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Date: May 7, 2012

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Subject: 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

Introduction

South Carolina Electric & Gas Company has asked the Consortium of Westinghouse Electric Company LLC ("WEC") and Stone & Webster Inc. ("S&W") to provide its position on the applicability of South Carolina State professional engineering laws and regulations and consensus code standards (as used throughout this paper, "South Carolina Laws") to the engineering, procurement and construction of the AP1000® nuclear power plant ("AP1000") at the V.C. Summer Units 2 & 3 Project.

The Consortium has carefully evaluated this issue to determine the appropriate interface between the South Carolina Laws and those Federal laws and regulations (including as they adopt national codes and standards) applied by the US Nuclear Regulatory Commission ("NRC") to certify the AP1000 standard plant design and issue the AP1000 amended Design Certification Rule ("DCR").¹ The evaluation has specifically assessed, with respect to the design and construction of the AP1000 at V.C. Summer Units 2 & 3, (1) the applicability of the South Carolina Laws, including consensus codes (such as building, energy, electrical, plumbing, mechanical, gas, fire and other life/health/safety codes) and professional engineering laws and regulations, to AP1000 design and construction documentation, as compared to (2) the NRC's exclusive jurisdiction over the nuclear and radiological safety aspects of nuclear power plants under the Atomic Energy Act of 1954, as

¹ 10 C.F.R. Part 52, Appendix D as amended; Final Rule, 71 Fed. Reg. 4464 (January 27, 2006); Final Rule Amendment, 76 Fed. Reg. 82079 (December 30, 2011).

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amended (the "AEA")² and the NRC's promulgation of the AP1000 DCR under its standardization regulations, 10 C.F.R. Part 52.

Summary of Position

The Consortium's reasoned judgment is that the AEA, as implemented and enforced by the NRC through its rules and regulations, including the standardization regulations set out in 10 C.F.R. Part 52, preempts the South Carolina Laws with respect to the entire AP1000 Standard Plant under federal law. Federal preemption applies to the extent that compliance with the South Carolina Laws would have a direct and substantial effect on and/or otherwise conflict or interfere with or undermine the NRC's jurisdiction over the radiological and nuclear safety aspects of the design and construction of the AP1000 at the V.C. Summer Units 2 & 3 Project.

The Consortium has reached the conclusion that the doctrine of federal preemption exempts the design and construction of those aspects of the AP1000 directly associated with nuclear or radiological safety, including especially the nuclear island³ from the application of the South Carolina Laws.

In addition, the NRC also has certified the AP1000 design and issued the DCR (and will license the on-site construction of the AP1000 at V.C. Summer Units 2 & 3) pursuant to its regulations, 10 C.F.R. Part 52, which promote nuclear and radiological safety by facilitating the standardization of nuclear plant designs and has promulgated the DCR itself as an NRC regulation. Based on the applicability of this federal regulatory scheme, which has as one of its clear purposes the promotion of nuclear safety through standard nuclear plant designs, the Consortium also has judged that the federal preemption doctrine as applied in the nuclear field is sufficiently applicable to extend beyond the AP1000 nuclear island to encompass that portion of the AP1000 design (and related construction effort) known as the "Standard Plant," as defined by and included in the NRC-issued DCR and the pending individual combined license (COL) for V.C. Summer Units 2 & 3.⁴

The Consortium has further determined that it will comply with the South Carolina Laws, as applicable, outside of those aspects of the Standard Plant associated with preempted nuclear or radiological safety matters. Finally, the South Carolina Laws also will be applied, as applicable, to site-specific design and construction work not associated with the AP1000 Standard Plant at the V.C. Summer Units 2 & 3 site.

² 42 U.S.C. § 2011, *et seq.* 1954, as amended. See Interpretation by the General Counsel: AEC Jurisdiction Over Nuclear Facilities and Materials Under the Atomic Energy Act, 10 C.F.R. § 8.4 (stating that under AEA § 274, 42 U.S.C. § 2021, the States "lack authority to license or regulate, from the standpoint of radiological health and safety, the construction and operation of production or utilization facilities (including nuclear power plants)").

³ The AP1000 nuclear island (within the Standard Plant) consists of the Shield Building, the Containment Building and the Auxiliary Building, the integrated basemat that supports these buildings and the structures, systems and components located within these buildings.

⁴ Generally speaking, outside the nuclear island the remainder of the Standard Plant is comprised of the Turbine building, the Annex building, the Diesel Generator building and the Radwaste building, with each of these buildings constructed on an individual basemat that supports these buildings, and the structures, systems and components located within these buildings, together with certain additional auxiliary structures and systems not within these buildings, but associated with them.

Accordingly, the Consortium will:

- maintain its position that the South Carolina Laws are federally preempted and not applicable to design and construction work within the nuclear island of the AP1000 Standard Plant;
- further maintain its position that the same federal preemption argument applies beyond the nuclear island to design and construction work for the AP1000 Standard Plant as a whole;
- comply with South Carolina Laws as applicable to site-specific design and construction work not associated with the AP1000 Standard Plant at the V.C. Summer Units 2 & 3 site;
- assure that design and construction documents and revisions thereto for buildings, structures, systems and components within the Standard Plant that are required to be submitted to any governmental authority in South Carolina for purposes of permitting, obtaining certificates of occupancy, life/health safety compliance certificates, or other licenses or approvals will be prepared by or under the direct supervision of a licensed professional engineer ("PE") and will be sealed accordingly;
- comply with consensus codes and assure that design and construction documents and revisions thereto related to site-specific buildings, structures, systems and components outside of the Standard Plant at the V.C. Summer Units 2 & 3 site if required under the South Carolina Laws will be prepared by or under the direct supervision of a licensed PE and will be sealed accordingly;
- comply with the requirements of other nuclear safety codes and standards as incorporated or incorporated by reference in the DCR;
- maintain for each of WEC and S&W a company-level South Carolina Certificate of Authorization (COA) to practice engineering; and
- maintain for each of WEC and S&W a company-level South Carolina Contractor's license.

Design and construction activities outside of the Standard Plant (even if not specifically noted above) will continue to be evaluated relative to the applicable South Carolina Laws (or comparable laws of other relevant states) without consideration of the federal preemption doctrine. This will include complying with the requirement under the South Carolina Laws as applicable to employ South Carolina-licensed PE's at the V.C. Summer Units 2 & 3 site to oversee and exercise direct supervisory control of engineering work performed on-site on a daily basis.

While this position paper is specific to V.C. Summer Units 2 & 3, it is aligned with overall Consortium philosophy and both the WEC and S&W corporate positions on the same matter as applicable to other AP1000 projects in the US.

Discussion:

1. Background:

On May 23, 2008, South Carolina Electric & Gas Company ("SCE&G"), for itself and as agent for the South Carolina Public Service Authority, and a consortium consisting of Westinghouse Electric Company LLC and Stone and Webster, Inc. ("Consortium") entered into an Engineering, Procurement and Construction Agreement to provide two AP1000 Nuclear Power Plants (V.C. Summer Units 2 & 3) near Jenkinsville, South Carolina (the "EPC Agreement"). WEC and S&W also entered into Consortium Agreement effective May 23, 2008 and later amended in October 2009.

The Consortium Agreement details the working relationship between the Consortium members to implement the EPC Agreement.

The EPC Agreement and the Consortium Agreement, as well as WEC and S&W's company policies and procedures require compliance with applicable laws. These agreements further require the exercise of prudent practices in connection with the engineering, procurement and construction of V.C. Summer Units 2 & 3.

The Consortium has reasonably assessed these legal compliance requirements and contractual standards of prudence in the context of construction of the AP1000 at V.C. Summer Units 2 & 3 in developing the Consortium's Project position relative to the applicability of the South Carolina Laws, including specifically professional engineering requirements⁵ and building codes and standards applicability.⁶ The Consortium also has assessed its legal compliance requirements and prudence obligations in light of the fact that the NRC has certified the AP1000 as a standard plant design under 10 C.F.R. Part 52, as set forth in the amended DCR included as Appendix D to that regulation. The applicability of the well accepted doctrine of federal preemption as applied to the nuclear field⁷ also has been extensively considered.

2. The AP1000 Certified Standard Design:

The AP1000 design was initially certified under the 10 C.F.R. Part 52 process in January 2006, and the original DCR for the AP1000 design was published as Appendix D to 10 C.F.R. Part 52.⁸ The current amendment to the DCR and the NRC's amended certification of the AP1000 Standard Plant

⁵ The South Carolina Code set forth provisions for licensed professional engineers practicing within South Carolina, including a requirement that plans and specifications prepared by a licensed professional engineer or prepared under the direct supervision of a licensed professional engineer must be stamped with seals when issued for use as job site record documents at construction projects within South Carolina. S.C. Code Ann. § 40-22-270(4) (2011). The South Carolina Code of Regulations states that the seal and signature of a licensed professional engineer on a document constitutes a certification that the document was prepared by the licensed professional engineer or under his direct supervision. S.C. Code Regs. 49-207 C. (1) (2011). It also states, "When sealing documents is required by statute, other authority or contract, each sheet of design or construction plans and drawings for engineering practice . . . shall be sealed and signed by the [licensed professional engineer] . . . preparing them, or in responsible charge of their preparation." S.C. Code Regs. 49-207 C. (2) (2011).

⁶ The South Carolina Code requires the South Carolina Building Codes Council to "adopt by reference and amend only the latest editions of the following nationally recognized codes and the standards referenced in those codes for regulation of construction within this State: building, residential, gas, plumbing, mechanical, fire, and energy codes as promulgated, published, or made available by the International Code Council, Inc. and the National Electrical Code as published by the National Fire Protection Association." S.C. Code Ann. § 6-9-50(A) (2011). It also requires all municipalities and counties in South Carolina to enforce building, energy, electrical, plumbing, mechanical, gas, and fire code (referred to as building codes in the Building Codes chapter) relating to the construction, livability, sanitation, erection, energy efficiency, installation of equipment, alteration, repair, occupancy, classification, or removal of structures located within their jurisdictions and promulgate regulations to implement their enforcement and to enforce only the national building and safety codes provided in the Building Codes chapter. S.C. Code Ann. § 6-9-10(A) (2011). There is a significant exception in effect, however. The South Carolina Public Service Authority, on whose behalf SCE&G entered into the EPC Agreement, is exempt from the requirements of the building codes except for structures used primarily for offices, storage, warehouses, shop areas, or residential housing. S.C. Code Ann. § 6-9-10(B) (2011).

⁷ See generally, *Pacific Gas & Electric Co. v. State Energy Resources Conservation and Development Commission*, 461 U.S. 190 (1983); *Entergy Nuclear Vermont Yankee, LLC and Entergy Nuclear Operations, Inc. v. Peter Shumlin, in his official capacity as Governor of the State of Vermont*; *William Sorrell, in his official capacity as Attorney General of the State of Vermont*; and *James Volz, John Burke and David Coen, in their official capacities as members of the Vermont Public Service Board*, 2012 U.S. Dist. LEXIS 6894 (D. Vt., January 19, 2012).

⁸ Final Rule, 71 Fed. Reg. 4464 (January 27, 2006).

design was issued on December 30, 2011 and Appendix D also was amended⁹. The promulgation of the DCR as a federal regulation under the NRC's over-arching scheme for standardizing current generation nuclear plant designs requires that nuclear utilities electing to reference the DCR as part of a combined operating license (COL) application for a new AP1000 nuclear plant can only legally construct such plant in conformity with the standard design in the DCR (subject to separate NRC approval as applicable in accordance with Part 52 for any site specific departures from the certified design). The DCR, in turn, incorporates by reference the design control document ("DCD") submitted by Westinghouse to the NRC, which specifies the approved nuclear safety codes and standards and, generally, the Standard Plant design for the AP1000.

Since the inception of its long standing policy in favor of standardization of nuclear plant design,¹⁰ the NRC has continued to actively support the concept based on its belief in the enhanced nuclear safety (and licensing reform) benefits which standardization can make possible. The NRC has repeatedly reaffirmed that "standardization of nuclear power plant designs is an important initiative that can significantly enhance the safety, reliability and availability of nuclear power plants."¹¹ It further has explained that it "strongly endorses[es] the concept of standardization" and that the "[u]se of certified reference designs in future license applications should enhance plant safety, increase the efficiency of the NRC review process, and reduce complexity and uncertainty in the regulatory process."¹² By codifying certified standard plant designs as part of its regulations under 10 C.F.R. Part 52, the NRC has further emphasized the benefits to nuclear safety to be obtained from the standardization process by giving standardized designs, such as the AP1000 DCR, the force of federal law.

The AP1000 Standard Plant design criteria, including the approved codes and standards, as incorporated in the DCR when used by COL licensees referencing the standard design, are what can be at odds with potentially conflicting state law requirements of the South Carolina Laws. In addition, the South Carolina Laws also can be seen as conflicting with the NRC's overall standardized licensing scheme under Part 52 itself.

3. NRC Regulation of Nuclear Safety – the Doctrine of Federal Preemption:

A. Genesis and Objectives of the Doctrine

The doctrine of federal preemption derives from the Supremacy Clause of the U.S. constitution.¹³ As the Supreme Court has stated, the Constitutional principles of preemption "are designed with a common end in view: to avoid conflicting regulation of conduct by various official bodies which

⁹ Final Rule Amendment, 76 Fed. Reg. 82079 (December 30, 2011).

¹⁰ See Statement on Standardization of Nuclear Power Plants, 43 Fed. Reg. 38954, 38958 (Aug. 31, 1978) (describing the Atomic Energy Commission's standardization policy and affirming that the newly formed NRC would continue to work toward standardization); see also Policy Statement on Nuclear Power Plant Standardization, 52 Fed. Reg. 34884 (Sept. 15, 1987) (encouraging the use of standard plant designs).

¹¹ *Id.* ("The Commission believes that the use of certified standardized designs can benefit the public health and safety by concentrating resources on specific design approaches without stifling ingenuity; by stimulating standardized programs of construction practice, quality assurance, and personnel training; and by fostering more effective maintenance and improved operation. . . . Standardization is expected to further improve the safety performance of future plants. Standardization will allow for a more expeditious and efficient review process and a more thorough understanding of the designs by the industry and the NRC staff. . . .")

¹² *Id.*

¹³ U.S. Const. art. VI, cl.2.

might have some authority over the subject matter.¹⁴ Although there are several tests that can be employed to determine whether a state law is federally preempted (and thus inapplicable to the matter at hand), the goal is for a federal court to determine whether the state law “stands as an obstacle to the accomplishment and execution of the full purposes and objectives of Congress.”¹⁵ Thus, whether preemption is found to exist, thereby rendering a competing state law invalid in whole or in part, is a matter of statutory interpretation, i.e., did Congress in enacting the federal statute in question (and including as extended to its implementing regulations) intend to foreclose the challenged state law and related action?¹⁶

B. Forms of Preemption

The body of existing federal case law in the area of nuclear preemption makes clear that Congress in promulgating the AEA has not expressly preempted on a broad or sweeping basis all state laws and regulations that operate in or in connection with the nuclear field.¹⁷ Thus, “express preemption”, the clearest form of preemption of federal law to render state laws inapplicable, is not applicable in the nuclear context. This conclusion under the existing inquiry means that there is no overall express preemption of South Carolina Laws in connection with the regulation of the production of nuclear energy and the design and construction of nuclear power plants in the State.

However, the federal courts also have recognized that Congress in passing the AEA gave the NRC clear and exclusive jurisdiction over the radiological and nuclear safety hazards aspects of nuclear generation and the construction and operation of nuclear power plants.¹⁸ It is this exclusive jurisdiction that can in certain circumstances render competing state laws and regulations wholly or partially inapplicable to NRC-regulated activities.¹⁹ Accordingly, federal case law also is explicitly clear that federal preemption of state law also may be implied. Under the doctrine of “implied preemption”, where the federal and state governments arguably share jurisdiction over a matter, federal laws and regulations will preempt competing state laws and regulations, at least to the extent that they actually conflict.²⁰ There are two categories of implied preemption as defined by the federal courts: field preemption and conflict preemption.

Implied Field Preemption

Field Preemption is implied where Congress does not expressly state its intent to preempt state law, but nonetheless where the scheme of federal regulation is so comprehensive and pervasive, the purpose of such regulation to fully and exclusively occupy the field at issue is found to exist.²¹ In the

¹⁴ *Amalgamated Assn. of Street, Electric and Ry. & Motor Coach Employees of America v. Lockridge*, 403 U.S. 274, 285-86 (1971).

¹⁵ *See Hines v. Davidowitz*, 312 U.S. 52, 67 (1941).

¹⁶ *See Swift & Co. v. Wickham*, 382 U.S. 111, 120 (1965).

¹⁷ *See Pacific Gas & Electric, supra* at 209-210; *English v. General Electric Company*, 496 U.S. 72 (1990); *Silkwood v. Kerr-McGee Corp.*, 464 U.S. 238 (1984).

¹⁸ *See Pacific Gas & Electric, supra* at 208-209; *see also* 10 C.F.R. § 8.4, *supra*; *Kerr-McGee Chemical Corp. v. City of West Chicago*, 914 F.2d 820, 821 (7th Cir. 1990) (holding that the NRC’s decommissioning authority did not preempt a municipal ordinance that on its face targets only health and safety hazards unrelated to radiation hazards, but recognizing the broad preemptive effect of the AEA for radiological safety aspects of nuclear facilities).

¹⁹ *See Pacific Gas & Electric, supra*.

²⁰ *Id.*

²¹ *English, supra*, at 79; *see also Silkwood, supra*, at 248 (“If Congress evidences an intent to occupy a given field, any state law falling within that field is pre-empted.”).

nuclear area, in connection with the exclusive federal field of radiological and nuclear safety, a state law will be preempted if: (1) its purpose is found to be to regulate radiological and nuclear safety, so-called "purpose-based field preemption"; or (2) it actually regulates matters directly and substantially affecting radiological and nuclear safety, regardless of the state law's stated purpose, so-called "effects-based field preemption".²² However, not every state law that in some remote way may affect nuclear safety decisions or involve nuclear facilities is preempted under an effects-based field preemption analysis. Rather, for a state law to fall under this category of field preemption, it must have some direct and substantial effect on decisions concerning radiological and nuclear safety as made by those who build or operate nuclear facilities.²³

Implied Conflict Preemption

Conflict preemption is implied where a federal law may not fully occupy the field in the area it regulates, but a state law that purports to regulate in the same area will nonetheless be preempted insofar as it "actually conflicts with the federal law."²⁴ In this situation, compliance with both the federal and state schemes is either actually impossible, so-called "impossibility conflict preemption,"²⁵ or the state enactment is "an obstacle to the accomplishment and execution of the full purposes and objectives of Congress," in passing the federal law, so-called "obstacle conflict preemption".²⁶

Congress' purposes and objectives in passing the AEA to regulate radiological and nuclear safety of nuclear generating facilities and the NRC's purposes in using the power delegated to it by Congress to promulgate regulations to implement the AEA, including its Part 52 standardization regulations, will determine whether the South Carolina Laws will create: (1) an impossibility situation in conflict with the federal laws; or (2) an "obstacle to the accomplishment . . . of the full purposes and objectives of Congress" in passing the federal laws and in either case be found to be preempted under those laws.²⁷

The Consortium believes that elements of both implied field preemption and implied conflict preemption theories are applicable to determining whether the South Carolina Laws are preempted to any extent in connection with the construction of the AP1000 at V.C. Summer Units 2 & 3. As discussed below, these theories support the Consortium's position regarding the non-applicability of the South Carolina Laws to the construction of the AP1000 Standard Plant, including with respect to the issuance of design and construction documents and revisions thereto.

4. Federal Preemption of State Law Requirements As Applied to AP1000 Construction at V.C. Summer Units 2 & 3:

A. Purpose-Based Field Preemption

The courts have been reluctant to hold that generally applicable state laws, i.e., laws not specifically directed at the nuclear industry, have the "purpose" of regulating the preempted field of

²² *English, supra*, at 84.

²³ *Id.* at 85.

²⁴ *Id.* at 79.

²⁵ *Pacific Gas & Electric, supra*, at 204 (quoting *Florida Lime & Avocado Growers, Inc. v. Paul*, 373 U.S. 132, 142-43 (1963)).

²⁶ *English, supra*, at 79 (quoting *Hines v. Davidowitz*, 312 U.S. at 67).

²⁷ *Id.*

radiological and nuclear safety.²⁸ Thus, purpose-based field preemption does not typically apply to preempt such general laws.

The South Carolina Laws are considered to be such generally applicable laws. This is the case as they do not specifically address the nuclear industry, nor do they purport to have solely as their purpose the regulation of nuclear safety, although they are safety-directed statutes. Given these facts, the application of federal preemption to these categories of state laws, etc. is not applied lightly. Accordingly, the courts have found when dealing with such general laws that the Congressional intent to supersede state laws on field preemption grounds must be clear and manifest.²⁹

B. Effects-Based Field Preemption

In contrast, field preemption based on an effects-based theory can be found to render even state laws of general purpose inapplicable in the nuclear area to the extent they have a direct and substantial effect on the decisions made by those who build (or operate) nuclear facilities.³⁰ The South Carolina Laws can be considered to create such impact effects so as to be considered field preempted, as they would influence the manner of construction of the AP1000 Standard Plant (and the sealing of design and construction documents related thereto).

In the area of code compliance, application of the building codes that are included within the South Carolina Laws conflict with the applicable safety and other codes incorporated in the DCR and thus would have a direct and substantial effect on the decisions required to be made by the Consortium in constructing the AP1000 Standard Plant. For the nuclear island construction, these include the need to comply with the various nuclear safety codes incorporated into the DCR (including in categories as significant as Tier 2* documents³¹) over the requirements of the South Carolina Laws. Outside the nuclear island within the remainder of the Standard Plant, compliance with other DCR code requirements also must be met. For example, the DCR imposes certain specific requirements for the radiological aspects of construction of the Radwaste Building that the South Carolina Laws would not address. More generally, differences between the DCR-required Uniform Building Code as opposed to the South Carolina Laws-required International Building Code would have a direct impact on the Consortium's ability to construct the AP1000 Standard Plant as the DCR mandates. These code differences can create more than trivial impacts in connection with nuclear safety design and construction methodologies and the ultimate safety margins for V.C. Summer Units 2 & 3.

In addition, the effects of applying the differing codes and standards of the South Carolina Laws can also be considered quite substantial given that application to the NRC would be required to reopen and change the DCR to allow such laws to be used for the construction of the AP1000 Standard

²⁸ *English, supra*, at 84 (general state tort law allowing a cause of action for intentional infliction of emotional distress is not motivated by safety concerns). *Cf. Entergy, supra* (Vermont state laws which governed the continuing operation of a nuclear power plant were motivated by the stated and clear purpose of regulating in the area of nuclear safety).

²⁹ *English, supra*, at 79.

³⁰ *Id.* at 85; *Skull Valley Band of Goshute Indians v. Nielson*, 376 F.3d 1223, 1251-54 (10th Cir. 2004) (Utah laws governing roads that access a nuclear storage facility and regulating the licensing of such facility were held to be field preempted because they significantly impacted operator's decisions regarding radiological safety by impacting how the facility can be built).

³¹ *See, e.g.*, ACI 349-01 (the nuclear civil structures code applicable to the nuclear island base mat construction and higher civil structures elevations in the nuclear island which is designated as "Tier 2*" in the DCR).

Plant. This clearly is not something that was contemplated in connection with the construction of a standard nuclear plant design, such as the AP1000 Standard Plant. Moreover, it would not be an option to pick and choose elements from the codes under the South Carolina Laws to apply to the construction of the Standard Plant. Application of the codes and standards incorporated into the DCR in their entirety is what is contemplated under the Part 52 standardization process. South Carolina Laws requirements to the contrary would significantly impact the Consortium's decisions regarding nuclear and radiological safety by dictating a different approach to the construction of V.C. Summer Units 2 & 3.

Similarly, application of PE sealing requirements as required by the South Carolina Laws that are contrary or in addition to those that have been applied to the development of the Standard Plant design and construction documents also would have a direct and substantial effect on how the AP1000 would be constructed at V.C. Summer Units 2 & 3. The development of the Standard Plant design has evolved over many years and has had the full scrutiny of the NRC all along the way in certifying the safety of the Standard Plant. There would need to be significant revisiting of the evolution of the AP1000 design, including its nuclear and radiological safety aspects, in a clearly unnecessary way given the substantial NRC involvement, in order to apply the PE sealing requirements under the South Carolina Laws to the Standard Plant design and design based construction drawing and other documents.

Further, the South Carolina Laws, if required to be applied to the construction of the AP1000 Standard Plant, would directly undermine the goal to enhance nuclear plant safety that is behind the issuance of a standard AP1000 certified design as promulgated in the DCR.³² The application of such South Carolina Laws would directly and substantially affect areas exclusively delegated to the NRC concerning the standardized AP1000 nuclear safety design by dictating decisions concerning the construction of the AP1000 Standard Plant at V.C. Summer Units 2 & 3 that would differ significantly from the federal requirements as set forth in the AP1000 DCR.

The South Carolina Laws that would mandate the many direct and significant differing requirements or results described above cannot be considered to be applicable to the construction of the AP1000 Standard Plant at V.C. Summer Units 2 & 3. Such South Carolina Laws therefore can be considered preempted under an effects-based field preemption analysis.

C. Impossibility-Based Conflict Preemption

Under an implied theory of impossibility based conflict preemption, state laws cannot stand when compliance with both federal and state regulations would be a physical impossibility.³³ The same aspects of the South Carolina Laws noted above that: would be contrary to those imposed by the NRC for the AP1000 under the DCR; which the Consortium could not implement independently of required compliance under the DCR; which would require specific NRC approval to implement as a variation from the requirements set forth in the DCR; or which would be contrary to the NRC's desire to improve the safety of nuclear plants through the implementation of standardized designs,

³² This purpose is evident in 10 C.F.R. § 52.47, which specifies the technical information required to be submitted by an applicant for standard design certification and states that "[t]he application must contain a level of design information sufficient to enable the Commission to judge the applicant's proposed means of assuring that construction conforms to the design and to reach a final conclusion on all safety question associated with the design before certification is granted."

³³ *Pacific Gas & Electric, supra*, at 204 (quoting *Florida Lime & Avocado Growers, Inc.*, 373 U.S. 132 at 142-143). See also *Pliva, Inc. v. Mensing*, 131 S. Ct. 2567 (2011) (where the court held it to be impossible for generic drug manufacturers to comply with both federal requirements for drug labeling practices intended to be equivalent to brand-name drug labeling requirements and state law requirements for strengthened generic drug warning labels).

also would support preemption of the South Carolina Laws under such an impossibility based preemption conclusion.

For the AP1000 Standard Plants to be built at V.C. Summer Units 2 & 3, an impossibility theory would preempt South Carolina building code requirements under the South Carolina Laws that would generate different requirements or results from the nuclear safety and other code requirements incorporated into the DCR. With regard to the PE sealing requirements under the South Carolina Laws, it would be highly impracticable if not impossible to require a South Carolina registered professional engineer to review the long history and development of the AP1000 nuclear safety design and related design documentation in order to confirm the safety and acceptability of the design for sealing purposes. This is particularly the case when, pursuant to 10 C.F.R. Part 52, the NRC has undertaken this role and has fully scrutinized the nuclear safety aspects of the AP1000 over this extended period and reached acceptable conclusions regarding the safety of the Standard Plant design. The NRC has performed this role both in connection with the originally issued DCR and most recently in connection with the issuance of the amended DCR. Moreover, a South Carolina professional engineer would have no ability to change any aspect of the Standard Plant design even assuming the feasibility of his review, as the NRC's approval would be required to change the requirements in the DCR.

D. Obstacle-Based Conflicts Preemption

The Supreme Court also has held state laws to be preempted in the nuclear area under an implied conflicts theory where state law is found to "stand as an obstacle to the accomplishment and execution of the full purposes and objectives of Congress [under the AEA]."³⁴ This obstacle preemption concept also applies to NRC regulations implemented pursuant to authority delegated to the NRC under the AEA.³⁵ Obstacles to the purposes of federal law, can exist both regarding the AEA's promotion of radiological safety in connection with nuclear power generation, and the NRC's promotion of standard nuclear plant designs for construction under 10 C.F.R. Part 52. Such obstacles will be found with respect to the South Carolina Laws where implementation of such laws cause or result in increased costs, significant or increased delays, other redundant requirements and/or overall frustration of the purpose and objectives of the federal laws and regulations at issue.³⁶

The AP1000 Standard Plant already has received NRC certification and approval in accordance with the objectives of the AEA and the NRC's Part 52 regulations. Application of the South Carolina Laws to the certified aspects of the AP1000 Standard Plant would clearly conflict with these federal objectives under an obstacle preemption theory. This conclusion is based on the fact that the South

³⁴ *English, supra*, at 79 (quoting *Hines v. Davidowitz*, 312 U.S. at 67 (1941)).

³⁵ See *Hillsborough Cnty. v. Automated Med. Labs, Inc.*, 471 U.S. 707, 713 (1985) ("[S]tate laws can be pre-empted by federal regulations as well as by federal statutes."); see also *Pliva, supra* (preempting state law tort suits based on federal drug regulations).

³⁶ See generally *Skull Valley Band, supra*, at 1248-1250 (where the court held that Utah state laws imposing additional financial requirements on the operators of spent nuclear fuel storage facilities were preempted as they frustrated the objectives of federal law both due to the incurrence of increased costs incurred by the facilities' operators under such laws and the disruption that such laws would cause to the balance that Congress sought to achieve "between stimulating development of nuclear energy [under the AEA] and providing public compensation to victims of nuclear accidents.") See also *Nevada, et al. v. Watkins*, 914 F.2d 1545, 1561 (9th Cir. 1990) (quoting *California Coastal Comm. v. Granite Rock Co.*, 480 U.S. 572, 581 (1987) and relying on an obstacle preemption theory to hold invalid a Nevada law making it unlawful for any person or governmental entity to store high-level radioactive waste in Nevada at the proposed Yucca Mountain high-level radioactive waste repository site).

Carolina laws would: (1) cause delay in completion of V.C. Summer Units 2 & 3 by requiring a second review of the design and construction elements (and documentation) of the elements of the AP1000 already approved by the NRC and included in the DCR; (2) increase schedule and costs to the Consortium (and the Owners) of constructing the AP1000 Standard Plant buildings, structures, systems and components due to the application of redundant South Carolina Laws requirements not needed to ensure nuclear safety; and (3) allow the State of South Carolina to make decisions regarding the acceptability of the overall AP1000 Standard Plant design and the nuclear safety aspects of V.C. Summer Units 2 & 3 despite prior approval granted by the NRC under controlling federal law and regulations, including the DCR.

The imposition of the South Carolina PE sealing requirements would cause significant schedule delay and add significant costs to the construction of the AP1000 Standard Plant for V.C. Summer Units 2 & 3. Increased schedule time and construction costs also are likely to be incurred if compliance with South Carolina building and similar consensus codes were to be imposed for construction of the AP1000 Standard Plant beyond the requirements in the DCR. Where conflicts in requirements are found to exist, application would need to be made to the NRC to vary from the pre-existing approved requirements in the DCR, thereby further increasing costs and schedule delays.

The imposition of additional, inconsistent or redundant requirements of the South Carolina Laws also is in clear conflict with, and would create an obstacle that could significantly disrupt and frustrate, the NRC's policy favoring the standardization of nuclear power plant designs. The NRC implemented its standardization policy as a means of enhancing the safety, reliability, availability and standard licensability of such plants.³⁷ South Carolina Laws that would require changes to the AP1000 Standard Plant would undermine the NRC's efforts to increase through standardization the overall nuclear and radiological safety of nuclear power plant designs and related construction activities as contemplated by 10 C.F.R. Part 52. Given these obstacles to the clear purposes and objectives of standardization under federal law and NRC regulation, including as applied to the nuclear safety aspects of the AP1000 Standard Plant, the South Carolina Laws would be preempted for these reasons under the obstacle-based theory of implied preemption.

Conclusion

As demonstrated by the foregoing evaluation, the Consortium's reasoned opinion is that the South Carolina Laws are significantly displaced and rendered inapplicable in connection with the construction of the AP1000 certified Standard Plant design at V.C. Summer Units 2 & 3 under the various doctrines of implied federal preemption described above. Implied federal preemption applies to the extent that compliance with the South Carolina Laws would have a direct and substantial effect on and/or otherwise conflict, interfere with or undermine, including in connection with arguments of impossibility or creating obstacles to the application of, the NRC's jurisdiction over the radiological and nuclear safety aspects of the design and construction of the AP1000 at the V.C. Summer Units 2 & 3 Project.

Specifically, the Consortium has reached the conclusion that the doctrines of implied federal preemption exempt the design and construction of those aspects of the AP1000 directly associated with nuclear or radiological safety, including especially the nuclear island, from the application of the South Carolina Laws.

³⁷ See Policy Statement on Nuclear Power Plant Standardization, 52 Fed. Reg. 34884 (Sept. 15, 1987).

In addition, the NRC also has certified the AP1000 design and issued the DCR, and it will license the on-site construction of the AP1000 Standard Plant at V.C. Summer Units 2 & 3, pursuant to its regulations, 10 C.F.R. Part 52, which promote nuclear and radiological safety by facilitating the standardization of nuclear plant designs. The AP1000 certified design is itself an NRC regulation. Based on the applicability of this federal regulatory scheme, which has as one of its clear purposes the promotion of nuclear safety through standard nuclear plant designs, the Consortium also has judged that the implied federal preemption doctrines as applied in the nuclear field are sufficiently applicable to preempt the South Carolina Laws beyond the AP1000 nuclear island to encompass that portion of the AP1000 design (and related construction effort) known as the Standard Plant.

However, the Consortium identified no dispositive case or other precedent directly on point with respect to the line of demarcation between federal preemption of the South Carolina Laws and their applicability in the context of the V.C. Summer Units 2 & 3 AP1000 Project. In the absence of any such directly on-point precedent, the Consortium acknowledges that the extent to which the South Carolina Laws are preempted in connection with the AP1000 Standard Plant design (and related construction) can be subject to interpretation. Accordingly, the Consortium has determined to employ a reasoned and prudent approach based on the research and analysis reflected in this paper such that the AP1000 deployment at V.C. Summer Units 2 & 3 (and its other projects in the United States generally) also will comply with the South Carolina Laws where applicable.

In this regard, the Consortium will comply with South Carolina Laws as applicable to site-specific design and construction work not associated with the AP1000 Standard Plant at the V.C. Summer Units 2 & 3 site. In addition, the Consortium will assure that design and construction documents and revisions thereto for buildings, structures, systems and components within the Standard Plant that are required to be submitted to any governmental authority in South Carolina for purposes of permitting, obtaining certificates of occupancy, life/health safety compliance certificates, or other licenses or approvals will be prepared by or under the direct supervision of a South Carolina-licensed professional engineer and will be sealed accordingly. This will be done in accordance with the requirements applicable to the AP1000 certified design included in the DCR, and as deemed necessary following consultation with permitting officials, fire marshals, and other like South Carolina state and local officials.

The Consortium also will continue to work to provide assurances to the State of South Carolina that the AP1000 plants constructed at V.C. Summer Units 2 & 3 will not threaten the non-nuclear safety and health of the public. This will include the Consortium continuing to evaluate its design and construction activities outside of the Standard Plant relative to the applicable South Carolina Laws (or comparable laws of other relevant states) without consideration of the federal preemption doctrine. The Consortium also will continue to comply with the requirement under the South Carolina Laws, as applicable, to employ South Carolina-licensed professional engineers at the V.C. Summer Units 2 & 3 site to oversee and exercise direct supervisory control of engineering work performed on-site on a daily basis.

At the same time, the Consortium will continue to take the position that it will comply with nuclear safety and other mandatory requirements contained in the DCR to implement construction activities within the AP1000 Standard Plant, including with respect to the issuance of design and construction documents and revisions thereto. To the extent that the South Carolina Laws directly and substantially impact, interfere or impermissibly conflict with such nuclear safety and other DCR requirements, the Consortium will consider the South Carolina Laws to be preempted by federal law which will govern in this regard and the requirements of the DCR shall control.

While this position paper is specific to V.C. Summer Units 2 & 3, it is aligned with overall Consortium philosophy and both the WEC and S&W corporate positions on the same matter as applicable to other AP1000 projects in the US.