

**NUCLEAR WATCH SOUTH BRIEF IN SUPPORT OF PROFESSIONAL
ENGINEERING BOARD INVESTIGATION OF EXPIRED ENGINEERING
LICENSES OF SOUTHERN NUCLEAR COMPANY (PEF003372) AND
SOUTHERN COMPANY (PEF003472) AND AMENDED REQUEST FOR
INVESTIGATION OF RELATED ALLEGATIONS OF UNREVIEWED,
UNSTAMPED ENGINEERING BLUEPRINTS AT VOGTLE 3 & 4**

Comes now, Nuclear Watch South, Inc., Petitioner, Georgia non-profit business in good standing since 1978 and serving the interest of more than 1,000 Georgia members, and submits to the Georgia State Board of Registration for Professional Engineers and Land Surveyors (“Board”), this Brief in Support of Investigation and Amended Request for Investigation of Related Allegations of Unreviewed, Unstamped Blueprints at Vogtle 3 and 4.

BACKGROUND AND OVERVIEW

On December 12, 2017, Nuclear Watch South (“Petitioner”) filed a request for investigation into alleged engineering violations by Southern Nuclear Company and previous construction contractors at the Vogtle 3 & 4 nuclear construction project. The Board confirmed receipt of this original filing via letter dated December 13, 2017. On January 9, 2018, Georgia Power Company replied to Nuclear Watch South’s request.⁵

On the date of Nuclear Watch South’s original filing, December 12, 2017, records showed that the Southern Nuclear Georgia Engineering Firm license number PEF003372 expired on June 30, 2000.⁶ As of February 6, 2018, the Southern Nuclear engineering license continues to be lapsed.⁷ The Southern Nuclear engineering license has now been expired for a period of over seventeen and one-half (17.5) years. Additionally, the engineering license for parent Southern Company-Engineering & Generation Services license number PEF003472, is also expired, with a last renewal date of April 11, 2000.⁸

In its January 9, 2018, response to Nuclear Watch South’s December 12, 2017, request for investigation, Georgia Power Company refers to “Southern Nuclear Operating Company” as the “licensed constructor”⁹ for the facility, yet

⁵ Georgia Power Company, Reply Letter, January 9, 2018. Attached here as “Ex. E.”

⁶ Georgia Secretary of State, Office of Professional Licensing, Licensee Details, December 12, 2017. Attached here as “Ex. B.”

⁷ Georgia Secretary of State, Office of Professional Licensing, Licensee Details, February 6, 2018. Attached here as “Ex. C.”

⁸ Georgia Secretary of State, Office of Professional Licensing, Licensee Details, February 7, 2018. Attached here as “Ex. D.”

⁹ Georgia Power Company, Reply Letter, January 9, 2018, Page 2. Attached here as “Ex. E.”

current documents continue to show that Southern Nuclear remains in possession of an expired engineering license.¹⁰ In the same letter, Georgia Power Company asserts that “Southern Nuclear maintain(s) the highest standards of ... compliance.”¹¹ It is unclear how possessing an expired license for over seventeen years is a high standard of compliance. Further investigation by this Board is warranted.

ARGUMENT

I. Neither Southern Company nor Southern Nuclear Company are Licensed to Practice Engineering in Georgia and Appear to be in Violation of Georgia law; Allegations of Unreviewed, Unstamped Blueprints Remain Unanswered and Uninvestigated; Investigation by this Professional Board is Necessary.

A. **Southern Nuclear Company and Southern Company Engineering and Generation Services are in possession of lapsed engineering licenses**

Southern Nuclear Company has been the entity charged with overseeing and implementing design changes at Vogtle 3 and 4 since the 2017 bankruptcy of Westinghouse Electrical Company and the complete exit from reactor construction by it, and its parent, Toshiba. (See: “*Southern Nuclear, a subsidiary of Southern Company and the operator of the two existing units at Vogtle, will now oversee construction activities at the site.*”).¹² As part of the final fiduciary settlement between Toshiba and Georgia Power, Westinghouse and Toshiba no longer provide a manufacturer’s warranty for the AP1000 reactors at Vogtle. Additionally, the engineering license for parent Southern Company-Engineering & Generation Services, license number PEF003472, is also expired, with a last renewal date of April 11, 2000.¹³ Actions being undertaken at Vogtle 3 and 4 by Southern Nuclear Company and/or parent Southern Company - Engineering and Generation Services have the appearance of being in violation of the plain language of Georgia law which provides in full:

“It shall be unlawful for this state or any of its political subdivisions such as a county, municipality, or school district, or agencies thereof, or for any private or commercial entity to engage in the construction of any

¹⁰ Georgia Secretary of State, Office of Professional Licensing, Licensee Details, February 6, 2018. Attached here as “Ex. C.”

¹¹ Georgia Power Company, Reply Letter, January 9, 2018. Attached here as “Ex. E.”

¹² “Georgia Power Signs New Contractor for Vogtle Expansion,” Power Engineering. July 31, 2017. Available at <http://www.power-eng.com/articles/2017/07/georgia-power-signs-new-contractor-for-vogtle-expansion.html> and attached here as “Ex. F.”

¹³ Georgia Secretary of State, Office of Professional Licensing, Licensee Details, February 7, 2018. Attached here as “Ex. D.”

work or structures involving professional engineering which by the nature of their function or existence could adversely affect or jeopardize the health, safety, or welfare of the public unless the plans and specifications have been prepared under the direct supervision or review of and bear the seal of, and the construction is executed under the direct supervision of or review by, a registered professional engineer or architect.”

O.C.G.A. §43-15-24(a)

It is extremely problematic for Southern Nuclear, an operating entity that has never itself constructed a nuclear facility, to be conducting high-risk engineering and construction oversight of nuclear facility design and development without even possessing a valid engineering license, and without any protection of a warranty. As you will agree, it is necessary to possess a valid license to drive a car or get married in Georgia, one would believe the same is true for the design and engineering of nuclear sites and radioactive waste facilities in Georgia. Further investigation by this Board is necessary.

B. Allegations of unreviewed, unstamped blueprints utilized in Vogtle 3 & 4 construction remain uninvestigated and unanswered; this Board should echo concerns raised by the National Society for Professional Engineers in its October 2017 request for Nuclear Regulatory Commission investigation into Westinghouse’s blueprint practices.

Following the bankruptcy of Westinghouse in March 2017, utilities constructing the only other U.S. AP1000 reactor project besides Vogtle 3 & 4, *i.e.*, V.C. Summer in South Carolina, abandoned the beleaguered project. In the wake of the disappointing \$9 billion effort to build the Summer AP1000 reactors, several shocking revelations emerged, among them, an internal memo¹⁴ from 2011 warning of serious problems stemming from Westinghouse’s inexperience with construction and questioning Westinghouse’s philosophy that it did not need to utilize professional engineers in all aspects of its nuclear construction projects. In discussing the standard practice of sealing engineering drawings, the author states that the professional engineer’s seal “also represents an acknowledgement by the Engineer of Record that he/she is willing to certify the safety and reliability of the design.”¹⁵ The document includes reference to the possible litigation and resultant

¹⁴ The Case for Paradigm Shift: An assessment of project delivery risk against the backdrop of industry practice, by M.J. Evesges, PE, Pages 5-6. August 2011. Attached here as “Ex. G.”

¹⁵ *Id.* at 6.

uncertainty that could result from the practice of unstamped or unreviewed blueprints.”¹⁶

One of the most important aspects of sealing the documents with a review by a professional, licensed engineer is that licensed engineer goes on record in a chain of authority and accountability for the project details.

“The practice of professional engineering for any firm, corporation, partnership, association or other business entity shall not be considered to be under the direction of a professional engineer unless such professional engineer bears a continuing bonafide relation thereto and has such authority from the governing body of such business entity as would result in its being legally liable for all such professional engineer's professional acts and judgments.”

Georgia Secretary of State Rule 180-10-.01(3)
Corporate Practice: Professional Engineering
(emphasis added).

In its reply to Nuclear Watch South’s December 12, 2018 request for investigation, Georgia Power Company does not argue that all of the blueprints being used in Vogtle 3 & 4 construction are reviewed and stamped by professional engineers. Rather, the company claims that the Nuclear Regulatory Commission (NRC) is overseeing Westinghouse’s practice of using drawings by amateurs.

In response to the serious allegations in South Carolina that Westinghouse and other contractors used unqualified and unlicensed individuals to design aspects of V.C. Summer, the National Society of Professional Engineers (NSPE) wrote to the NRC asking for the agency to conduct a thorough and complete investigation into whether Westinghouse attorneys were narrowly interpreting South Carolina professional engineering statutes to evade generally accepted design and construction practices.¹⁷ Nuclear Watch South requests that this Board will request an NRC investigation either under its own power or seek the support of NSPE in obtaining NRC input into this potentially serious engineering gap.

¹⁶ *Id.*

¹⁷ National Society of Professional Engineers (NSPE), Letter of October 26, 2017. Attached here as “Ex. J.”

Georgia Power Company also relies on a 2012 memo from the consortium of Westinghouse Electric Company¹⁸ and now-defunct Stone & Webster to support its underlying assertion that all engineering oversight is safe and compliant.¹⁹ The 2012 memo refers to the alignment in “overall ... philosophy” and “corporate positions” of both Westinghouse Electric Company and Stone and Webster at Vogtle and at “other AP1000 projects in the US.”²⁰

The only “other AP1000 project in the US” was located in South Carolina at the V.C. Summer plant, which has since been shuttered due to a number of concerns, one of them being revelations about delays from engineering and design changes being made at the job site and non-constructible blueprints which lacked professional stamp or oversight. Indeed, investigation in South Carolina revealed that “construction drawings for the unfinished reactors were used at V.C. Summer without having them vetted and approved by professional engineers.”²¹ One engineer close to the South Carolina project is quoted as saying:

Blueprints that were issued for construction: started showing up at the [V.C. Summer site] with so many flaws nearly every drawing was revised on site ... By the summer and fall of 2015, an estimated 600 engineering changes were made per month, according to an audit produced by Bechtel ... Some of those design changes required more paperwork than the original drawings, Bechtel employees found. It was suspected that Westinghouse’s design work was barely outpacing construction. The drawings, the audit found, were “often not constructible.”²²

Petitioner requests that this Board join the NSPE request or, in the alternative, make an independent request to the NRC as a part of its investigation.

¹⁸ As a relevant historical reference, Westinghouse (designer of Vogtle 3 & 4 AP1000 reactors) and Bechtel, (currently retained as construction contractor for Vogtle construction under the oversight of Southern Nuclear) were authors of a historic blueprint error at the Diablo Nuclear Plant in California. (See: “*The mix-up that caused the improper placement of supports designed to protect the cooling systems of the two Diablo Canyon nuclear reactors from earthquakes occurred because a single, transparent blueprint was prepared for both, and someone failed to attach instructions to flip it over.*”). The Diablo error occurred in 1977 but was not discovered until 1981. “Coast A-Plant Construction Error Tied to Missing Guide to Blueprint,” by Judith Cummings, Special to the New York Times, October 2, 1981.

¹⁹ Westinghouse Electric Company LLC, March 30, 2012, Page 14. Attached here as “Ex. H.”

²⁰ *Id.*

²¹ “Stamped for Failure,” by Andrew Brown at the Charleston Post and Courier. September 24, 2017. https://www.postandcourier.com/business/stamped-for-failure-westinghouse-and-scana-used-unlicensed-workers-to/article_3ea2046a-9d39-11e7-a186-cb396c86b8b9.html. “Ex. I.”

²² *Id.* at 9.

II. Georgia Power Company's Response of False and Misleading Procedural Allegations, Incongruent Arguments, and Logical Fallacy in Reply to Petitioner's Original Request for Investigation Should be Rejected; Further Investigation by the Board is Necessary

In its response to Nuclear Watch South's original request, Georgia Power Company responded on January 9, 2018, alleging that Nuclear Watch South had failed to adhere and otherwise comply with the processes relevant to this Board.²³ That assertion should be rejected because it is in direct contradiction to the black letter of the rules and regulation of procedure, and is in opposition with the stated purpose of the Board.²⁴ Similarly, Georgia Power's assertion that investigation should be denied because Nuclear Watch South's request lacks specificity should be dismissed because it is contradiction with the distinct purpose of the investigative arm of this Board to determine specific instances of misconduct.

A. Petitioner's Original Request for Investigation is Grounded in Procedural Compliance; Investigation Should be Granted.

"We all have Laws and Rules to follow and if not, we are subject to disciplinary actions," writes the Chair of the Georgia Board of Professional Engineers & Land Surveyors in the December 2017 "Board Matters" Newsletter.²⁵

According to the Georgia General Assembly, the purpose of engineering legislation and professional oversight is "(T)o safeguard life, health, and property and to promote the public welfare."²⁶ The State Board of Professional Engineers and Land Surveyors is assigned the duty to administer that charge.²⁷ Concurrent with this purpose is the ability of citizens and consumers to submit requests for investigation and complaints to the Board.

A party who is not represented by an attorney shall sign his pleading and state his address and telephone number. Except when otherwise specifically provided by rule or statute, pleadings need not be verified or accompanied by affidavit." Georgia Secretary of State Rule §295-3-.08. In accordance with these guidelines, Petitioner Nuclear Watch South complied with both the spirit and actual regulation regarding complaint procedure.

²³ Georgia Power Company, Reply Letter, January 9, 2018. Attached here as "Ex. E."

²⁴ See: O.C.G.A. §43-15-1; See also: O.C.G.A. §43-15-3(a).

²⁵ Georgia Board of Professional Engineers & Land Surveyors, "Board Matters," December 2017. Available at <http://sos.ga.gov/PLB/acrobat/Forms/09%20Board%20Newsletter%20-%20December%202017.pdf>, accessed on 1/26/2018 and attached here as "Ex. K."

²⁶ O.C.G.A. §43-15-1.

²⁷ O.C.G.A. §43-15-3(a).

Allegations to the contrary should be dismissed as paper tigers that they are, and this Board should proceed with its investigation.

B. Specificity is the Core Purpose of Action and Investigation by this Board.

Georgia Power asserts that this body should deny further investigation because Nuclear Watch South “has not provided any detail as to which drawings or set of drawings it believes are non-compliant.”²⁸ Georgia Power’s argument is a corruption of the investigative authority of this body, which is defined by Georgia law:

(T)he board shall have the power (t)o adopt and enforce regulations implementing this chapter, including regulations governing the professional conduct of those individuals registered by it; (and) to investigate conduct subject to regulation by the board; the chairman or the member of the board who is his or her delegate may administer oaths to witnesses appearing before the board; and the board may secure the enforcement of its subpoenas in the manner provided by Chapter 13 of Title 50, the "Georgia Administrative Procedure Act.”

O.C.G.A. §43-15-6(a)(1) and (2)

In its January 9, 2018 response letter, Georgia Power compares the situation at Vogtle 3 and 4 and the facts underlying Nuclear Watch South’s request for investigation to “similar generic allegations made against Westinghouse by public advocacy groups in South Carolina related to the V.C. Summer 2 and 3 project.”²⁹ This is an unfortunate parallel for the case of Georgia Power/Southern Nuclear, because in South Carolina, allegations have since rung true, such that the National Society of Professional Engineers is seeking an investigation.³⁰

Georgia Power also asserts that it (or Southern Nuclear or Southern Company, this is unclear) has conducted a “thorough review” of Westinghouse design procedures, those procedures’ compliance with federal and state laws and regulations, as well as Westinghouse’s execution of its design procedures.”³¹ This

²⁸ Georgia Power Company, Reply Letter, Page 1, January 9, 2018. Attached here as “Ex. E.”

²⁹ Georgia Power Company, Reply Letter, Page 1, January 9, 2018. Attached here as “Ex. E.”

³⁰ National Society of Professional Engineers (NSPE), Letter of October 26, 2017. Attached here as “Ex. J.”

³¹ Georgia Power Company, Reply Letter, Page 2, January 9, 2018. Attached here as “Ex. E.”

statement cannot be reconciled with Nuclear Watch South's experience related in its original request of December 12, 2017:

In public hearings currently underway at the Georgia Public Service Commission (PSC) considering cancellation of the Vogtle 3 & 4 projects, neither Georgia Power witnesses, nor PSC construction monitors were able to give clear answers to whether the practice of using unlicensed engineers and unreviewed designs which has come to light in South Carolina, has also taken place in Georgia.³²

Arguments from the company appear to be categorized in one of two categories: (1) "We got this" where "we" is an inexperienced, unlicensed entity that lacks a valid engineering license and/or (2) "They got this," where "they" are two now-ruined companies, Westinghouse and Stone & Webster and/or the NRC which has not yet spoken to these concerns. Petitioner therefore requests this Board exercise its jurisdiction and authority to investigate the actual engineering practices that have been taken in Vogtle 3 & 4 construction.

III. Investigation of Lapsed Licenses is Within the Jurisdiction and Authority of this Board and Action by this Board is Necessary to Ensure the Protection of Public Health and Safety

In its January 9 reply letter, Georgia Power Company speculates there is a "misunderstanding" about oversight at the facility.³³ To be clear, there is no misunderstanding about federal oversight of standard design. These statements by Georgia Power Company must not obfuscate the question before the board which, to be clear is:

Why has Southern Nuclear Company possessed a lapsed engineering license for over seventeen years yet continues to conduct professional engineering activities at Vogtle site in Waynesboro, Georgia?

All parties agree that "The NRC's certification permits construction of the standard design,"³⁴ By repeatedly citing to the authority of the federal Commission, however, the Company is either confused about the structure of its own project or is

³² Nuclear Watch South, "Request/Complaint to the Georgia Professional Licensing Boards Concerning the Westinghouse Experimental AP100 Reactor and Use of Professional Engineers to Seal (Certify) Design Drawings - Investigation Warranted to Determine Compliance with State Laws," December 12, 2017. Attached here as "Ex. A."

³³ Georgia Power Company, Reply Letter, Page 1, January 9, 2018. Attached here as "Ex. E."

³⁴ *Id.* at 2, *emphasis added*.

engaging in willful concealment of the material issue at hand, which is that **Southern Nuclear, the operating entity of the project, lacks a valid engineering license from the State of Georgia.**

Counsel for Georgia Power do not even discuss the entity in question, Southern Nuclear, until the second to last line of page two, and buried in a paragraph on page 3, when the powerful statement is made that “Georgia Power and Southern Nuclear maintain the highest standards of safety, quality, and compliance with design requirements.”³⁵ Yet, their licenses are expired. Please investigate.

IV. Summary and Recommendations

With 21,077 professional engineers within its boundaries, the State of Georgia has one of the highest numbers of P.E. licensees in the United States.³⁶ These engineering and other professionals are required to hold an active license in good standing and comply with all rules, regulations, and laws of the State of Georgia in order to conduct activities related to their profession.

Southern Company Engineering, and Southern Nuclear, responsible for construction and engineering activities at Vogtle 3 and 4, appear to have failed to comply with this basic requirement for a period of over seventeen years.

The National Society of Professional Engineers (NSPE) has requested an investigation into the amateur blueprint issue. We recommend that you join the NSPE request or, in the alternative, independently investigate under the authority and jurisdiction granted by statute. Due to the magnitude of the risk involved, further investigation by this Board is requested and warranted.

³⁵ *Id.*

³⁶ National Council of Examiners for Engineering and Surveying®. Number of Licensees by Jurisdiction, 2014. <https://ncees.org/wp-content/uploads/2016/05/Number-of-licensees-in-2014-and-number-of-licenses-since-1937.pdf>.

List of Exhibits

- A. Original request for investigation of Southern Nuclear Company/Georgia Power Company, submitted by Nuclear Watch South, December 12, 2017
- B. Southern Nuclear expired license, December 2017
- C. Southern Nuclear expired license, February 2018
- D. Southern Company - Engineering and Generation Services, expired license, February 2018
- E. Georgia Power Company Response Letter, January 9, 2018
- F. "Georgia Power Signs New Contractor for Vogtle Expansion," Power Engineering. July 31, 2017.
- G. "The Case for Paradigm Shift: An assessment of project delivery risk against the backdrop of industry practice," by M.J. Eveses, PE, August 2011.
- H. Westinghouse Memo, 2012
- I. "Stamped for Failure," by Andrew Brown, Charleston Post and Courier. September 24, 2017.
- J. National Society of Professional Engineers (NSPE) Letter, October 26, 2017
- K. Georgia Professional License 'Board Matters' Newsletter, December 2017

Certificate of Delivery

I hereby certify that I have delivered via U.S. Mail, certified U.S. Mail, and e-mail where available, a copy of the foregoing Cover Letter, Brief in Support of Request for Investigation and Supporting Documentation to the following parties:

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