Friends of the Earth

Request/Complaint to the South Carolina Department of Labor, Licensing and Regulation (LLR) Concerning the Westinghouse Experimental AP1000 Reactor and Use of Professional Engineers to Seal (Certify) Design Drawings – Investigation Warranted to Determine Compliance with State Laws

Tom Clements, on Behalf of Myself and Friends of the Earth

October 19, 2017

Attention: Ms. Emily H. Farr, Director of the South Carolina Department of Labor, Licensing and Regulation

I am filing this document with the South Carolina Department of Labor, Licensing and Regulation (LLR) to request an investigation by the department to determine whether state law and regulations have been complied with concerning preparation of design drawings for the Westinghouse experimental AP1000 nuclear power reactors that until recently have been under construction in South Carolina.

Given the gravity of the matter at hand and that it is under review by many levels of state and federal government and that the news broke on September 24, 2017 about use of improperly licensed engineers to design the reactor, I would imagine that the requested investigation is already under way by the LLR. As I have not seen any reporting about that in the media and have seen no news about the matter posted by the LLR, I am submitting this document to make sure a formal request is before you to conduct an investigation.

While reactor construction has halted there are those, including Governor Henry McMaster, who are seeking ways for construction to be resumed. Thus, the issue of design licensing will remain an on-going matter into the future.

The requested investigation concerns the possible use of improperly qualified individuals who may have prepared design drawings for the Westinghouse AP1000 nuclear reactors that until recently were under construction by South Carolina Electric & Gas (SCE&G) at the V.C. Summer site in Jenkinsville, South Carolina. Unqualified individuals rather than licensed professional engineers may have prepared design drawings and such drawings may have altogether lacked a proper stamp or were stamped by those who were not duly licensed professional engineers.

The companies in questions are Westinghouse Electric Company LLC (with addresses listed on the LLR website for Madison, and Rock Hill, SC) and WECTEC Global Project Services Inc. (with

1112 Florence Street Columbia, SC 29201
803.834.3084 phone & fax • tomclements329@cs.com • www.foe.org

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addresses listed for Jenkinsville, SC and Charlotte, NC). Both of these companies are listed by the LLR as holding a "certificate of authorization" and those certificates are listed as being "supervised by" individuals whose names are specified on the LLR website.

This issue is of highest concern to public health and safety and merits prompt attention by the Department of Labor, Licensing and Regulation (and the South Carolina State Board of Registration for Professional Engineers and Surveyors).

Background Concerning Design Documentation

The matter of reactor design drawings came to public attention on September 24, 2017 in an important article by Andrew Brown in the Charleston (South Carolina) *Post and Courier* entitled *Stamped for failure: Westinghouse and SCANA used unlicensed workers to design abandoned S.C. nuclear reactors.*

The article makes clear that problems existed with the "stamping" of rector design drawings, as can be seen in these extracts from the article:

> Westinghouse and other contractors used unlicensed workers to design parts of two nuclear reactors in South Carolina, a potentially criminal shortcut that raises fresh questions about why the multibillion-dollar energy project failed.
>
> In South Carolina and most states, every drawing for a large building project demands the stamp and signature of a licensed engineer — especially when that construction affects the public's health and safety. Not following that law can lead to criminal penalties.
>
> It remains unclear exactly who was producing the unlicensed designs that led to problems, what education they had, where they were from or what their professional backgrounds were.
>
> To make sure the drawings were done properly, professional engineers needed to review the documents and attest to their accuracy. The drawings had to be created by a licensed engineer or by someone under their direct supervision, according to state law.
>
> Either way, the drawings required a signature to ensure people could determine which engineer designed those sections of the reactor in case something went wrong.

Amid this backdrop, SCANA's leadership approached Westinghouse's team. They asked the Pennsylvania-based company to provide an opinion of whether state engineering laws had to be followed when assembling the reactors.

In response, Westinghouse's deputy general counsel drafted a 13-page legal opinion on May 7, 2012, arguing the engineering laws in South Carolina, Georgia and any other state where an AP1000 reactor was built didn't apply. They reasoned their federal licenses superseded state requirements.

The need for professional engineers to approve all of the reactor designs was a waste of time and money, Westinghouse's attorneys said. Getting the required stamps and signatures for the reactors at V.C. Summer and Plant Vogtle in Georgia would only "disrupt and frustrate," they said.

The engineers at V.C. Summer did what they could to fix the problems as the designs arrived, but when several of them realized drawings weren't officially "sealed," the issue became more serious.

A large part of the civil engineering designs that lay out the steel and concrete at the plant were stamped, engineers told The Post and Courier. That wasn't the case for the mechanical and electrical blueprints that outline the reactors' pipes, pumps, fans and electrical systems.

Concerns about the unlicensed engineering were raised up the chains of command in both Westinghouse and SCANA in past years, engineers said, only to be slapped down by more senior management.

A Westinghouse "opinion" dated May 7, 2012 and titled "Westinghouse/Stone & Webster Consortium Position on the Applicability of South Carolina State Professional Engineering Laws and Building Codes at V.C. Summer Units 2 & 3" was linked along with the article above.

That opinion states that it was requested of Westinghouse Electric Company LLC and Stone & Webster Inc - the reactor design and construction "consortium"- by South Carolina Electric & Gas, the company in charge of the project (with 55% ownership) and holding the Combined Operating License for it from the U.S. Nuclear Regulatory Commission.

The opinion clearly states that "The Consortium has reached the conclusion that the doctrine of federal preemption exempts the design and construction of the AP1000 of those aspects directly associated with nuclear or radiological safety, including the nuclear island from the application of South Carolina laws."

The opinion concludes that "The imposition of South Carolina PE sealing requirements would add significant schedule delay and add significant costs to the construction of the AP1000 Standard Plant for V.C. Summer Units 2 & 3."

Thus, it appears that the consortium partners and SCE&G aimed to avoid following state law as a way to cut costs and speed up the schedule, while ignoring potential impacts to health and safety. It is unknown if the LLR or any state entity has reviewed the opinion and responded.

It must also be noted that a secret report dated February 5, 2016 and prepared by the Bechtel Power Corporation for SCE&G and Santee Cooper (45% owner of the failed project) pointed out a host of problems with the reactor construction project. The Bechtel report was released to the public by Governor Henry McMaster on September 3, 2017.

Bechtel determined that "the issued design is often not constructible, resulting in a significant nuclear of changes and causing delays." The report notes that at the time it was written that there were more than 1000 "drawing holds" but is not clear as to the reasons why. The document details a host of problems facing the project but does not seem to indicate that Bechtel believed that the project was exempt from South Carolina laws and regulations or that drawings did not have to be stamped by a professional engineer. The report merits close scrutiny by the Department of Labor, Licensing and Regulation.

South Carolina Law: Federal Projects not Exempt

In South Carolina law – Title 40, Chapter 22 – Engineers and Surveyors – is clear in its requirements that Professional Engineers or someone working under their direct supervision certify drawings and plans. Under state law there is no exemption for projects in which there is some level of federal involvement.

> **SECTION 40-22-2.** Purpose.
>
> In order to safeguard life, health, and property and to promote the public welfare, the practice of the profession of engineering and surveying in this State is subject to regulation. It is the policy of this State and the purpose of this chapter to encourage the development of professional engineers and surveyors in this State and to promote the accountability for engineering practice and surveying practice in a global economy. The State recognizes the need for qualified engineers and surveyors to support the local and global economy and, to that end, encourages efforts to increase access to accredited education, the examinations, and the experience necessary and appropriate to protect the health, safety, and welfare of South Carolina citizens and to support licensure as the basis of accountability.
>
> **SECTION 40-22-270.** Individual seals; stamping on plans and specifications.
>
> Each licensee and each firm practicing under a certificate of authorization shall obtain a seal of the design authorized by the board and must comply with the

following:

(1) Individual seals must be under the personal custody and control of the licensee and bear the licensee's name, registration license number, and the legend "Professional Engineer" or "Professional Surveyor" except for licenses issued before July 1, 2001, which may have the legend "Registered Professional Engineer" or "Registered Land Surveyor". The seal also shall bear evidence of the license category for professional engineers and the tier designation for professional surveyors.

(2) Seals for firms practicing under a certificate of authorization must bear the firm's name and authorization number.

(3) Plans, specifications, plats, and reports prepared by a licensee or prepared under the licensee's direct supervision must be stamped with seals when filed with public authorities during the life of the licensee's certificate.

(4) Plans and specifications prepared by a licensee or prepared under the licensee's direct supervision must be stamped with seals when issued for use as job site record documents at construction projects within this State.

(5) It is unlawful to seal documents with a seal after the certificate of the licensee or the certificate of authorization in the case of firms named on the seal has expired or has been revoked or suspended unless the certificate has been renewed, reissued, or reinstated.

(6) Where individual seals are affixed to plans, specifications, plats, and reports, the licensee shall affix his signature and date under or across the face and beyond the circumference of the seal. The signature and date must not be applied in a manner that obliterates or renders illegible the licensee's license number or name.

(7) The clerk of court or the register of deeds for any county shall refuse to accept for filing or recording a map, plat, survey, or other document within the definition of surveying, dated after July 1, 1977, which does not have affixed to it the personal signature and prescribed impression seal of a professional surveyor. No charge may be made by a professional surveyor for the application of his impression seal.

(8) The building official, or other designated authority charged with the responsibility of issuing building or similar permits, shall refuse to issue a permit for any undertaking, the plans and specifications for which would require the seal of a professional engineer, unless the permit applicant has furnished satisfactory evidence that the documents were prepared by an engineer licensed as required by this chapter or that the documents are exempt from the requirements of this chapter. The building official, or designated authority charged with the responsibility of issuing building or similar permits, shall report to the board the name and address

of a person who has or is suspected to have violated a provision of this chapter or a regulation promulgated pursuant to this chapter relating to the unlicensed practice of engineering.

(9) The seal and signature of a licensee certifies that the document was prepared by the licensee or his agent. For prototypical documents, the seal and signature of a licensee indicates that he has sufficiently reviewed the document and is able to fully coordinate and assume responsibility for application of the plans.

The law is clear in respect to investigations to be conducted by the Department of Labor, Licensing and Regulation, if so warranted, and about the punishment of those found guilty of violating the law.

SECTION 40-22-80. Investigations of violations; subpoenas; administration of oaths and taking of testimony; charges.

(A) If the board or the director of the Department of Labor, Licensing and Regulation has reason to believe that a person has violated a provision of this chapter or a regulation promulgated under this chapter or if a person files a written complaint with the board or the director of the Department of Labor, Licensing and Regulation charging a person or a business with a violation of a provision of this chapter or a regulation promulgated under this chapter, the board may initiate an investigation.

(B) In accordance with Section 40-1-80, the board, under the hand of its chairman and the seal of the board, may issue subpoenas to compel the attendance of witnesses and the production of documents and also may administer oaths, take testimony, hear proofs, and receive exhibits in evidence for all purposes required in the discharge of duties under this chapter. Upon failure of an individual or firm to obey a subpoena or to answer questions propounded by the board, the board may apply to an administrative law judge for an order requiring the person or firm to comply.

(C) A person may prefer charges of fraud, deceit, gross negligence, incompetency, or misconduct against a registrant and charges of unlicensed practice against nonregistrants. The charges must be in writing, supported by affidavit of specific wrongdoing, and filed with the chairman of the board. All charges, unless dismissed by the board as unfounded, trivial, or otherwise without merit, must be investigated by the board to determine if a hearing is warranted.

(D) The board may not consider charges in a matter that would otherwise be precluded by prevailing statutes of limitation or repose.

SECTION 40-22-110. Penalties; grounds.

(A) The board may seek administrative fines, pursuant to Section 40-1-120 or seek criminal penalties against a person or firm found guilty of unlicensed practice of engineering or surveying. In addition to the grounds provided for in Section 40-1-110, the board may cancel, suspend, refuse, revoke, or restrict a license as well as reprimand, fine, or require re-examination of an individual who is found guilty of:

(1) the practice of fraud or deceit in applying for or obtaining a certificate of registration;

(2) gross negligence, incompetency, or misconduct in the practice of engineering or surveying;

(3) a felony or misdemeanor which, in the judgment of the board, adversely affects the registrant's ability to perform satisfactorily within the licensed discipline;

(4) aiding or abetting any person in violation of a provision of this chapter or a regulation promulgated pursuant to this chapter;

(5) a violation of this chapter or a regulation promulgated by the board; and

(6) practicing in a registration category or tier for which the licensee has not been licensed by the board.

(B) The license of a person adjudged mentally incompetent is considered automatically suspended until the person is adjudged as being restored to mental competency by a court of competent jurisdiction or in any other manner provided by law.

Given the stipulations in Section 40-22-80, the Department of Labor, Licensing and Regulation has ample reason to initiate an investigation into the role of Westinghouse Electric Company LLC, WECTEC Global Project Services Inc. as well as the design and licensing departments of SCE&G, into how reactor design drawings were created and if their "approval" complied with the requirements of South Carolina law.

As "The mission of the Department of Labor, Licensing and Regulation (LLR) is to promote the health, safety and economic well-being of the public through regulation, licensing,

enforcement, training and education," it is incumbent upon the department to review this matter and instigate an investigation. Failure to take action will fall short of both the official mission of the LLR and the requirements of pertinent South Carolina law.

Conclusions

The severity of the situation surrounding SCE&G's failed nuclear project and questions raised publicly as to compliance with South Carolina law as it concerns certification of reactor design plans and design changes merits prompt review and investigation by the Department of Labor, Licensing and Regulation. By nature of its legal role in licensing and associated enforcement duties, the LLR is already involved in the matter even if no formal review has yet begun.

This request/complaint must, per LLR procedures, be reviewed by a complaint analyst and a determination made that a violation of regulations may have occurred or not. If it is determined a violation may have occurred then an investigation must proceed. According to LLR procedures, the responsible companies and supervisory engineers (or their replacements) can be given opportunity to respond. That investigation may, according to South Carolina Law, Section 40-1-80(B), include subpoenas for records relevant to the investigation. An Investigative Review Committee may be embodied to review the case and a recommendation than made to the LLR board for action. The board may make a determination concerning possible violations and if sanction are merited.

I acknowledge my understanding of LLR procedures is incomplete. I further acknowledge that my understanding of the drawing certification issue is based on information in the public realm and that my understanding is incomplete and may be inaccurate. I am filing this request simply as a concerned citizen who recognizes the seriousness of the issue before our state and not as an engineer or as one who has had any past interactions with the LLR. I welcome corrections to anything I have written in this filing. Of prime importance, I welcome the LLR's public clarification about how it operates and, simultaneously, how it will deal with the reactor design drawing situation at hand.

As the matter of the failed nuclear project is being reviewed by a large number of state and federal entities, I urge the Department of Labor, Licensing and Regulation to now exercise due diligence in this matter. The absence of the LLR's involvement has been noted.

I request that the LLR jointly communicate to both me and the public about steps that it is taking to determine if any state law as it applies to SCE&G's nuclear project will be investigated and if any enforcement action will be taken if violations are determined to have taken place.

Likewise, I request that the LLR to inform the me and the public as to its opinion concerning the claimed "doctrine of federal preemption" which would selectively nullify portions of state law

as it applies to construction of the AP1000 reactors or any other reactors (or other construction projects) in the state. (Note that the above-mentioned article in the Post and Courier cites an official at the the U.S. Nuclear Regulatory Commission who stated that companies building nuclear reactors in the United States are "always responsible for meeting relevant state and local requirements.")

I reserve the right to add to this complaint/request at any time and to provide this request to state and federal investigators and to the public, including in both South Carolina and Georgia.

Thank you for your prompt attention to this urgent matter facing the Department of Labor, Licensing and Regulation.

Attachments – for the official investigative record:

1. Affidavit of Tom Clements, October 19, 2017

2. Article from Charleston Post and Courier, *Stamped for failure: Westinghouse and SCANA used unlicensed workers to design abandoned S.C. nuclear reactors*, September 24, 2017

3. Westinghouse memo entitled "Westinghouse/Stone & Webster Consortium Position on the Applicability of South Carolina State Professional Engineering Laws and Building Codes at V.C. Summer Units 2 & 3," May 7, 2012

4. Bechtel report, February 5, 2016

5. SCE&G and Santee Cooper memo entitled "V.C Summer Units 2 and 3 Guaranteed Substantial Completion Dates," May 6, 2014 – note mention on page 11 of problems caused by "delayed completion of Issued For Construction (IFC) drawings"

Submitted by: Tom Clements

Tom Clements
1112 Florence Street
Columbia, SC 29201
tomclementssc@gmail.com
cell 803-240-7268

WELLS FARGO

Acknowledgment by Individual

State of South Carolina County of Richland

On this 19th day of October, 20 17. before me, Shari Bookert
Name of Notary Public

the undersigned Notary Public, personally appeared
Tom Clements

Name of Signer(s)

- ○ Proved to me on the oath of _____
- ○ Personally known to me
- ☒ Proved to me on the basis of satisfactory evidence South Carolina Drivers License
(Description of ID)

to be the person(s) whose name(s) is/are subscribed to the within instrument, and acknowledged that he/she/they executed it.

WITNESS my hand and official seal.

SHARI BOOKERT
NOTARY PUBLIC
SOUTH CAROLINA
MY COMMISSION EXPIRES 5/5/2026

Notary Seal

(Signature of Notary Public)

My commission expires 05/05/2026

Optional: *A thumbprint is only needed if state statutes require a thumbprint.*

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