

**Arnold Gundersen, Curriculum Vitae
Chief Engineer, Fairewinds Associates, Inc
May 2020**

Education and Training

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| ME NE | Master of Engineering Nuclear Engineering Rensselaer Polytechnic Institute, 1972 U.S. Atomic Energy Commission Fellowship Thesis: Cooling Tower Plume Rise |
| BS NE | Bachelor of Science Nuclear Engineering Rensselaer Polytechnic Institute, Cum Laude, 1971 James J. Kerrigan Scholar |
| RO | Licensed Reactor Operator, U.S. Atomic Energy Commission, License # OP-3014 |

Patents

Energy Absorbing Turbine Missile Shield – U.S. Patent # 4,397,608 – 8/9/1983

Honors

U.S. Atomic Energy Commission Fellowship, 1972
B.S. Degree, Cum Laude, RPI, 1971, 1st in nuclear engineering class
Tau Beta Pi (Engineering Honor Society), RPI, 1969 – 1 of 5 in sophomore class of 700
James J. Kerrigan Scholar 1967–1971
Publicly commended to U.S. Senate by NRC Chairman, Ivan Selin, in May 1993 – “It is true...everything Mr. Gundersen said was absolutely right; he performed quite a service.”

Expert Qualifications – including and not limited to:

- Chief Engineer, Fairewinds Associates, Inc
- Nuclear Engineering, Safety, and Reliability Expert
- Federal and Congressional hearing testimony, Expert Witness testimony, Public Utility Commission Testimony, state legislative hearings, community stakeholder expert witness
- Vermont Community Research Fellow, University of Vermont
- Former Senior Vice President Nuclear Licensee
- Former Licensed Reactor Operator
- Atomic Energy Commission Fellow
- 45-years of nuclear industry experience and oversight

Publications

Co-author — *Science of the Total Environment* (STOTEN) published a peer-reviewed article entitled: *Radioactively-hot particles detected in dusts and soils from Northern Japan by combination of gamma spectrometry, autoradiography, and SEM/EDS analysis and implications in radiation risk assessment*. Co-authored with Dr. Marco Kaltofen, Worcester Polytechnic Institute (WPI), it details the analysis of radioactively hot particles collected in Japan following the Fukushima Dai-ichi meltdowns.

[<http://www.sciencedirect.com/science/article/pii/S0048969717317953>]

Published Lecture — *The Lessons of the Fukushima Daiichi Nuclear Accident* published in the *International Symposium on the Truth of Fukushima Nuclear Accident and the Myth of Nuclear Safety*, August 30, 2012 University of Tokyo, Iwanami Shoten Publishers, Tokyo, Japan

Published Lecture -- *Crisis Without End: The Medical and Ecological Consequences of the Fukushima Nuclear Catastrophe, from the Symposium at the New York Academy of Medicine, The New Press, 2014, Chapter 12, What Did They Know and When*

Author — *The Echo Chamber: Regulatory Capture and the Fukushima Daiichi Disaster, Lessons from Fukushima*, February 27, 2012, Greenpeace International

Author — *Fukushima Daiichi: Truth and The Way Forward*, Shueisha Publishing, February 17, 2012, Tokyo, Japan.

Co-author — *DOE Decommissioning Handbook, First Edition*, 1981-1982, invited author.

Presentations, Events, & Media (located @ end of CV)

Committee Memberships

Current member and founding member, Board of Directors, Fairewinds Energy Education Corp, 501(c)3

Vermont Yankee Public Oversight Panel, appointed 2008 by President Pro-Tem Vermont Senate

National Nuclear Safety Network – Founding Board Member

Three Rivers Community College – Nuclear Academic Advisory Board

Connecticut Low Level Radioactive Waste Advisory Committee – 10 years, founding member

Radiation Safety Committee, NRC Licensee – founding member

ANSI N-198, Solid Radioactive Waste Processing Systems

University Fellowship, Teaching, and Academic Administration

University of Vermont Community Research Fellow, appointed January 2016 through 2018

Community College of Vermont – Mathematics Professor – 2007 through Spring 2013

Rensselaer Polytechnic Institute (RPI) – Advanced Nuclear Reactor Physics Lab

Expert Witness Testimony and Nuclear Engineering Analysis and Consulting

Before the State of Vermont Public Utilities Commission, Surrebuttal Testimony of Arnold Gundersen.

December 1, 2017. VTPUC Docket 8880, Joint Petition of NorthStar Decommissioning Holdings, LLC.

Before the State of Vermont Public Utilities Commission, Testimony of Arnold Gundersen Supporting the New England Coalition: An Evaluation of The Financial Risks to Vermont In the Proposed Sale of The Entergy Nuclear Vermont Yankee Power Plant Site to NorthStar Decommissioning Holdings, LLC.

August 30, 2017. VTPUC Docket 8880, Joint Petition of NorthStar Decommissioning Holdings, LLC.

Before the United States District Court Northern District Of Illinois, Steve Lawson And Darla Lawson, Other Similar Situated Individuals, Plaintiffs, Vs. General Electric, And Does 1-200, Defendants. Expert Witness Report by Arnold Gundersen, Prepared for Plaintiffs Attorney: Charles A. Bonner, Esq. Sb# 85413. May 25, 2017. Analysis of radiation exposure to GE journeyman welder.

Before the Public Utilities Commission of The State of California – January 27, 2017 – Prepared Direct Testimony of Arnold Gundersen of Fairewinds Associates, Inc., For San Luis Obispo Mothers for Peace regarding the: Application of Pacific Gas and Electric Company for Approval of the Retirement of Diablo Canyon Power Plant, Implementation of the Joint Proposal, and Recovery of Associated Costs Through Proposed Ratemaking Mechanisms Application 16-08-006 (Filed August 11, 2016)

Nuclear Regulatory Commission Before the Secretary – May 2, 2016, – Declaration of Arnold Gundersen To Support the Petition for Leave to Intervene And Request For Hearing By The Blue Ridge Environmental Defense League Regarding Southern Nuclear Operating Company's Vogtle Electric Generating Plant Units 3 And 4 Request For License Amendment And Exemption: Containment Hydrogen Igniter Changes (LAR-15-003)

Fairewinds Energy Education Report Submitted to NRC in Response to an Advance Notice of Proposed Rulemaking for Regulatory Improvements for Decommissioning Power Reactors: – March 17, 2016, *The Nationwide Failures of Decommissioning Regulation: Decommissioning Trust Funds or Slush Funds?*

Fairewinds Energy Education Report Submitted to NRC for Public Comment to Staff Regarding the Decommissioning of the Vermont Yankee Atomic Reactor – March 23, 2015, *Vermont Yankee's Decommissioning as an Example of Nationwide Failures of Decommissioning Regulation*

NRC Before the Atomic Safety and Licensing Board (ASLB) – December 1, 2014, *Gundersen Declaration Palisades Embrittlement*, Docket No. 50-255, Entergy, Palisades, *Petition to Intervene and for A Public Adjudication Hearing of Entergy License Amendment Request for Authorization to Implement 10 CFR §50.61a, Alternate Fracture Toughness Requirements For Protection Against Pressurized Thermal Shock Events.*

NRC Before the Commission – November 6, 2014, *Second Supplemental Declaration of Arnold Gundersen*, In the Matter of Florida Power & Light Co., Docket No. 50-389, St. Lucie Plant, Unit 2.

NRC Atomic Safety and Licensing Board (ASLB) – October 10, 2014 – *Diablo Canyon Nuclear Power Plant, Units 1 and 2 – Gundersen Affidavit Supporting Friends of the Earth's Petition to Intervene: In the matter of Pacific Gas & Electric Company Docket No. 50-275-LR & Docket No. 50-323-LR, License Renewal Application.*

NRC Hearing Request – *Declaration of Arnold Gundersen Supporting Hearing Request*, March 10, 2014 – retained by Southern Alliance for Clean Energy (SACE) in the matter of Florida Power & Light Co., Docket No. 50-389, St. Lucie Plant, Unit 2

NRC ASLB Proceeding Fermi Unit 3 52-033-COL – October 30, 2013 – Retained by Don't Waste Michigan, Beyond Nuclear et al, Oral Expert Witness Testimony regarding Contention 15: Quality Assurance.

State of Utah Seventh District Court of Emery County – September 25, 2013 – Retained by HEAL Utah et al as an expert witness testifying on cooling tower consumptive use of water for a proposed nuclear power plant owned by Blue Castle Holdings and located on the Green River. Defendants were Kane County Water Conservancy District.

Canadian Nuclear Safety Commission – May 29-30, 2013 – Retained by Durham Nuclear Awareness to present expert witness testimony in hearings regarding the proposed life extension for the Pickering Nuclear Station owned Ontario Power Generation.

Nuclear Regulatory Commission – May 30, 2013 – Expert witness report Before the Secretary NRC in *the Matter of Detroit Edison Nuclear Power Station: Rebuttal Testimony of Arnold Gundersen Supporting of Intervenors' Contention 15: DTE COLA Lacks Statutorily Required Cohesive QA Program.* Retained by Don't Waste Michigan, Beyond Nuclear et al.

Nuclear Regulatory Commission – May 20, 2013 – Expert witness report Before the Secretary NRC in *the Matter of Davis Besse Nuclear Power Station: Expert Witness Report of Arnold Gundersen to Support the Petition for Leave to Intervene and Request for Hearing by Beyond Nuclear, Citizens Environment Alliance Southwest Ontario Canada, Don't Waste Michigan, and The Sierra Club.* Retained by Beyond Nuclear, Citizens Environment Alliance Southwest Ontario Canada, Don't Waste Michigan, and The Sierra Club.

Nuclear Regulatory Commission – May 6, 2013 – Expert witness report Before the Secretary NRC: *Expert Witness Report of Arnold Gundersen to Support the Petition for Leave to Intervene and Request for Hearing by The Blue Ridge Environmental Defense League, Bellefonte Efficiency and Sustainability Team, And Mothers Against Tennessee River Radiation*. Retained by BREDL et al.

Nuclear Regulatory Commission – April 30, 2013 – Expert witness report to Atomic Safety and Licensing Board: *Testimony of Arnold Gundersen Supporting of Intervenors Contention 15: DTE Cola Lacks Statutorily Required Cohesive QA Program*. Retained by Don't Waste Michigan, Beyond Nuclear et al.

Canadian Nuclear Safety Commission (CNSC) – April 29, 2013 – Expert witness report to Canadian Nuclear Safety Commission (CNSC): *Analysis of The Relicensing Application for Pickering Nuclear Generating Station*. Retained by Durham Nuclear Awareness.

Nuclear Regulatory Commission – January 16, 2013 – Expert witness presentation to NRC Petition Review Board: *2.206 Presentation San Onofre Units 2 and 3 Replacement Steam Generators Meeting with Petitioner Friends of the Earth, Requesting Enforcement Action Against Southern California Edison Under 10 CFR 2.206*

Expert Witness Report for Friends of The Earth – July 11, 2012 – *San Onofre's Steam Generators: Significantly Worse Than All Others Nationwide*, Fairewinds Associates, Inc

Expert Witness Report for Friends of the Earth – May 15, 2012 – *San Onofre Steam Generator Failures Could Have Been Prevented*, Fairewinds Associates, Inc

Expert Witness Report for Friends of the Earth – April 10, 2012 – *San Onofre Cascading Steam Generator Failures Created by Edison: Imprudent Design and Fabrication Decisions Caused Leaks*, Fairewinds Associates, Inc

Expert Witness Report for Friends of the Earth – March 27, 2012 – *Steam Generator Failures at San Onofre: The Need for A Thorough Root Cause Analysis Requires No Early Restart*, Fairewinds Associates, Inc

Expert Witness Report for Greenpeace – February 27, 2012 – *Lessons from Fukushima: The Echo Chamber Effect*, Fairewinds Associates, Inc

Nuclear Regulatory Commission – December 21, 2011 – Expert witness report to Atomic Safety and Licensing Board: *Prefiled Direct Testimony of Arnold Gundersen Regarding Consolidated Contention RK-EC-3/CW-EC-1 (Spent Fuel Pool Leaks)*

New York State Department of Environmental Conservation – November 15-16, 2011 – Expert witness report for Riverkeeper: hearing testimony regarding license extension application for Indian Point Units 2 and 3 – contention: tritium in the groundwater.

Nuclear Regulatory Commission – November 10, 2011 – Expert witness report entitled: *Fukushima and the Westinghouse-Toshiba AP1000, A Report for the AP1000 Oversight Group by Fairewinds Associates, Inc, and Video*. Submitted to NRC by the AP1000 Oversight Group.

Nuclear Regulatory Commission – October 7, 2011 – *Testimony to the NRC Petition Review Board Re: Mark 1 Boiling Water Reactors*, Petition for NRC to shut down all BWR Mark 1 nuclear power plants due to problems in containment integrity in the Mark 1 design.

New York State Department of Environmental Conservation – October 4, 2011 – *Prefiled Rebuttal Testimony of Arnold Gundersen On Behalf of Petitioners Riverkeeper, Inc., Scenic Hudson, Inc., And Natural Resources Defense Council, Inc. To The Direct Testimony of Matthew J. Barvenik (Senior Principal GZA Geoenvironmental, Inc.) Regarding Radiological Materials*

Southern Alliance for Clean Energy (SACE) submission to TVA Board of Directors – August 3, 2011– Expert witness report entitled: *The Risks of Reviving TVA's Bellefonte Project*, and Video prepared for the Southern Alliance for Clean Energy (SACE).

New York State Department of Environmental Conservation, July 22, 2011 – Prefiled Direct Testimony of Arnold Gundersen On Behalf of Petitioners Riverkeeper, Inc., Scenic Hudson, Inc., And Natural Resources Defense Council, Inc. Regarding Radiological Materials

Nuclear Regulatory Commission – May 10, 2011 – *Comment to the proposed rule on the AP1000 Design Certification Amendment Docket ID NRC-2010-0131 As noticed in the Federal Register on February 24, 2011* Retained by Friends of the Earth as Expert Witness.

Nuclear Regulatory Commission – May 10, 2011 – *Comment to the proposed rule on the AP1000 Design Certification Amendment Docket ID NRC-2010-0131 As noticed in the Federal Register on February 24, 2011* Retained by Friends of the Earth as Expert Witness.

NRC Advisory Committee on Reactor Safeguards (ACRS) – May 26, 2011 – Lessons learned from Fukushima and Containment Integrity on the AP1000.

Vermont Energy Cooperative (VEC) – April 26, 2011– Presentation to the Vermont Energy Cooperative Board of Directors, *Vermont Yankee – Is It Reliable for 20 more years?*

Vermont State Nuclear Advisory Panel (VSNAP) – February 22, 2011 – Testimony and presentation entitled the *Vermont Yankee Public Oversight Panel Supplemental Report* regarding management issues at the Vermont Yankee Nuclear Power Plant to the reconvened Vermont State Nuclear Advisory Panel.

Vermont State Legislature Senate Committee on Natural Resources and Energy – February 8, 2011. Testimony: *Vermont Yankee Leaks and Implications*. (<http://www.leg.state.vt.us/jfo/envy.aspx>)

Vermont State Legislature – January 26, 2011 – House Committee on Natural Resources and Energy, and Senate Committee on Natural Resources and Energy – Testimony regarding Fairewinds Associates, Inc's report: *Decommissioning the Vermont Yankee Nuclear Power Plant and Storing Its Radioactive Waste* (<http://www.leg.state.vt.us/jfo/envy.aspx>). Additional testimony was also given regarding the newest radioactive isotopic leak at the Vermont Yankee nuclear power plant.

Vermont State Legislature Joint Fiscal Committee Legislative Consultant Regarding Entergy Nuclear Vermont Yankee – *Decommissioning the Vermont Yankee Nuclear Power Plant and Storing Its Radioactive Waste* January 2011. (<http://www.leg.state.vt.us/jfo/envy.aspx>).

U.S. Nuclear Regulatory Commission Advisory Committee on Reactor Safeguards (NRC-ACRS) AP1000 Sub-Committee – *Nuclear Containment Failures: Ramifications for the AP1000 Containment Design*, Supplemental Report submitted December 21, 2010. (<http://fairewinds.com/reports>)

Vermont State Legislature Joint Fiscal Committee Legislative Consultant Regarding Entergy Nuclear Vermont Yankee – *Reliability Oversight Entergy Nuclear Vermont Yankee, December 6, 2010*. Discussion regarding the leaks at Vermont Yankee and the ongoing monitoring of those leaks and ENVY's progress addressing the 90-items identified in Act 189 that require remediation. (<http://www.leg.state.vt.us/jfo/envy.aspx>).

U.S. Nuclear Regulatory Commission Atomic Safety and Licensing Board (NRC-ASLB) – *Declaration of Arnold Gundersen Supporting Blue Ridge Environmental Defense League's Contention Regarding Consumptive Water Use at Dominion Power's Newly Proposed North Anna Unit 3 Pressurized Water Reactor* in the matter of Dominion Virginia Power North Anna Power Station Unit 3 Docket No. 52-017 Combined License Application ASLBP#08-863-01-COL, October 2, 2010.

U.S. Nuclear Regulatory Commission Atomic Safety and Licensing Board (NRC-ASLB) – *Declaration of Arnold Gundersen Supporting Blue Ridge Environmental Defense League's New Contention Regarding AP1000 Containment Integrity on the Vogtle Nuclear Power Plant Units 3 And 4* in the matter of the Southern Nuclear Operating Company Vogtle Electric Generating Plant, Units 3&4 Combined License Application, Docket Nos. 52-025-COL and 52-026-COL and ASLB No. 09-873-01-COL-BD01, August 13, 2010.

Vermont State Legislature Joint Fiscal Committee Legislative Consultant Regarding Entergy Nuclear Vermont Yankee – July 26, 2010 – Summation for 2009 to 2010 Legislative Year for the Joint Fiscal Committee Reliability Oversight Entergy Nuclear Vermont Yankee (ENVY) Fairewinds Associates 2009-2010. This summary includes an assessment of ENVY's progress (as of July 1, 2010) toward meeting the milestones outlined by the Act 189 Vermont Yankee Public Oversight Panel in its March 2009 report to the Legislature, the new milestones that have been added since the incident with the tritium leak and buried underground pipes, and the new reliability challenges facing ENVY, Entergy, and the State of Vermont. (<http://www.leg.state.vt.us/jfo/envy.aspx>)

U.S. Nuclear Regulatory Commission Atomic Safety and Licensing Board (NRC-ASLB) – *Declaration of Arnold Gundersen Supporting Blue Ridge Environmental Defense League's Contentions* in the matter of Dominion Virginia Power North Anna Station Unit 3 Combined License Application, Docket No. 52-017, ASLBP#08-863-01-COL, July 23, 2010.

Florida Public Service Commission (FPSC)

Licensing and construction delays due to problems with the newly designed Westinghouse AP1000 reactors in *Direct Testimony in Re: Nuclear Plant Cost Recovery Clause by The Southern Alliance for Clean Energy (SACE)*, FPSC Docket No. 100009-EI, July 8, 2010.

U.S. Nuclear Regulatory Commission Advisory Committee on Reactor Safeguards (NRC-ACRS) AP1000 Sub-Committee – Presentation to ACRS regarding design flaw in AP1000 Containment – June 25, 2010 Power Point Presentation: <http://fairewinds.com/content/ap1000-nuclear-design-flaw-addressed-to-nrc-acrs>.

U.S. Nuclear Regulatory Commission Atomic Safety and Licensing Board (NRC-ASLB) – *Second Declaration of Arnold Gundersen Supporting Supplemental Petition of Intervenors Contention 15: DTE COLA Lacks Statutorily Required Cohesive QA Program* – June 8, 2010.

NRC Chairman Gregory Jaczko, ACRS, Secretary of Energy Chu, and the White House Office of Management and Budget – AP1000 Containment Leakage Report Fairewinds Associates - Gundersen, Hausler, 4-21-2010. This report, commissioned by the AP1000 Oversight Group, analyzes a potential flaw in the containment of the AP1000 reactor design.

Vermont State Legislature House Committee on Natural Resources and Energy – April 5, 2010
– Testified to the House Committee on Natural Resources and Energy – regarding discrepancies in Entergy’s TLG Services decommissioning analysis. See *Fairewinds Cost Comparison TLG Decommissioning* (<http://www.leg.state.vt.us/jfo/envy.aspx>).

Vermont State Legislature Joint Fiscal Committee Legislative Consultant Regarding Entergy Nuclear Vermont Yankee – February 22, 2010 – The Second Quarterly Report by Fairewinds Associates, Inc to the Joint Legislative Committee regarding buried pipe and tank issues at Entergy Nuclear Vermont Yankee and Entergy proposed Enexus spinoff. See two reports: *Fairewinds Associates 2nd Quarterly Report to JFC* and *Enexus Review by Fairewinds Associates*. (<http://www.leg.state.vt.us/jfo/envy.aspx>).

Vermont State Legislature Senate Natural Resources – February 16, 2010 – Testified to Senate Natural Resources Committee regarding causes and severity of tritium leak in unreported buried underground pipes, status of Enexus spinoff proposal, and health effects of tritium.

Vermont State Legislature Senate Natural Resources – February 10, 2010 – Testified to Senate Natural Resources Committee regarding causes and severity of tritium leak in unreported buried underground pipes. <http://www.youtube.com/watch?v=36HJiBrJSxE>

Vermont State Legislature Senate Finance – February 10, 2010 – Testified to Senate Finance Committee regarding *A Chronicle of Issues Regarding Buried Tanks and Underground Piping at VT Yankee*. (<http://www.leg.state.vt.us/jfo/envy.aspx>).

Vermont State Legislature House Committee on Natural Resources and Energy – January 27, 2010 – *A Chronicle of Issues Regarding Buried Tanks and Underground Piping at VT Yankee*. (<http://www.leg.state.vt.us/jfo/envy.aspx>).

Submittal to Susquehanna River Basin Commission, by Eric Epstein – January 5, 2010 – *Expert Witness Report of Arnold Gundersen Regarding Consumptive Water Use of the Susquehanna River by The Proposed PPL Bell Bend Nuclear Power Plant* in the Matter of RE: Bell Bend Nuclear Power Plant Application for Groundwater Withdrawal Application for Consumptive Use BNP-2009-073.

U.S. Nuclear Regulatory Commission Atomic Safety and Licensing Board (NRC-ASLB) – Declaration of Arnold Gundersen Supporting Supplemental Petition of Intervenors Contention 15: Detroit Edison COLA Lacks Statutorily Required Cohesive QA Program, December 8, 2009.

U.S. NRC Region III Allegation Filed by Missouri Coalition for the Environment – Expert Witness Report entitled: *Comments on the Callaway Special Inspection by NRC Regarding the May 25, 2009 Failure of its Auxiliary Feedwater System*, November 9, 2009.

Vermont State Legislature Joint Fiscal Committee Legislative Consultant Regarding Entergy Nuclear Vermont Yankee – Oral testimony given to the Vermont State Legislature Joint Fiscal Committee October 28, 2009. See report: *Quarterly Status Report - ENVY Reliability Oversight for JFO* (<http://www.leg.state.vt.us/jfo/envy.aspx>).

Vermont State Legislature Joint Fiscal Committee Legislative Consultant Regarding Entergy Nuclear Vermont Yankee – The First Quarterly Report by Fairewinds Associates, Inc to the Joint Legislative Committee regarding reliability issues at Entergy Nuclear Vermont Yankee, issued October 19, 2009. See report: *Quarterly Status Report - ENVY Reliability Oversight for JFO* (<http://www.leg.state.vt.us/jfo/envy.aspx>).

Florida Public Service Commission (FPSC) – Gave direct oral testimony to the FPSC in hearings in Tallahassee, FL, September 8 and 10, 2009 in support of Southern Alliance for Clean Energy (SACE) contention of anticipated licensing and construction delays in newly designed Westinghouse AP 1000 reactors proposed by Progress Energy Florida and Florida Power and Light (FPL).

Florida Public Service Commission (FPSC) – NRC announced delays confirming my original testimony to FPSC detailed below. My supplemental testimony alerted FPSC to NRC confirmation of my original testimony regarding licensing and construction delays due to problems with the newly designed Westinghouse AP 1000 reactors in *Supplemental Testimony in Re: Nuclear Plant Cost Recovery Clause by The Southern Alliance for Clean Energy*, FPSC Docket No. 090009-EI, August 12, 2009.

Florida Public Service Commission (FPSC) – Licensing and construction delays due to problems with the newly designed Westinghouse AP 1000 reactors in *Direct Testimony in Re: Nuclear Plant Cost Recovery Clause by The Southern Alliance for Clean Energy (SACE)*, FPSC Docket No. 090009-EI, July 15, 2009.

Vermont State Legislature Joint Fiscal Committee Expert Witness Oversight Role for Entergy Nuclear Vermont Yankee (ENVY) – Appointment from July 2009 to May 2010. Contracted by the Joint Fiscal Committee of the Vermont State Legislature as an expert witness to oversee the compliance of ENVY to reliability issues uncovered during the 2009 legislative session by the Vermont Yankee Public Oversight Panel of which I was appointed a member along with former NRC Commissioner Peter Bradford for one year from July 2008 to 2009. At the time, Entergy Nuclear Vermont Yankee (ENVY) was under review by Vermont State Legislature to determine if it should receive a Certificate for Public Good (CPG) to extend its operational license for another 20-years. Vermont was the only state in the country that had legislatively created the CPG authorization for a nuclear power plant. Act 160 was passed to ascertain ENVY's ability to run reliably for an additional 20 years.

U.S. Nuclear Regulatory Commission – Expert Witness Declaration regarding Combined Operating License Application (COLA) at North Anna Unit 3 *Declaration of Arnold Gundersen Supporting Blue Ridge Environmental Defense League's Contentions* (June 26, 2009).

U.S. Nuclear Regulatory Commission – Expert Witness Declaration regarding Through-wall Penetration of Containment Liner and Inspection Techniques of the Containment Liner at Beaver Valley Unit 1 Nuclear Power Plant *Declaration of Arnold Gundersen Supporting Citizen Power's Petition* (May 25, 2009).

U.S. Nuclear Regulatory Commission – Expert Witness Declaration regarding Quality Assurance and Configuration Management at Bellefonte Nuclear Plant *Declaration of Arnold Gundersen Supporting Blue Ridge Environmental Defense League's Contentions in their Petition for Intervention and Request for Hearing*, May 6, 2009.

Pennsylvania Statehouse – Expert Witness Analysis presented in formal presentation at the Pennsylvania Statehouse, March 26, 2009 regarding actual releases from Three Mile Island Nuclear Accident. Presentation may be found at: <http://www.tmia.com/march26>

Vermont Legislative Testimony and Formal Report for 2009 Legislative Session – As a member of the Vermont Yankee Public Oversight Panel, I spent almost eight months examining the Vermont Yankee

Nuclear Power Plant and the legislatively ordered Comprehensive Vertical Audit. Panel submitted Act 189 Public Oversight Panel Report March 17, 2009 and oral testimony to a joint hearing of the Senate Finance and House Committee on Natural Resources and Energy March 19, 2009.

<http://www.leg.state.vt.us/JFO/Vermont%20Yankee.htm>

Finestone v Florida Power & Light Company (FPL) (11/2003 to 12/2008) Federal Court – Plaintiffs’
Expert Witness in United States District Court for the Southern District of Florida. Retained by Plaintiffs’ Attorney Nancy LaVista, from Lytal, Reiter, Fountain, Clark, Williams, West Palm Beach, FL. Case# 06-11132-E. This case involved two plaintiffs in cancer cluster of 42 families alleging that illegal radiation releases from nearby nuclear power plant caused children’s cancers. Production request, discovery review, preparation of deposition questions and attendance at Defendant’s experts for deposition, preparation of expert witness testimony, preparation for Daubert Hearings, ongoing technical oversight, source term reconstruction and appeal to Circuit Court.

U.S. Nuclear Regulatory Commission Advisory Committee Reactor Safeguards (NRC-ACRS) –
Expert Witness providing oral testimony regarding Millstone Point Unit 3 (MP3) Containment issues in hearings regarding the Application to Uprate Power at MP3 by Dominion Nuclear, Washington, and DC. (July 8-9, 2008).

Appointed by President Pro-Tem of Vermont Senate Shumlin (later elected as Vermont Governor) to
Legislatively Authorized Nuclear Reliability Public Oversight Panel – To oversee Comprehensive Vertical Audit of Entergy Nuclear Vermont Yankee (Act 189) and testify to State Legislature during 2009 session regarding operational reliability of ENVY in relation to its 20-year license extension application. (July 2, 2008 to present).

U.S. Nuclear Regulatory Commission Atomic Safety and Licensing Board (NRC-ASLB) –Expert
Witness providing testimony regarding *Pilgrim Watch’s Petition for Contention 1*
Underground Pipes (April 10, 2008).

U.S. Nuclear Regulatory Commission Atomic Safety and Licensing Board (NRC-ASLB) –
Expert Witness supporting *Connecticut Coalition Against Millstone in Its Petition for Leave to Intervene, Request for Hearing, And Contentions Against Dominion Nuclear Connecticut Inc.’s Millstone Power Station Unit 3 License Amendment Request for Stretch Power Uprate* (March 15, 2008).

U.S. Nuclear Regulatory Commission Atomic Safety and Licensing Board (NRC-ASLB) –
Expert Witness supporting *Pilgrim Watch’s Petition for Contention 1: specific to issues regarding the integrity of Pilgrim Nuclear Power Station’s underground pipes and the ability of Pilgrim’s Aging Management Program to determine their integrity.* (January 26, 2008).

Vermont State House – 2008 Legislative Session –

- House Committee on Natural Resources and Energy – Comprehensive Vertical Audit: *Why NRC Recommends a Vertical Audit for Aging Plants Like Entergy Nuclear Vermont Yankee (ENVY)*
- House Committee on Commerce – Decommissioning Testimony

Vermont State Senate – 2008 Legislative Session –

- Senate Finance – testimony regarding Entergy Nuclear Vermont Yankee Decommissioning Fund
- Senate Finance – testimony on the necessity for a Comprehensive Vertical Audit (CVA) of Entergy Nuclear Vermont Yankee
- House Committee on Natural Resources and Energy – testimony regarding the placement of high-level nuclear fuel on the banks of the Connecticut River in Vernon, VT

U.S. Nuclear Regulatory Commission Atomic Safety and Licensing Board (NRC-ASLB) – MOX Limited Appearance Statement to Judges Michael C. Farrar (Chairman), Lawrence G. McDade, and Nicholas G. Trikouros for the “Petitioners”: Nuclear Watch South, the Blue Ridge Environmental Defense League, and Nuclear Information & Resource Service in support of *Contention 2: Accidental Release of Radionuclides, requesting a hearing concerning faulty accident consequence assessments made for the MOX plutonium fuel factory proposed for the Savannah River Site.* (September 14, 2007).

Appeal to the Vermont Supreme Court (March 2006 to 2007) – Expert Witness Testimony in support of *New England Coalition’s Appeal to the Vermont Supreme Court Concerning: Degraded Reliability at Entergy Nuclear Vermont Yankee as a Result of the Power Uprate.* New England Coalition represented by Attorney Ron Shems of Burlington, VT.

State of Vermont Environmental Court (Docket 89-4-06-vtec 2007) – Expert witness retained by New England Coalition to review Entergy and Vermont Yankee’s analysis of alternative methods to reduce the heat discharged by Vermont Yankee into the Connecticut River. Provided Vermont’s Environmental Court with analysis of alternative methods systematically applied throughout the nuclear industry to reduce the heat discharged by nuclear power plants into nearby bodies of water and avoid consumptive water use. This report included a review of the condenser and cooling tower modifications.

U.S. Senator Bernie Sanders and Congressman Peter Welch (2007) – Briefed Senator Sanders, Congressman Welch and their staff members regarding technical and engineering issues, reliability and aging management concerns, regulatory compliance, waste storage, and nuclear power reactor safety issues confronting the U.S. nuclear energy industry.

State of Vermont Legislative Testimony to Senate Finance Committee (2006) – Testimony to the Senate Finance Committee regarding Vermont Yankee decommissioning costs, reliability issues, design life of the plant, and emergency planning issues.

U.S. Nuclear Regulatory Commission Atomic Safety and Licensing Board (NRC-ASLB) – Expert witness retained by New England Coalition to provide Atomic Safety and Licensing Board with an independent analysis of the integrity of the Vermont Yankee Nuclear Power Plant condenser (2006).

U.S. Senators Jeffords and Leahy (2003 to 2005) – Provided the Senators and their staffs with periodic overview regarding technical, reliability, compliance, and safety issues at Entergy Nuclear Vermont Yankee (ENVY).

10CFR 2.206 filed with the Nuclear Regulatory Commission (July 2004) – Filed 10CFR 2.206 petition with NRC requesting confirmation of Vermont Yankee’s compliance with General Design Criteria.

State of Vermont Public Service Board (April 2003 to May 2004) – Expert witness retained by New England Coalition to testify to the Public Service Board on the reliability, safety, technical, and financial ramifications of a proposed increase in power (called an uprate) to 120% at Entergy’s 31-year-old Vermont Yankee Nuclear Power Plant.

International Nuclear Safety Testimony – Ten Days advising the President of the Czech Republic (Vaclav Havel) and the Czech Parliament on their energy policy for the 21st century.

Nuclear Regulatory Commission (NRC) Inspector General (IG) – Assisted the NRC Inspector General in investigating illegal gratuities paid to NRC Officials by Nuclear Energy Services (NES) Corporate Officers. In a second investigation, assisted the Inspector General in showing that materially false

statements (lies) by NES corporate president caused the NRC to overlook important violations by this licensee.

State of Connecticut Legislature – Assisted in the creation of State of Connecticut Whistleblower Protection legal statutes.

Federal Congressional Testimony –

- Publicly recognized by NRC Chairman, Ivan Selin, in May 1993 in his comments to U.S. Senate, “It is true...everything Mr. Gundersen said was absolutely right; he performed quite a service.”
- Commended by U.S. Senator John Glenn, Chair NRC Oversight Committee for public – for testimony to NRC Oversight Committee

PennCentral Litigation – Evaluated NRC license violations and materially false statements made by management of this nuclear engineering and materials licensee.

Three Mile Island Litigation – Evaluated unmonitored releases to the environment after accident, including containment breach, letdown system and blowout. Proved releases were 15 times higher than government estimate and subsequent government report.

Western Atlas Litigation – Evaluated neutron exposure to employees and license violations at this nuclear materials licensee.

Commonwealth Edison – In depth review and analysis for Commonwealth Edison to analyze the efficiency and effectiveness of all Commonwealth Edison engineering organizations, which support the operation of all of its nuclear power plants.

Peach Bottom Reactor Litigation – Evaluated extended 28-month outage caused by management breakdown and deteriorating condition of plant.

Presentations, Events, & Media

- *Three Mile Island (TMI)* Presentations and Events, March 23 through March 27, 2019
 - *A Legacy of Lies*, PennState TMI 40th Commemoration Keynote, March 27, 2019, followed by 4-TV interviews, available on CSPAN
 - NBC TV Andrea Mitchell Interview, filmed 2019-3-26, aired March 28, 2019
 - Presentation Pennsylvania State House Rotunda, Harrisburg, PA, March 25, 2019
 - TMI Survivors Banquet, Keynote and Q&A, March 23, 2019
 - Media Interviews with WHP 21 (CBS), WGAL (NBC), WHP 27 (ABC)
 - Keynote Harrisburg Historical Society, keynote, Harrisburg, Pennsylvania March 23, 2019
- *The Fukushima Vogtle Connection*, hosted by Georgia Wand and Nuclear Watch South, March 9, 2019
- *Power Lines* Documentary Premier at Emory University, Atlanta, GA, October 2018
- CCTV, Nuclear Free Future TV with host Margaret Harrington, *Picking Up the Pieces from Atoms for Peace*, May 10, 2018
- CCTV, Nuclear Free Future TV with host Margaret Harrington, Nuclear Update with Fairewinds Energy Education - March 10, 2018
- Chicago, NIRS meetings and group presentations November 28 to December 4, 2017
- Radio Interviews, November 2017: David Goodman, October 25, 2017; Project Censored with Mickey Huff, November 2017
- Fukushima Prefecture, Japan, September 7-18, 2017, Arnie Gundersen and Dr. Marco Kaltopen, research and data review technical meeting with the Deputy Director General and the Senior

Associate with the Japanese Atomic Energy Agency (JAEA). Trip to Japan was organized and funded by Fairewinds Energy Education.

- CCTV, Nuclear Free Future TV with host Margaret Harrington, *Fukushima, Three Mile Island, and Chernobyl*, March 30, 2017
- Radio Ecoshock, Alex Smith Interview, *Nuclear Power Is Not a Climate Change Solution*, January 26, 2017
- *38 Years and Five Meltdowns Later: The Real Lessons from TMI (Three Mile Island)*, March 25, 2017, keynote presentation hosted by Three Mile Island Alert, Harrisburg, PA
- *Arnie Gundersen speaks with Margaret Prescod*, March 14, 2017, Sojourner Truth Radio, Pacifica Radio on the Sixth-Year Commemoration of the Fukushima Daiichi nuclear power disaster.
- *Arnie Gundersen interviewed on Radiation Rattles Robot in Fukushima, Newsday - BBC World Service*, High levels of nuclear radiation have forced a robot to cut short its investigations of the Fukushima reactor in Japan. The probe's mission was to clean a passage to enable further robotic exploration, February 10, 2017.
- *Extreme Nuclear Dangers*, Radio Ecoshock host Alex Smith interviews Arnie Gundersen, the relationship between the nuclear power industry and nuclear weapons development, February 2, 2017.
- *Arnie Gundersen Appears on Project Censored with Dan Simon, Ted Rall, and Maggie Gundersen*, November 27, 2016
- *Arnie Gundersen Appears on Solartopia's Green Power and Wellness Hour*, November 16, 2016
- *Nuclear Power Is Not "Green Energy": It Is a Fount of Atomic Waste*, Published in Truthout, November 14, 2016
- *Powerstruggle Sneak Preview Panel Discussion*, Northampton, MA (October 23, 2016) Brattleboro, VT (Nov 3, 2016), organized by Turning Tide Productions
- *Is Solar Power in Nuclear Disaster Exclusion Zones Advisable?* published in *The Bulletin of the Atomic Scientists*, September 15, 2016
- *CO2 Smokescreen Presentation*, Montreal, Canada, invited speaker at the World Social Forum at the University of Quebec at Montreal (August 8, 2016) & McGill University, (August 10, 2016)
- *Gendai Business Online* exclusive interview with Fairewinds Chief Engineer Arnie Gundersen entitled: *American nuclear expert warns: "There is a possibility that now in Fukushima recontamination is occurring."*, June 14, 2016.
- *Seacoast Anti-Pollution League Annual Meeting*, Seabrook, NH, organized by the Seacoast Anti-Pollution League, open to the public, May 16, 2016
- *Arnie Gundersen Appears on Project Censored with Medea Benjamin*, March 30, 2016
- *Pilgrim Coalition Decommissioning Forum*, Plymouth, MA, organized by the Pilgrim Coalition, March 23, 2016
- *Osaka Global Environment Forum 2016*, in Osaka City, Japan, organized by Choetsu Kiko Association of Osaka and Friends of the Earth, February 27, 2016
- *Peace Forum Presentation*, in Kobe City, Japan, organized by YMCA, UNICEF, and Kobe Cooperative, February 22, 2016
- *Nuclear and Human Beings after Fukushima Event*, in Hiroshima City, Japan organized by Hiroshima YMCA, and Hiroshima Cooperative HANWA (Hiroshima Alliance for Nuclear Weapons Abolition), February 20, 2016
- *Peace Event at Jimmy Carter Civic Center*, in Konu-town Miyoshi, Hiroshima, Japan organized by Peace Platform, February 17, 2016
- *Middlebury College Student Global Affairs Conference: Power and Protest*, Middlebury, VT at Middlebury College, invited speaker for a student organized event, January 22, 2016
- *Ready for the Big One? Diablo Canyon Earthquake Vulnerability*, San Luis Obispo, invited guest of the San Luis Obispo Mothers for Peace, December 2, 2015
- *Expect the Unexpected: Nuclear Power's Unlearned Lessons*, California Polytechnic Institute, December 1, 2015

- *World in Danger: From Fukushima to California*, University of California at Berkeley, in conversation with Joanna Macy, November 22, 2015
- *World in Danger: The Fukushima - California Connection*, Point Reyes Station, in conversation with Mary Beth Brangan, November 21, 2015
- *World in Danger: Fukushima*, Sonoma State University, in conversation with Majia Nadesan, November 18, 2015
- *Fukushima's Impact at Five Years*, World Uranium Symposium 2015: Fukushima Workshop, April 2015, Quebec, Canada
- *Did Tesla Just Kill Nuclear Power?* May 1, 2015, Article written by journalist Jeff McMahon for *Forbes Magazine* that captures the excitement and buzz surrounding Tesla's big announcement and Arnie's auspicious speech
- *Building New Nukes Would Make Global Warming Worse* April 30, 2015, Presentation at Northwestern University, Chicago, IL
- *Fairewinds' Report: Vermont Yankee's Decommissioning As An Example of Nationwide Failures of Decommissioning Regulation presented to the Senate Committee for Natural Resources and Energy* April 22, 2015, Presentation Vermont Statehouse, Montpelier, VT
- *An Economic Analysis of the Cost of Nuclear Power* April 14, 2015, Presentation at the World Uranium Symposium, Quebec City, Quebec, Canada, Keynote Speaker
- *Commemoration of Meltdown at Fukushima Daiichi: 4-Years Later* March 11, 2015, Presentation to the House of Commons in London, England
- *Should Nuclear Energy Be Expanded to Help Create a More Sustainable Future?* November 20, 2014, Invited guest speaker in Debate at Hofstra University
- *Radiation Knows No Borders* August 2, 2014, Invited speaker at The Wave Conference, Life Chiropractic West, San Francisco, CA
- *Thirty-Five Years and Five Meltdowns Later: The Real Lessons of Three Mile Island* March 28, 2014, Three Mile Island at 35 (TMI@35) Symposium at Penn State, Harrisburg, PA, Keynote Speaker
- *The Nuclear Renaissance? Is It Too Big To Fail?* November 20, 2013, University North Carolina, Chapel Hill, NC.
- *Speaking Truth to Power* October 22, 2013 – Clarkson University, Potsdam, NY
- *The United States at A Crossroads: Two Futures* October 17 2013, Global Forum, Waitsfield, Vermont
- *A Road Less Taken: Energy Choices for the Future* – October 16, 2013, Johnson State College, Johnson, Vermont.
- *Fukushima: Ongoing Lessons for Boston* – October 9, 2013 – Boston, Massachusetts State House. Speakers were Arnie Gundersen, Former Japanese Prime Minister Naoto Kan, Former NRC Chair Gregory Jaczko, Former NRC Commissioner Peter Bradford, and Massachusetts State Senator Dan Wolf.
- *Fukushima: Ongoing Lessons for New York* – October 8, 2013 – New York City 82nd Street YMCA. Speakers were Arnie Gundersen, Riverkeeper President Paul Galley, Former Japanese Prime Minister Naoto Kan, Former NRC Chair Gregory Jaczko, Former NRC Commissioner Peter Bradford, and Ralph Nader.
- *Fukushima: Ongoing Lessons for California* – June 4, 2013 – New York City 82nd Street YMCA. Speakers were Arnie Gundersen, Riverkeeper President Paul Galley, Former Japanese Prime Minister Naoto Kan, Former NRC Chair Gregory Jaczko, Former NRC Commissioner Peter Bradford, and Friends of the Earth Nuclear Campaigner Kendra Ulrich.
- *What Did They Know and When? Fukushima Daiichi Before and After the Meltdowns*, Symposium: The Medical and Ecological Consequences of the Fukushima Nuclear Accident, The New York Academy of Medicine, New York City, NY, March 11, 2013
- *A Mountain of Waste 70 Years High*, Presentation: *Old and New Reactors*, University of Chicago, December 1, 2012

- Congressional Briefing September 20, 2012; invited by Representative Dennis Kucinich
- Presentations in Japan August/September 2012: Presentation at University of Tokyo (August 30, 2012), Presentation at Japanese Diet Building (members of the Japanese Legislature - August 31, 2012), Presentation to citizen groups in Niigata (September 1, 2012), Presentations to citizen groups in Kyoto (September 4, 2012), Presentation to Japanese Bar Association (September 2, 2012), and Presentation at the Tokyo Olympic Center (September 6, 2012)
- Multi-media Opera: *Curtain of Smoke*, by Filmmaker Karl Hoffman, Composer Andrea Molino, and Dramatist Guido Barbieri, Rome, Italy (2012-5-21,22)
- Curtain of Smoke Symposium (2012-5-21), with Dr. Sherri Ebadi 2004 Nobel Laureate
- The Italian National Press Club Rome (2012-5-21) with Dr. Sherri Ebadi 2004 Nobel Laureate: the relationship between nuclear power and nuclear weapons,
- Radio 3 Rome (2012-5-21) Discussion of Three Mile Island and the triple meltdown at Fukushima Daiichi (Japan),
- Sierra Club Panel Discussions (2012-5-5): Consequences of Fukushima Daiichi with Paul Gunter and Waste Disposal with Mary Olson,
- Physicians for Social Responsibility Seattle (2012-3-17),
- Fukushima Daiichi Forum with Chiho Kaneko, Brattleboro, VT (2012-3-11),
- Physicians for Global Responsibility Vancouver (2012-3-11) Skype Video Lecture,
- University of Vermont (2 – 2011),
- Boston Nuclear Forum, Boston Library (6/16/11),
- Duxbury Emergency Management (6/15/11),
- Vermont State Nuclear Advisory Panel (VSNAP),
- New Jersey Environmental Federation (5/14/11),
- Press Conference for Physicians for Social Responsibility (5/19/11),
- St. Johnsbury Academy – Nuclear Power 101.

Educational videos on nuclear safety, reliability and engineering particularly Fukushima issues. Videos may be viewed @ fairewinds.org (501c3 non-profit)

Expert commentary (hundreds of TV, radio, print media, and internet interviews): CNN (8), The John King Show (16), BBC, CBC, Russia Today, Democracy Now, Al Jazeera America, KPBS (Radio & TV) VPR, WPTZ, WCAX, WBAI, CCTV, NECN, Pacifica Radio, CBC (radio & TV) (4), Rachel Maddow Show, *Washington Post*, *New York Times*, *Tampa Bay Times*, *The Guardian*, *Bloomberg* (print & TV), *Reuters*, *Associated Press*, *The Global Post*, *Miami Herald*, *Orange County Times*, *LA Times*, *Al Jazeera* (print), *The Tennessean*, The Chris Martinson Show, *Mainichi News*, TBS Japan, *Gendai Magazine*, NHK television, *Scientific American*. *Huffington Post* (Paris) named Fairewinds.com the best go to site for information about the Fukushima Daiichi accident (5/9/11).

Special Remediation Expertise:

Director of Engineering, Vice President of Site Engineering, and the Senior Vice President of Engineering at Nuclear Energy Services (NES) Division of Penn Central Corporation (PCC)

- NES was a nuclear licensee that specialized in dismantlement and remediation of nuclear facilities and nuclear sites. Member of the radiation safety committee for this licensee.
- Department of Energy chose NES to write *DOE Decommissioning Handbook* because NES had a unique breadth and depth of nuclear engineers and nuclear physicists on staff.
- Personally, I wrote the “Small Bore Piping” chapter of the DOE’s first edition Decommissioning Handbook, personnel on my staff authored other sections, and I reviewed the entire Decommissioning Handbook.

- Served on the Connecticut Low Level Radioactive Waste Advisory Committee for 10 years from its inception.
- Managed groups performing analyses on dozens of dismantlement sites to thoroughly remove radioactive material from nuclear plants and their surrounding environment.
- Managed groups assisting in decommissioning the Shippingport nuclear power reactor. Shippingport was the first large nuclear power plant ever decommissioned. The decommissioning of Shippingport included remediation of the site after decommissioning.
- Managed groups conducting site characterizations (preliminary radiation surveys prior to commencement of removal of radiation) at the radioactively contaminated West Valley site in upstate New York.
- Personnel reporting to me assessed dismantlement of the Princeton Avenue Plutonium Lab in New Brunswick, NJ. The lab's dismantlement assessment was stopped when we uncovered extremely toxic and carcinogenic underground radioactive contamination.
- Personnel reporting to me worked on decontaminating radioactive thorium at the Cleveland Avenue nuclear licensee in Ohio. The thorium had been used as an alloy in turbine blades. During that project, previously undetected extremely toxic and carcinogenic radioactive contamination was discovered below ground after an aboveground gamma survey had purported that no residual radiation remained on site.

Additional Expert Qualifications – including and not limited to:

- Nuclear engineering management assessment, prudence assessment, contract administration, assessment and review
- Nuclear power plant licensing and permitting – assessment and review
- Decommissioning experience: including radioactive waste processes, storage issue assessment, and waste disposal
- Nuclear safety and risk assessment, source term reconstruction, dose assessments, criticality analysis, and thermohydraulic assessment (i.e. power plant steam generation)
- Systems engineering and structural engineering assessments
- Cooling tower operation, cooling tower plumes, thermal discharge assessment, and consumptive water use
- Technical patents, nuclear fuel rack design and manufacturing, and nuclear equipment design and manufacturing
- Reliability engineering, & aging plant management assessments, in-service inspection
- Employee awareness programs, whistleblower protection, and public communications
- Quality Assurance (QA) & records

Nuclear Engineering Experience 1970 to Present

Expert witness testimony in nuclear litigation and administrative hearings in federal, international, and state court and to Nuclear Regulatory Commission, including but not limited to: Three Mile Island, US Federal Court, US NRC, NRC ASLB, ACRS, and Petition Review Board, California Public Utilities Commission, Canadian Nuclear Safety Commission (CNSC), Diet (Parliament) Japan, House of Commons (UK), Vermont State Legislature, Vermont State Public Service Board, Vermont Public Utility Commission, Florida Public Service Board, Czech Senate, Connecticut State Legislature, Western Atlas Nuclear Litigation, U.S. Senate Nuclear Safety Hearings, Peach Bottom Nuclear Power Plant Litigation, and Office of the Inspector General NRC, and numerous Congressional Briefings and Hearings.

Nuclear Engineering, Safety, and Reliability Expert Witness 1990 to Present

- Fairewinds Associates, Inc – Chief Engineer, 2005 to Present

- Arnold Gundersen, Nuclear Safety Consultant and Energy Advisor, 1995 to 2005
- GMA – 1990 to 1995, including expert witness testimony regarding the accident at Three Mile Island.

Nuclear Energy Services, Division of PCC (Fortune 500 company) 1979 to 1990

Corporate Officer and Senior Vice President - Technical Services – Responsible for overall performance of the company's Inservice Inspection (ASME XI), Quality Assurance (SNTC 1A), and Staff Augmentation Business Units – up to 300 employees at various nuclear sites.

Senior Vice President of Engineering – Responsible for the overall performance of the company's Site Engineering, Boston Design Engineering and Engineered Products Business Units. Integrated the Danbury based, Boston based and site engineering functions to provide products such as fuel racks, nozzle dams, and transfer mechanisms and services such as materials management and procedure development.

Vice President of Engineering Services – Responsible for the overall performance of the company's field engineering, operations engineering, and engineered products services. Integrated the Danbury-based and field-based engineering functions to provide numerous products and services required by nuclear utilities, including patents for engineered products.

General Manager of Field Engineering – Managed and directed NES' multi-disciplined field engineering staff on location at various nuclear plant sites. Site activities included structural analysis, procedure development, technical specifications and training. Have personally applied for and received one patent.

Director of General Engineering – Managed and directed the Danbury based engineering staff. Staff disciplines included structural, nuclear, mechanical and systems engineering. Responsible for assignment of personnel as well as scheduling, cost performance, and technical assessment by staff on assigned projects. This staff provided major engineering support to the company's nuclear waste management, spent fuel storage racks, and engineering consulting programs.

New York State Electric and Gas Corporation (NYSE&G) — 1976 to 1979

Reliability Engineering Supervisor – Organized and supervised reliability engineers to upgrade performance levels on seven operating coal units and one that was under construction. Applied analytical techniques and good engineering judgments to improve capacity factors by reducing mean time to repair and by increasing mean time between failures.

Lead Power Systems Engineer – Supervised the preparation of proposals, bid evaluation, negotiation and administration of contracts for two 1300 MW NSSS Units including nuclear fuel, and solid-state control rooms. Represented corporation at numerous public forums including TV and radio on sensitive utility issues. Responsible for all nuclear and BOP portions of a PSAR, Environmental Report, and Early Site Review.

Northeast Utilities Service Corporation (NU) — 1972 to 1976

Engineer – Nuclear Engineer assigned to Millstone Unit 2 during start-up phase. Lead the high velocity flush and chemical cleaning of condensate and feedwater systems and obtained discharge permit for chemicals. Developed Quality Assurance Category 1 Material, Equipment and Parts List. Modified fuel pool cooling system at Connecticut Yankee, steam generator blowdown system and diesel generator lube oil system for Millstone. Evaluated Technical Specification Change Requests.

Associate Engineer – Nuclear Engineer assigned to Montague Units 1 & 2. Interface Engineer with NSSS vendor, performed containment leak rate analysis, assisted in preparation of PSAR and performed radiological health analysis of plant. Performed environmental radiation survey of Connecticut Yankee. Performed chloride intrusion transient analysis for Millstone Unit 1 feedwater system. Prepared Millstone Unit 1 off-gas modification licensing document and Environmental Report Amendments 1 & 2.

Rensselaer Polytechnic Institute (RPI) — 1971 to 1972

Critical Facility Reactor Operator, Instructor – Licensed AEC Reactor Operator instructing students and utility reactor operator trainees in start-up through full power operation of a reactor.

Public Service Electric and Gas (PSE&G) — 1970

Assistant Engineer – Performed shielding design of radwaste and auxiliary buildings for Newbold Island Units 1 & 2, including development of computer codes.

Additional Publications (continued from front page)

Co-author — *Fairewinds Associates 2009-2010 Summary to JFC*, July 26, 2010 State of Vermont, Joint Fiscal Office, (<http://www.leg.state.vt.us/jfo/envy.aspx>).

Co-author — *Supplemental Report of the Public Oversight Panel Regarding the Comprehensive Reliability Assessment of the Vermont Yankee Nuclear Power Plant July 20, 2010*, to the Vermont State Legislature by the Vermont Yankee Public Oversight Panel.

Co-author — The Second Quarterly Report by Fairewinds Associates, Inc to the Joint Legislative Committee regarding buried pipe and tank issues at Entergy Nuclear Vermont Yankee and Entergy proposed Enexus spinoff. See two reports: *Fairewinds Associates 2nd Quarterly Report to JFC* and *Enexus Review by Fairewinds Associates*.

Co-author — Fairewinds Associates, Inc *First Quarterly Report to the Joint Legislative Committee*, October 19, 2009.

Co-author — *Report of the Public Oversight Panel Regarding the Comprehensive Reliability Assessment of the Vermont Yankee Nuclear Power Plant*, March 17, 2009, to the Vermont State Legislature by the Vermont Yankee Public Oversight Panel.

Co-author — *Vermont Yankee Comprehensive Vertical Audit – VYCVA – Recommended Methodology to Thoroughly Assess Reliability and Safety Issues at Entergy Nuclear Vermont Yankee*, January 30, 2008 *Testimony to Finance Committee Vermont Senate*.

Co-author — *Decommissioning Vermont Yankee – Stage 2 Analysis of the Vermont Yankee Decommissioning Fund – The Decommissioning Fund Gap*, December 2007, Fairewinds Associates, Inc. Presented to Vermont State Senators and Legislators.

Co-author — *Decommissioning the Vermont Yankee Nuclear Power Plant: An Analysis of Vermont Yankee's Decommissioning Fund and Its Projected Decommissioning Costs*, November 2007, Fairewinds Associates, Inc.

Media Organizations - including and not limited to:

Featured Nuclear Safety and Reliability Expert (1990 to present) for Television, Newspaper, Radio, & Internet – Including, and not limited to: CNN: JohnKingUSA, CNN News, Earth Matters; DemocracyNow, NECN, WPTZ VT, WTNH, VPTV, WCAX, RT, CTV (Canada), CCTV Burlington, VT, CAN TV (Chicago Access), ABC, TBS/Japan, Bloomberg: EnergyNow, KPBS, Japan National Press Club (Tokyo), Italy National Press Club (Rome), The Crusaders, Front Page, Five O'Clock Shadow: Robert Knight, Mark Johnson Show, Steve West Show, Anthony Polina Show, WKVT, WDEV, WVPR, WZBG CT, Seven Days, AP News Service, Houston Chronicle, Christian Science Monitor, Reuters, The Global Post, International Herald, The Guardian, New York Times, Washington Post, LA Times, Miami

Herald, St. Petersburg Times, Brattleboro Reformer, Rutland Herald, Times-Argus, Burlington Free Press, Litchfield County Times, The News Times, The New Milford Times, Hartford Current, New London Day, Vermont Daily Briefing, Green Mountain Daily, EcoReview, Huffington Post, DailyKos, Voice of Orange County, AlterNet, Common Dreams, Gendai Media, Truthout, Progressive Radio Network, Project Censored and numerous other national and international blogs

Public Service, Cultural, and Community Activities

2008 to Present –Fairewinds Energy Education Corp 501(C)3 non-profit board member

2005 to Present – Public presentations and panel discussions on nuclear power safety, reliability, economics, waste disposal, and decommissioning at numerous universities and colleges in the US, Canada, and Japan – including: DePaul University, Plymouth State University, Northwestern University, Life Chiropractic West, Middlebury College, McGill University, Hofstra University, New York School of Medicine, Cal Poly, Sonoma State, Amherst College, University of Vermont, Vermont Law School, Tokyo University, and before the Nuclear Regulatory Commission in hearings, Federal Court, Town and City

Select Boards, Legal Panels, Local Schools, and via National & International Media: Television, Radio, Print, & Internet.

2007-2008 – Energy Production – created concept of Solar Panels on Burlington High School; worked with Burlington Electric Department and Burlington Board of Education Technology Committee on Grant for installation of solar collectors for Burlington Electric peak summer use; Grant was developed with assistance from Senator Sanders.

Vermont State Legislature – Public Testimony to Legislative Committees regarding nuclear power and energy issues

NNSN – National Nuclear Safety Network, Founding Advisory Board Member, meetings with and testimony to the Nuclear Regulatory Commission Inspector General (NRC IG)

New York State Electric & Gas (NYSE&G) Speakers Club speaking about nuclear waste issues.

Northeast Utilities Representative Conducting Public Lectures on Nuclear Safety Issues with the Northeast Utilities Speakers Bureau

End

**UNITED STATES OF AMERICA
U.S. NUCLEAR REGULATORY COMMISSION**

BEFORE THE SECRETARY

In the Matter of:
SOUTHERN NUCLEAR OPERATING CO.
License Amendment Application for
Combined Licenses NPF-91
Vogtle Electric Generating Plant Unit 3

Docket No. 52-025-LA-3

CERTIFICATE OF SERVICE

I hereby certify that the Curriculum Vitae of Arnold Gundersen supporting the

**MOTION TO REOPEN PROCEEDING AND REQUEST TO AMEND
CONTENTION BY THE BLUE RIDGE ENVIRONMENTAL DEFENSE
LEAGUE AND ITS CHAPTER CONCERNED CITIZENS OF SHELL BLUFF
REGARDING SOUTHERN NUCLEAR OPERATING COMPANY'S REQUEST
FOR A LICENSE AMENDMENT AND EXEMPTION FOR
UNIT 3 AUXILIARY BUILDING WALL 11 SEISMIC GAP REQUIREMENTS,
LAR-20-001**

has been filed through the Electronic Information Exchange system
this 7th day of December, 2020.



Louis A. Zeller
Blue Ridge Environmental Defense League
PO Box 88
Glendale Springs, NC 28629
(336) 982-2691
BREDL@skybest.com