serv. Co. of New Hampshire (Seabrook Station, Units 1 & 2)*, ALAB-422, 6 NRC 33, 41 (1977), *aff'd*, CLI-78-1, 7 NRC 1 (1978), *aff'd sub nom.*, *New England Coalition on Nuclear Pollution v. NRC*, 582 F.2d 87 (1st Cir. 1978).

Although visible during oral argument, Mr. Gundersen was not allowed to speak. The challenge to the expertise of any person prohibited from responding is plainly unfair. Moreover, the scope of Licensing Boards is limited to the matters properly noticed and made available to all parties in the matter. The Board's order of June 16, 2016, states "The Board intends to conduct oral argument on standing and contention admissibility...." The issues of standing and admissibility do not extend to challenges of expert witnesses. A Licensing Board does not have the power to explore matters beyond those which are embraced by the Notice of Hearing for the particular proceeding.⁶ This holding applies to the oral arguments held on August 3rd. Petitioners were prepared to argue standing and admissibility, not the merits of the contentions. In light of the above, the questions challenging Gundersen's expertise were out of bounds.

Petitioner has followed requirements for bringing a technical expert to the extant proceeding. Significantly, no challenges to Mr. Gundersen's expertise were proffered by parties to this case, representatives of Southern Nuclear Operating Company or the NRC Staff, either in writing or during oral argument. Rather, it was Judge Arnold who leveled the questions more properly put during an evidentiary hearing but raised prematurely at oral argument on August 3.⁷ Further, the questioning was tendentious. As you know, 10 C.F.R. § 2.313(b) allows a litigant to move to disqualify a member of the Atomic Safety and Licensing Board. While Petitioners are not moving so here, the conduct observed on August 3rd gave the appearance of personal bias or prejudgment of factual issues.⁸

In conclusion, since 1972 Mr. Gundersen has been an accepted expert witness before the Nuclear Regulatory Commission and its hearing boards and panels, including and not limited to the Atomic Safety and Licensing Board and the Advisory Committee on Reactor Safeguards. A supplementary declaration submitted by Maggie Gundersen regarding his qualifications is attached to this letter. Blue Ridge Environmental Defense League objects to the unfair and untimely criticism of our technical expert's qualifications. We have been diligent in securing qualified expert testimony to present to the Board in this matter.

Respectfully,



Louis A. Zeller, Executive Director

Attachment

⁶ See Portland Gen. Elec. Co. (Trojan Nuclear Plant), ALAB-534, 9 NRC 287, 289-90 n.6 (1979); Pub. Serv. Co. of Ind. (Marble Hill Nuclear Generating Station, Units 1 & 2), ALAB-316, 3 NRC 167, 170-71 (1976). See also Northern Ind. Pub. Serv. Co. (Bailly Generating Station, Nuclear-1), ALAB-619, 12 NRC 558, 565 (1980); Commonwealth Edison Co. (Zion Station, Units 1 & 2), ALAB-616, 12 NRC 419, 426 (1980); Metro. Edison Co. (Three Mile Island Nuclear Station, Unit 1), LBP-83-76, 18 NRC 1266, 1269, 1286 (1983).

⁷ For example, Judge Arnold said, "I have a few questions concerning your expert witness.... You see, the reason I have this question is, you've stated that there was a new hazard and you've based it entirely upon an expert witness opinion that I haven't seen any support for his opinion. And, I'm trying to determine his qualifications." Official Transcript of proceedings, Docket No. 52-025-LA-2 and 52-026-LA-2, Wednesday, August 3, 2016, Pages 37, 39.

⁸ See Consumers Power Co. (Midland Plant, Units 1 & 2), ALAB-101, 6 AEC 60 (1973),

**BEFORE THE NUCLEAR REGULATORY COMMISSION ATOMIC SAFETY
AND LICENSING BOARD (ASLB)**

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Blue Ridge Environmental Defense)	
League (BREDL))	
Petitioners,)	
)	August 10, 2016
v.)	
)	
United States Nuclear Regulatory)	
Commission,)	
Respondents		

In the Matter of
Southern Nuclear Operating Company
License Amendment Application for
Combined Licenses NPF-91 and NPF-92
Vogtle Electric Generating Plant Units 3 and 4
Docket Nos. 052-00025 and 052-00026;
NRC-2008-0252-0057
ASLBP No. 16-946-02-LA-BD01

DECLARATION OF MARGARET GUNDERSEN,
FOUNDER AND PRESIDENT FAIREWINDS ASSOCIATES, INC

I, Margaret Gundersen, hereby declare under penalty of perjury as follows:

1. I am the president of Fairewinds Associates, Inc, paralegal services and expert witness testimony, which I founded in 2003 and incorporated in 2005.
 - 1.1. Fairewinds Associates, Inc is a paralegal services and expert witness firm specializing in scientific analysis of nuclear power engineering, safety, and reliability issues in administrative hearings and in civil litigation. Our clients are attorneys, state legislatures, non-profit organizations, and intervenors, in the U.S. and internationally.
 - 1.2. Fairewinds Associates, Inc conducts technical and legal research, prepares reports, testifies, prepares other experts to testify, and prepares documents for public release, court filings, legislative testimony, and administrative hearings.

- 1.3. Formerly, I was a nuclear industry employee and executive recruiter for the atomic power industry from 1976 to 1982.
 - 1.3.1. I was employed by an independently owned firm in Hartford, CT that conducted executive recruiting for the nuclear industry up to VP level.
 - 1.3.2. I was the Public Information Specialist at a New York State Electric and Gas (NYSE&G) proposed nuclear power plant site in Oswego, NY – corporate representative and liaison with local media, state and local officials, site geologists, meteorologists, engineers, and others conducting site environmental studies.
 - 1.3.3. I served as an Engineering Assistant – in nuclear fuel reload core design for the former CT nuclear engineering vendor Combustion Engineering in Windsor, CT.
2. In my capacity as a paralegal and the president of Fairewinds Associates, I also interview and retain expert witnesses, help experts prepare reports that are understandable to the average person as well as to judge and juries, analyze expert reports from other parties and prepare deposition questions for plaintiff attorneys depositions.
3. Finally, as an independent small business owner, I also oversee invoicing and payables, write and review contracts, and oversee all of Fairewinds contracted IT work.
4. Additionally, I have served as a professional Mediator in Small Claims Court and with private clients, and I am the founder and current President of Fairewinds Energy Education 501(3)3.
5. Education: I am certified in Mediation and Conflict Resolution from Champlain College, Burlington, VT in Basic Mediation 3-2010; Advanced Certification 3-2011. I earned my BS in Law and Society, from Skidmore College, Saratoga Springs, NY.

6. I received my Paralegal Certificate from Burlington College, Burlington, VT in September 2003 with a 4.0 GPA earned via one-year 36-credit Paralegal Certificate Program 2002-2003 for which I was the recipient of the Vermont Paralegal Organization Scholarship.
7. I am making this Declaration in my capacity as the president, founder, and paralegal for Fairewinds Associates, Inc, and in this capacity I attest to the role of Arnold Gundersen, chief engineer for Fairewinds Associates, Inc. regarding his credentials and testimony for the ASLBP No. 16-946-02-LA-BD01 process as requested during the posted and *scheduled oral argument* before the Nuclear Regulatory Commission (NRC) Atomic Safety and Licensing Board (ASLB) for the Blue Ridge Environmental Defense League.
8. Mr. Gundersen is currently out of the country presenting at a forum at McGill University in Montreal, Canada.

Mr. Gundersen's Credentials:

9. Mr. Gundersen earned his Bachelor Degree in Nuclear Engineering from Rensselaer Polytechnic Institute (RPI) cum laude. He earned his Master Degree in Nuclear Engineering from RPI via an Atomic Energy Commission Fellowship. Cooling tower operation and cooling tower plume theory were his area of study for his Master Degree in Nuclear Engineering.
10. Mr. Gundersen began his career as a reactor operator and instructor in 1971 and progressed to the position of Senior Vice President for a nuclear licensee prior to becoming a nuclear engineering consultant and expert witness. Mr. Gundersen's Curriculum Vitae is Attachment 1.
11. Mr. Gundersen has testified as an expert witness to the Nuclear Regulatory Commission (NRC) Atomic Safety and Licensing Board (ASLB) and Advisory

Committee on Reactor Safeguards (ACRS), in Federal Court, the State of Vermont Public Service Board, the State of Vermont Environmental Court, and the Florida Public Service Commission, as well as to the Canadian Nuclear Safety Commission.

12. Mr. Gundersen is an author of the first edition of the Department of Energy (DOE) Decommissioning Handbook.
13. Mr. Gundersen has more than 45-years of professional atomic power experience *including and not limited to*: Cooling Tower Operation, Cooling Tower Plumes, Consumptive Water Loss, Nuclear Plant Operation, Nuclear Management, Nuclear Safety Assessments, Reliability Engineering, In-service Inspection, Criticality Analysis, Licensing, Engineering Management, Thermohydraulics, Radioactive Waste Processes, Decommissioning, Waste Disposal, Structural Engineering Assessments, Nuclear Fuel Rack Design and Manufacturing, Nuclear Equipment Design and Manufacturing, Prudency Defense, Employee Awareness Programs, Public Relations, Contract Administration, Technical Patents, Archival Storage and Document Control, Source Term Reconstruction, Dose Assessment, Whistleblower Protection, and NRC Regulations and Enforcement.
14. Mr. Gundersen is employed as the chief engineer for Fairewinds Associates, Inc, an expert witness and paralegal services firm specializing in nuclear engineering, nuclear operations, and nuclear power plant safety analysis and assessment.

ASLB SCHEDULED ORAL ARGUMENT, AUGUST 3, 2016

15. Mr. Gundersen is eminently qualified to serve as an expert witness in the Vogtle ASLB concerning the lack of engineering analysis by Vogtle while placing its hydrogen ignitors.
16. As part of the undergraduate and graduate curriculum required to earn nuclear engineering degrees at Rensselaer Polytechnic Institute (RPI), there were numerous

courses that Mr. Gundersen took in thermodynamics and other areas that dealt directly with the flammable combustion processes and their byproducts in atomic reactors.

17. Of course, Mr. Gundersen's Master Thesis in nuclear engineering dealt with the turbulent mixing process of air with different masses, and the density and energy that required sophisticated thermodynamic modeling to calculate phase change location and timing. *This modeling analysis is similar to what might now be expected at Vogtle as a buoyant light gas mixes with a heavier media.*

18. Additionally, as an expert witness at the Three Mile Island trial representing the plaintiffs, Mr. Gundersen identified that the "hydrogen explosion" that occurred in a subcompartment slightly after 1 p.m. on the first day of the disaster was a deflagration shockwave that damaged containment integrity and caused the leakage of radioactive material directly into the environment. Mr. Gundersen discusses the deflagration shock wave as a keynote speaker at Penn State's "TMI@35" symposium in Harrisburg PA on the 35th anniversary of the disaster.¹

19. Finally, Mr. Gundersen was the first nuclear engineering expert in the world to publically identify that Fukushima Daiichi Unit 1 was destroyed by a deflagration shock wave while Fukushima Daiichi 3 was destroyed by a detonation shock wave. This video was uploaded to the internet on April 25, 2011, six weeks after the Fukushima disaster began, and *five years before Tokyo Electric acknowledged that a detonation shock wave had indeed caused the structural damage at TEPCO's Fukushima Daiichi Unit 3.* A brief excerpt of that video transcript is appended below:

"Today, I want to use the opportunity to talk about what we know for sure about Unit 3 and a couple of theories about what could have caused the devastation we see at Unit 3.

¹ <http://www.fairewinds.org/nuclear-energy-education/writing-the-nuclear-meltdown-playbook?rq=TMI%20%40%2035>

To begin with, the Unit 3 explosion is much more dramatic than the Unit 1 explosion. Now engineers have a term called “detonation.” And they have a separate term called “deflagration.” What that means is that they are both explosions in lay terms, but a deflagration, is when the shock wave travels at the speed of sound. A detonation is when the shock wave travels faster than the speed of sound. And a detonation is much more damaging than a deflagration. So that may seem like a technical nuance, but it is really the difference between what happened on Unit 1 and what happened on Unit 3.”²

20. In Conclusion, on November 16, 2011, *only 8-months* after the Fukushima Daiichi disaster began, Mr. Gundersen demonstrated a deflagration shockwave in a world famous video experiment entitled “*Hydrogen buildup at Fukushima? What does it mean & why does it happen?*” It is on YouTube and Vimeo as well as fairewinds.org³.

CONCLUSION

21. The Code of Federal Regulations makes it clear that the use of *engineering judgement* is not a substitute for the complete analysis required by the regulations and the subsequent public hearings required if that analysis impacts any aspect of the atomic power reactor’s federal license.
22. Furthermore, according to the ASLB ORDER Scheduling Oral Argument, received and reviewed by Fairewinds Associates, the “primary purpose of this oral argument is for the Board to ask questions and receive answers concerning standing and contention admissibility issues presented by the pleadings. The Petitioner shall have 30 minutes to present its arguments on all issues, and the NRC Staff and the Licensee shall each have 20 minutes. The Petitioner may reserve up to 5 minutes of its allotted

² <http://www.fairewinds.org/nuclear-energy-education/gundersen-postulates-unit-3-explosion-may-have-been-prompt-criticality-in-fuel-pool?rq=detonation>

³ <http://www.fairewinds.org/nuclear-energy-education/hydrogen-buildup-at-fukushima-what-does-it-mean-why-does-it-happen?rq=%20soda>

time for rebuttal. No other rebuttal will be permitted.”⁴

23. Mr. Gundersen has been an accepted expert witness before the Nuclear Regulatory Commission and its hearing boards and panels, including and not limited to the ASLB and the ACRS Advisory Committee on Reactor Safeguards, beginning in 1972 with the Chloride Intrusion Incident at Northeast Utilities Millstone I atomic power reactor, and in the United States Federal Court System.
24. Finally, Mr. Gundersen has been honored and recognized by the NRC itself – Ivan Selin, Chairman, Nuclear Regulatory Commission. *"Everything Mr. Gundersen said was absolutely right; he performed quite a service..."* [in reference to information provided to the NRC Inspector General by Arnie Gundersen concerning botched inspections and cozy personal relationships between NRC inspectors and licensees]⁵

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge, information, and belief.

Executed at Burlington, Vermont on August 10, 2016.

Margaret Gundersen

⁴ Docket Nos. 52-025-LA-2 and 52-026-LA-2, ASLBP No. 16-946-02-LA-BD01, June 29, 2016

⁵http://www.archive.org/stream/federalregulatio00unit/federalregulatio00unit_djvu.txt

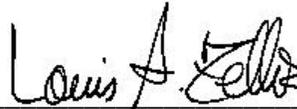
**UNITED STATES OF AMERICA
U.S. NUCLEAR REGULATORY COMMISSION
ATOMIC SAFETY AND LICENSING BOARD**

In the Matter of:
SOUTHERN NUCLEAR OPERATING CO
Vogtle Electric Generating Plant
Units 3 and 4

Docket Nos. 052-025-LA2 and 052-026-LA2

CERTIFICATE OF SERVICE

I hereby certify that the
**LETTER OF OBJECTION AND
DECLARATION OF MARGARET GUNDERSEN**
has been filed through the Electronic Information Exchange system
this 10th day of August, 2016.



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