

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD PANEL

Before the Licensing Board:

G. Paul Bollwerk, III, Chairman
Nicholas G. Trikouros
Dr. James Jackson

In the Matter of

SOUTHERN NUCLEAR OPERATING CO.

(Early Site Permit for Vogtle ESP Site)

Docket No. 52-011-ESP

ASLBP No. 07-850-01-ESP-BD01

**PETITIONERS' REPLY TO NRC STAFF ANSWER AND SNC ANSWER TO
PETITION FOR INTERVENTION OF CENTER FOR A SUSTAINABLE COAST,
SAVANNAH RIVERKEEPER, SOUTHERN ALLIANCE FOR CLEAN ENERGY,
ATLANTA WOMEN'S ACTION FOR NEW DIRECTIONS, AND
BLUE RIDGE ENVIRONMENTAL DEFENSE LEAGUE**

Pursuant to 10 C.F.R. § 12.303, Petitioners, Center for a Sustainable Coast, Savannah Riverkeeper, Southern Alliance for Clean Energy ("SACE"), Atlanta Women's Action for New Directions ("WAND"), and Blue Ridge Environmental Defense League ("BREDL), hereby submit this Reply in response to the Southern Nuclear Operating Company ("SNC") Answer and the Nuclear Regulatory Commission ("NRC Staff") Answer of 10 January 2007. As asserted below, Petitioners provided sufficient basis and specificity in their Petition to Intervene¹ in accordance with 10 C.F.R. § 2.309. Hence, the Petition for Intervention should be accepted in its entirety.

¹ December 27, 2007.

Applicability of NEPA under NRC Regulations

SNC's Response implies that the Environmental Report ("ER") and the National Environmental Policy Act ("NEPA") are tangentially related inquiries. SNC Answer at 2-5. However, this is not the case. 10 C.F.R. § 51.45 clearly stipulates that "the environmental report should contain *sufficient data* to aid the Commission in its development of an independent analysis."² SNC attempts to downplay its role in the NEPA inquiry, when in fact, as the Applicant, it is required to create an adequate and thorough ER for the sole purpose of aiding and guiding NRC through the NEPA process. As evidence, SNC states "that the ER is intended '*to aid the Commission* in [satisfying] section 102(2)(E)" of NEPA. SNC Answer at 3. On the contrary, the regulations speak to the requirement for the Applicant to provide enough information in its application so as to enable the Commission to fully comply with the requirements set forth in NEPA.

Surprisingly, SNC implies that the requirements under NEPA are limited and minor. Under the NEPA, federal agencies must conduct thorough environmental review for any "major federal action significantly affecting the quality of the human environment." 42 U.S.C. § 4332(2)(C). For over thirty years, federal courts have recognized NEPA's important role in requiring agencies to carefully consider and publicly air environmentally significant aspects of proposed major federal actions. *Citizens to Preserve Overton Park v. Volpe*, 401 U.S. 402 (1971). NEPA requires federal agencies preparing an EA to "study, develop, and describe appropriate alternatives to recommended courses of action." 42 U.S.C. § 4332(2)(E); 40 C.F.R. §§ 1501.2, 1507.2;

² Environmental Reports – General Requirements, Analysis. 10 C.F.R. §51.45(c) (emphasis added).

see also 40 C.F.R. § 1500.2 (agencies “shall to the fullest extent possible. . . identify and assess the reasonable alternatives to the proposed action”).

While SNC is correct in highlighting that NEPA is subject to a “rule of reason,” SNC fails to point out that the rule of reason functions as a “*temper*” to the “hard look” doctrine. *New York v. Kleppe*, 429 U.S. 1307, 1311 (1976). The “hard look” doctrine requires a rigorous analysis of the environmental consequences of a proposed action, and the rule of reason exists only to prevent unlimited bounds for analysis with regard to possible consequences.³ SNC quotes *Friends of Endangered Species, Inc. v. Jantzen*, 760 F.2d 976, 988 (9th Cir. 1985) to say “NEPA generally requires an analysis ‘formulated on the basis of *available* information.’” SNC Answer at 4. Yet, SNC failed to include the more salient portion of the quotation which states: “using reasonable *projections of the worst possible consequences of a proposed action.*”⁴ Agencies must “[r]igorously explore and objectively evaluate all reasonable alternatives.” *Id.* § 1502.14(a); *Citizens for a Better Henderson v. Hodel*, 768 F.2d 1051, 1057 (9th Cir. 1985) (EIS must consider “every” reasonable alternative).

SNC is correct to state that “an ER is a tool for the NRC to use in developing its own, independent environmental impact statement (“EIS”) under NEPA.” SNC Answer at 4. In fact, the ER plays a critical and necessary role in the NRC’s ability to evaluate all reasonable alternatives. As the primary actor in the environmental impact, the Applicant provides one of the most pivotal sources of information influencing the adequacy of the EIS. Without sufficient information from the Applicant, the Commission is hindered in their full evaluation of environmental impacts resulting in the subject project. In fact,

³ *In the Matter of Hydro Res. Inc.* N.R.C. 441, 442, 2004 WL 2604407, 1 (2004) (“Even beyond that stage, the statute requires that the agency take a “hard look” at the environmental effects of the proposal.”)

⁴ *Friends of Endangered Species*, 760 F.2d at 988 (emphasis added).

SNC acknowledges the relationship between NEPA and the ER in their brief, when mentioning that the ER is “bounded by [NRC’s] own NEPA obligations.” SNC Answer at 4.

As such, the adequacy of an ER cannot be judged outside the context of NEPA, since NEPA sets the standard by which the NRC must conduct its EIS *based on the information provided in the ER*. The NRC regulations specifically couch the requirements of the ER within the requirements of the NEPA process.⁵ Therefore, to ignore the requirements set forth by NEPA when evaluating the adequacy of the Applicant’s ER would violate NRC regulations.

II. CONTENTION 1: IMPACTS OF THE ESP ON AQUATIC RESOURCES OF THE SAVANNAH RIVER

The Petition for Intervention states three contentions relating to deficiencies in the ER’s treatment of impacts associated with the proposed cooling water intake and discharge structures. Proposed Contention EC 1.1 shows that the ER does not comply with 10 C.F.R. § 51.45(b) because it does not include a *site-specific* “description of the environment affected” and thus fails to establish baseline conditions to measure potential impacts against. Proposed Contentions EC 1.2 and 1.3 follow directly from the flaws challenged in EC 1.1. That is, the failure to adequately describe the baseline conditions at the site renders meaningless the ER’s discussion of: (1) “the impact of the proposed action on the environment”; (2) “adverse environmental effects which cannot be avoided” and (3) “alternatives to the proposed action.” 10 C.F.R. § 51.45(b).

⁵ Environmental Reports – General Requirements, Analysis. 10 C.F.R. §51.45(c); *See also* 10 C.F.R. §51.10

The NRC's regulations implementing NEPA place the burden on the permit applicant to provide in the ER "sufficient data to aid the Commission in its development of an independent analysis" of potential environmental impacts of the proposal, as required by NEPA. 10 C.F.R. § 51.45(c). *See also* 10 C.F.R. §51.41; Reg. Guide 4.2 at ix. The regulations include a mandatory requirement that the ER "shall include an analysis that considers and balances the environmental effects of the proposed action, the environmental impacts of alternatives to the proposed action, and alternatives available for reducing or avoiding adverse environmental effects." *Id.* Further, the ER "shall, *to the fullest extent practicable*, quantify the various factors considered. *Id.* (emphasis added). In addition, the applicant has an affirmative duty to "include adverse information" in the ER. *Id.* at § 51.45(e).

Proposed Contention EC 1.2 and EC 1.3 show that the ER's analysis of environmental impacts and alternatives does not comply with 10 C.F.R. § 51.45 because it does not include "sufficient data" for the NRC Staff to develop an independent NEPA analysis. The ER does not allege that it is not "practicable" to "quantify the various factors considered" in the evaluation of the proposed intake and discharge structures. The ER eschews quantitative analysis of potential impacts on important fish species in favor of a discussion in qualitative terms, but does not even pretend that such impacts "cannot be quantified."

Contention EC 1.2 challenges the adequacy of the ER's environmental impacts analysis in light of its failure to consider and balance direct, indirect, and cumulative impacts of the proposed cooling system intake and discharge structures on aquatic resources. Likewise, Contention EC 1.3 challenges the adequacy of the ER's alternatives

analysis because it fails to address “environmental impacts of alternatives to the proposed action” and summarily dismisses “alternatives available for reducing or avoiding adverse environmental effects.” Thus, the ER’s violates the “rule of reason” imposed by NEPA by failing to establish baseline conditions, failing to address impacts on aquatic resources, and failing to fully consider reasonable alternatives that avoid adverse impacts of the proposed cooling system. *Hydro Res., Inc.*, LBP-04-23, 60 NRC 441, 447 (2004).

Proposed Contention EC 1.1: The ER fails to use quantitative analysis and field surveys to assess baseline habitat conditions and species diversity and abundance in the project area.

The ER does not comply with 10 C.F.R. § 51.45(b) because it does not include a *site-specific* “description of the environment affected” and thus fails to establish baseline conditions to measure potential impacts against. Rather than conducting field surveys and collecting data from the Plant Vogtle site and immediate environs, the ER presents a qualitative summary of the aquatic community of the Savannah River. ER at 2.4-6 through 16. Despite the Applicant’s claims to the contrary, the ER’s discussion of the environmental baseline conditions is neither “comprehensive” nor “extensive.”

Applicant argues that the various field studies and publications summarized in ER Section 2.4.2 constitute a “comprehensive description of baseline aquatic conditions and ecology of the site.” SNC Answer at 12. Similarly, Applicant claims that Sections 2.3 and 2.4 of the ER “contain[] extensive information concerning the reach of the Savannah River adjacent to Plant Vogtle where the new intake and discharge structures are proposed.” *Id.* However, upon reviewing these very same portions of the ER, Petitioners found them lacking in essential site-specific data. *See* Petition for Intervention at 7 – 9.

Applicant correctly notes that the aquatic environment of the Savannah River near Plant Vogtle has been the subject of numerous studies and field surveys. SNC Answer at 11-12. However, the existing data and studies do not alleviate the Applicant's duty to provide additional site-specific data. In fact, the studies and documents relied upon by the Applicant in the ER only underscore the need for field surveys and quantitative analysis *at the Plant Vogtle site*. Applicant acknowledges, as it must, the presence of "important" species, including state and federally listed endangered species, at the site of the proposed intake and discharge structures.⁶ *Id.* at 12; ER § 2.4.2. Despite this, Applicant has not conducted field studies of species abundance, habitat availability and use, or flow-habitat relationships at the project site. Without baseline data, the ER does not adequately describe the affected environment, as required by 10 C.F.R. § 51.45(b).

The NRC's regulatory guidance document on preparation of environmental reports, Reg. Guide 4.2, belies the Applicant's assertion that the Applicant has no obligation to obtain additional data and conduct studies in preparing the ER. Reg. Guide 2.4 states:

The initial inventory should establish the identity of the majority of terrestrial and aquatic organisms and their relative (qualitative) abundances. The applicant should identify the "important" species from this list and *discuss in detail their quantitative abundances*. This discussion should include species that migrate through the area or use it as breeding grounds. Special attention should be given to the relative

⁶ A species is "important," according to the NRC, if:
a specific causal link can be identified between the nuclear power station and the species and one or more of the following criteria applies: (a) the species is commercially or recreationally valuable, (b) the species is threatened or endangered, (c) the species affects the well-being of some important species within criteria (a) or (b), or (d) the species is critical to the structure and function of the ecological system or is a biological indicator of radionuclides in the environment.

Reg. Guide 4.2 at 2-4.

importance of the station area to the total regional area of the living resources (potential or exploited).

* * *

The discussion of species-environment relation should include descriptions of the area usage (e.g., habitat, breeding, etc.) for important species; it should include life histories of important regional animals and aquatic organisms, their normal seasonal population fluctuations, the density and distribution of their planktonic life stages, and their habitat requirements (e.g., thermal tolerance ranges); and it should include identification of food chains and other interspecies relationships, particularly when these are contributory to predictions or evaluations of the impact of the nuclear station on the regional biota.

Reg. Guide 2.4 at 2-4 (emphasis added).

Proposed Contention EC 1.2: The ER fails to identify and consider direct, indirect, and cumulative impacts of the proposed cooling system intake and discharge structures on aquatic resources.

The ER does not comply with 10 C.F.R. § 51.45(b) and (c) because it does not adequately discuss “the impact of the proposed action on the environment” and does not “include an analysis that considers and balances the environmental effects of the proposed action.” Specifically, the ER’s discussion of environmental impacts does not analyze or assess direct, indirect, and cumulative impacts of the proposed intake and discharge structures on aquatic species and habitat. As discussed above, the ER’s discussion of such impacts is fatally flawed because it fails to identify baseline conditions at the project site, and therefore provides no basis to measure impacts by.

The ER’s environmental effects analysis does not provide “sufficient data to aid the Commission in its development of an independent analysis” required under NEPA. 10 C.F.R. § 51.45(c). The Council on Environmental Quality NEPA implementing regulations, which are binding on all federal agencies, defines “effects” broadly:

(a) Direct effects, which are caused by the action and occur at the same time and place.

(b) Indirect effects, which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.

Effects and impacts as used in these regulations are synonymous. Effects includes ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative. Effects may also include those resulting from actions which may have both beneficial and detrimental effects, even if on balance the agency believes that the effect will be beneficial.

40 C.F.R. § 1508.8. A “Cumulative impact” is:

the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

Id. at § 1508.7.

NRC guidance also addresses the scope of the effects analysis required in the ER:

The impacts of the operation of the proposed facility should be, to the fullest extent practicable, quantified and systematically presented. In the discussion of each impact, the applicant should make clear whether the supporting evidence is based on theoretical, laboratory, onsite, or field studies undertaken on this or previous occasions.

Reg. Guide 4.2 at 5-1. Further, the guidance provides that Biological effects of the cooling system intake and discharge structures should:

Describe the effects of related heat on marine and freshwater life. Give the basis for prediction of effects. In this discussion, appropriate references to *the baseline ecological data* presented in Section 2.2 should be made. Expected thermal effect should be related to the optimum and tolerance temperatures ranges for important aquatic species (as defined in

Section 2.2) and the food base that supports them. The analysis should consider not only include the mixing zone, but also the entire regional aquatic habitat potentially affected by the proposed station.

Potential hazards of the cooling water intake and discharge structures (described in Section 3.4) to fish populations and food base organisms should be identified, and *steps planned to measure and minimize the hazards should be discussed*. Diversion techniques should be discussed in *light of information obtained from ecological studies on fish populations, size, and habitats*.

Id. at 5-1 through 5-2 (emphasis added). *See also, Id.* at 4-1, 6-1 through 6-2.

The ER claims, without any supporting data, that the proposed intake structure will not cause adverse impacts on aquatic resources because it will comply with performance standards imposed under the Clean Water Act. The ER boldly asserts that the proposed new intake will be small or non-existent because the new intake will use an identical design as the current intake structure for Units 1 and 2. However, the Applicant has apparently never monitored or measured entrainment and impingement-related mortality caused by the existing structure. Thus, the ER's prediction of small or non-existent impacts from the proposed intake structure is little more than speculation based on "twenty years of operating experience."

In twenty years of operating experience, the Applicant has not looked for impacts associated with the intake structure and, unsurprisingly, has not found any. Upon review of the impacts analysis in the ER, Petitioners' expert, Dr. Shawn Young, opined that the ER's conclusion of small or non-existent impacts is not scientifically supported by the documentation presented. Young Declaration, ¶ 6. According to Dr. Young, "there is no basis to conclude the proposed new intake and discharge structures, alone or in combination with the existing facility, will not have significant impacts on the Savannah River fish assemblage." *Id.*

The ER must identify and analyze environmental effects, including the cumulative impacts of the current intake structure in combination with the proposed intake. Reg. Guide at viii-ix. See *Grand Canyon Trust v. F.A.A.*, 290 F.3d 339, 342 (D.C. Cir. 2002) (“The agency’s EA must give a realistic evaluation of the total impacts and cannot isolate a proposed project, viewing it in a vacuum.”). The EPA has not already determined, on behalf of the NRC, the potential impacts of the proposed cooling system structure. Moreover, the Applicant is incorrect that “the CWA limits the extent to which NRC may review the adequacy of EPA’s determination with respect to cooling system structures, even in an impact analysis conducted under NEPA.” SNC Answer at 22. The Applicant’s reliance on *New England Coal. On Nuclear Pollution v. NRC*, 582 F.2d 87, 98 (1st Cir 1978) is inapposite. In that case, the Court held that “the NRC may rely on EPA findings made in the course of determining whether to issue a discharge permit” in its NEPA analysis. *Id.* However, here EPA has not issued a “discharge permit” to the applicant and, as such, has not conducted the site-specific environmental impact analysis required by NEPA. *New England Coalition* merely says that NRC is not required to repeat the same analysis previously performed by EPA; however, in this case, EPA has conducted no such analysis. “To ‘consider’ cumulative effects, some quantified or detailed information is required. Without such information, neither the courts nor the public, in reviewing the ... decisions, can be assured that the [agency] provided that hard look that it is required to provide.” *Neighbors of Cuddy Mountain v. U. S Forest Serv.*, 137 F.3d 1372, 1379 (9th Cir. 1998).

EPA’s rulemaking on the CWA Section 316 does not relieve the Applicant of its duty to analyze the impacts of the proposed intake structure. Although EPA determined

in its regulations what constitutes “best available technology” for the purpose of CWA Section 316, this has nothing whatsoever to do with the actual impacts of the proposed action. Thus, NRC guidance provides for independent review of such findings in the agency’s NEPA analysis:

Compliance with environmental quality standards and requirements of the Federal Water Pollution Control Act (FWPCA), commonly referred to as the Clean Water Act, is not a substitute for and does not negate the requirement for NRC to weigh the environmental impacts of the proposed action, including any degradation of water quality, and to consider alternatives to the proposed action that are available for reducing the adverse impacts. If an environmental assessment of aquatic impacts is available from the permitting authority, the NRC will consider the assessment in its determination of the magnitude of the environmental impacts in striking an overall benefit-cost balance. When no such assessment of aquatic impacts is available from the permitting authority, the NRC (possibly in conjunction with the permitting authority and other agencies having relevant expertise) will establish its own impact determination.

NUREG 1555 at 2.3.1-5; *see also, Id. at* 2.3.2-4, 2.3.3-4, 3.3.1-3, 3.3.2-3, 3.6.1-3, 3.6.2-3, 4.2.1-4, 4.2.2-4, 5.2.1-4, 5.2.2-5, 5.3.1.1-4, 5.3.1.2-4, 5.3.2.1-5, 5.3.2.2-5, 6.1-3, 6.3-3, 6.6-3.

Proposed Contention EC 1.3: The ER fails to satisfy 10 C.F.R. § 51.45(b)(3) because it fails to address impacts to aquatic species in its discussion of alternatives. In particular, the ER’s discussion of the no-action alternative and of alternative cooling technologies fails to consider environmental and economic benefits of avoiding construction of the proposed cooling system.

The ER does not comply with 10 C.F.R. § 51.45(b)(3) because it dismisses without analysis “alternatives available for reducing or avoiding adverse environmental effects.” NRC Staff and Applicant both incorrectly characterize Proposed Contention EC 1.3 as “a continuation of Proposed Contention EC 1.2” and a “repackaging of the previous contentions.” Petitioners emphatically deny this is the case. As required by 10 C.F.R. § 2.309(f)(i), Proposed Contention EC 1.3 is a “specific statement of the issue of law or fact to be raised or controverted.” The Petition specifically identifies the

alternatives analysis in ER Sections 9.1 and 9.4 as deficient and neither NRC Staff nor the Applicant may recast this argument to their liking. *Cf. McGuire*, CLI-02-28, 56 NRC at 379 (“Where an issue arises over the scope of an admitted contention, NRC opinions have long referred back to the bases set forth in support of the contention.”).

Once again, rather than disclosing and analyzing potential alternatives to the proposed cooling system, the ER merely relies on EPA’s findings in its CWA Section 316 rulemaking proceeding. ER at 9.4-2; SNC Answer at 14. Even if EPA’s analysis was dispositive of this issue (it is not), it clearly states that dry cooling is “appropriate in areas with limited water available for cooling or *where the source of the cooling water is associated with extremely sensitive species*.” ER at 9.4-2 (emphasis added). The entire discussion of dry cooling in the ER consists of a single paragraph summarizing EPA’s findings, and then eliminates the dry cooling alternative from further consideration. *Id.*

The ER merely parrots EPA’s Federal Register notice discussing “high capitol and operating and maintenance costs and their detrimental effects on electricity production” without reference to the environmental and economic conditions at Plant Vogtle. SNC Answer at 25. The Applicant then claims that “these facts alone are sufficient to reject dry cooling as a reasonable alternative.” *Id.* Clearly, this is not the case, as the EPA recognized in its Notice: Dry cooling is an appropriate technology where the source of the cooling water is associated with extremely sensitive species. ER at 9.4-2.

It is undeniable that the Savannah River, including the site of the proposed cooling structures, supports populations of threatened, endangered, and sensitive species.⁷

⁷ Applicants nonsensically imply that state and federally listed threatened and endangered species may not be equivalent to “extremely sensitive biological resources.” SNC Answer at 25. Yet, the ER Section

See ER § 2.4.2.3. Both the “no action” and dry cooling alternatives eliminate all potential impacts to these species associated with the proposed cooling system. NRC guidance instructs applicants to consider “other cooling systems” in its discussion of alternatives. Reg. Guide 2.4 at 10-1. The range of alternatives considered in the ER “should emphasize those alternative station systems that *appear promising in terms of environmental protection.*” *Id.* (emphasis added). In addition:

The applicant should include alternatives that meet the following criteria: (1) they provide *improved levels of environmental protection* (in the case of systems subject to 40 CFR Part 423, the analysis should focus on alternative systems that comply with 40 CFR Part 423 but are a better environmental solution, taking into account impacts on air quality, aesthetics, etc.) and (2) *although not necessarily economically attractive*, they are based on feasible technology available to the applicant during the design state.

Id. (emphasis added). Clearly, high costs and impacts on electricity production alone are not sufficient to eliminate the dry cooling alternative from further consideration, especially in light of the fact that sensitive species are present in the cooling water source.

III. CONTENTION 2: ENVIRONMENTAL JUSTICE - IMPACT ON MINORITY AND LOW-INCOME POPULATIONS

A. Because the Area Surrounding the Savannah River Site and Plant Vogtle Has an Exceptionally High Percentage of African-Americans and Low-Income Households, These Groups Will be Adversely Affected By the Expansion of Plant Vogtle

As the ER discloses, minority and low-income populations exist within a 50-mile radius around the Plant Vogtle site, *see*, ER § 2.5.4. Namely, of the 175 block groups

entitled, “Sensitive Species” addresses precisely these species. ER § 4.2.2.3. Similarly, the fact that the Savannah River is not designated as “critical habitat” under the Endangered Species Act has absolutely no relevance to the issue of whether these species are *present* in the Savannah River. SNC Answer at 25.

identified, 171 have Black races populations of 50 percent or more. ER § 2.5.4.2.

Further, of the 72 census block groups identified with respect to low-income populations, 14 have 50 percent or more low-income households. ER § 2.5.4.3. Additionally, four counties within 40 miles of Plant Vogtle have areas which are persistently distressed and suffer from unemployment and/or poverty. The census data for the region reveal the following:⁸

County	Census Tract	Poverty	Unemployment	distressed previous year
Jefferson, GA	13-163-9602.00	X	X	X
Jefferson, GA	13-163-9603.00	X	X	X
Jenkins, GA	13-165-9602.00	X		X
Allendale, SC	45-005-9703.00	X	X	X
Barnwell, SC	45-011-9701.00		X	X
Barnwell, SC	45-011-9703.00		X	X
Barnwell, SC	45-011-9704.00		X	X
Barnwell, SC	45-011-9705.00		X	X

This data reveals an exceptionally high percentage of both African-Americans and low-income households in the counties surrounding the Savannah River Site (“SRS”) and Plant Vogtle. It therefore holds true that any negative impact on the community surrounding SRS and Plant Vogtle will have a substantial impact on both African-Americans and low-income households due to the exceptionally high representation of these groups in the community. Alternatively, if the proposed new Vogtle units were

⁸ <http://132.200.33.131/cra/2006distressedorunderservedtracts.htm> (accessed Dec. 6, 2006).

located in almost any other community, where the percentage of African-Americans is lower or more representative of the State as a whole, the damaging impact from the new Vogtle units might not have as severe an impact on both African-Americans and low-income households. The Applicant argues that where the impact “fall[s] equally on all members of the community,” the matter is assessed in the EJ context by the “overall impacts analysis.” SNC Answer at 27. SNC goes on to argue that the EJ claim must fail because impacts from Plant Vogtle will adversely affect “all members of the community.” *Id.* This argument contorts the purpose of the EJ analysis. EJ contentions exist to protect minority and low-income populations from the exposure to unequal environmental risk due to their income or minority status. As is noted above, 171 of the 175 block groups identified contain African-American populations of 50 percent or more, and of the 72 census block groups identified with respect to low-income populations, 14 have 50 percent or more low-income households. ER § 2.5.4.2., ER § 2.5.4.3. Therefore, because the community is home to an exceptionally high percentage of both African-American and low-income households, any effect on the community as a whole still results in a disproportionately high impact on both minority and low-income households. SNC’s argument that harm from the proposed Vogtle units will affect the minority/low-income community “equally,” and therefore, will not have a disproportionate impact on these groups is an attempt to circumvent the fundamental purpose of an EJ contention.

B. Environmental Report Does Not Adequately Address Disparate Impacts on Low-Income and Minority Communities.

While the ER does address the instance of minority and low-income households within and around Burke County, it fails to take accurate account of the impact two new nuclear reactors will have on those populations based on factors particular to that area.

1. The Environmental Report Fails to Take Accurate Account of Subsistence Fishing on the Savannah River.

The ER fails to adequately address the impact of two new nuclear reactors at Plant Vogtle because it neglects subsistence fishing along the Savannah River within minority and low-income populations. The Applicant alleges that they “investigated the possibility of subsistence-living populations in the vicinity of VEDP.” SNC Answer at 30. Unlike the reports offered by Petitioners, Applicant’s investigation did not involve actually speaking to any local residents about subsistence fishing and fish consumption. Instead, SNC limited their investigation to merely “contacting local government officials, the staff of social welfare agencies, and local businesses.” *Id.* Applicant failed to contact any actual, local residents and inquire about their fishing and eating habits. In contrast, the investigation provided by Petitioners involved the in-person polling of 258 residents living along the Savannah River. The conclusions drawn from the report cited by Petitioners on subsistence fishing should be granted significantly more weight than Applicant’s incomplete, inadequate investigation. In addition, the fact that the data provided by Petitioners on subsistence fishing sharply conflicts with SNC’s conclusions, at the very least, raises a dispute of material fact and should remain a contention to be determined at the pre-hearing.

2. New Vogtle Units will Cause Significant Harm to Minority and Low-Income Residents Who Rely on Subsistence Fishing

Local minority and low-income populations are already subject to an unusual dose of radiation due to the current level of radioactive contamination in Savannah River fish. Two additional reactors at Plant Vogtle will increase the total radiological load of the Savannah River, which already receives radiological effluent from the existing Plant

Vogtle reactors and SRS. The ER does not recognize that subsistence fishing is an exposure pathway that disproportionately impacts low-income and minority populations.

The two existing units at Plant Vogtle discharge liquid effluent, including radiological and non-radiological waste, to the Savannah at a rate of 10,000 gallons per minute (14.4 MGD). ER Table 2.9-1. The current liquid discharge includes waste from fission/activation products (0.142 curries/year), tritium (1414 curries/year), dissolved, entrained gasses (0.00172 curries/year), and gross alpha (2.98E-05 curries/year), as well as non-radiological constituents. *Id.* The two proposed reactors will discharge 0.52 curries per year of fission products and 2,020 curries per year of tritium. ER Table 3.0-1; ER Table 3.5-1.

SNC's radiological monitoring program reveals that Savanna River fish, particularly resident game fish species, are contaminated with cesium-137.⁹ Semi-annual testing of commercially or recreationally important fish species in the vicinity of Plant Vogtle routinely find detectable levels of cesium-137 in the edible flesh of collected samples:

Cs-137 was the only radionuclide found in the semiannual collections of a commercially or recreationally important species of fish. It has been found in all but 4 of the 125 samples collected during operation and in all but 5 of the 32 samples collected during preoperation.¹⁰

Significantly, in 1999 SNC collected a largemouth bass “with a concentration of 2500 Ci/kg-wet,” exceeding the required reporting level of 2000 pCi/kg-wet.¹¹ The Applicant attributes the elevated cesiums-137 level in this sample to “the fact that largemouth bass

⁹ *Vogtle Electric Generating Plant, Annual Radiological Operating Report for 2005*, Southern Company (2006) (Petition for Intervention at Exhibit 2.1).

¹⁰ *Id.* at 4-28.

¹¹ *Id.*

are predators that concentrate Cs-137.”¹² Of course, humans who eat fish are also predators that concentrate cesium-137, and largemouth bass are a target species of subsistence fishermen on the Savannah River.¹³

Although individuals from all socio-economic backgrounds engage in fishing in the area, African-Americans in particular commonly engage in subsistence fishing along the Savannah River.¹⁴ As a recent report by the Institute for Energy and Environmental Research noted:

Many people use the Savannah River for subsistence fishing – that is, as a primary source for food; the practice is more common among African-Americans. Fish in the Savannah River have bioaccumulated cesium, mercury, and tritium...African-American fishermen consume considerably more fish than the maximum recommended for health reasons by the South Carolina Department of Health and Environmental Control. This is clearly an environmental injustice, because people who rely routinely on the river for a large portion of their protein are disproportionately impacted by the pollution from the site.¹⁵

The ER is inadequate because it fails to consider the unique burdens faced by minority and low-income populations who depend on the Savannah River for food. These populations will be disproportionately affected, via bioaccumulation, by increases in hazardous and radioactive material from the addition of two new nuclear reactors at Plant Vogtle. Further, the ER is inadequate because it fails to consider that impacts to important fish species targeted by subsistence fishermen will result in further disproportionate impacts to the minority populations that they rely on this resource as a

¹² *Id.*

¹³ Burger J (1998) *Fishing and risk along the Savannah River: Possible Intervention*. *J Toxicol Environ Health* 55:405–419 (Petition for Intervention at Exhibit 2.2).

¹⁴ Arjun Makhijani, Ph.D. and Michele Boyd, Institute for Energy and Environmental Research, *Nuclear Dumps by the Riverside: Threats to the Savannah River From Radioactive Contamination at the Savannah River Site* (2004) (Petition for Intervention at Exhibit 2.3).

¹⁵ *Id.*

source of nutrition. Low-income and minority communities will bear the burden if target species are less abundant, smaller, or less healthy because of the proposed new units.

Additionally, the ER fails to take account of the disproportionate impact on minority and low-income populations based on their higher-than-average consumption of fish. One study reports that “[e]thnicity and education contribute significantly to explaining variations in [the] number of fish meals per month, serving size, and [the] total quantity of fish consumed per year.”¹⁶ Not only do African-Americans consume more fish per year than Caucasians, they often eat fish in much larger portions, frequently surpassing allowable fish-consumption levels.¹⁷ Further, low-income individuals also consume greater amounts of fish than those with higher incomes.¹⁸ Taken together these factors indicate that both African-American and low-income individuals are at specific heightened risk from hazardous materials in the Savannah River and that any increase in such materials from the addition of two new nuclear reactors will adversely affect those populations in particular.

Likewise, the ER is inadequate because it fails to consider the disproportionate impact on low-income and minority populations based on the cumulative effects of hazardous substances in the Savannah River, as well on the increased harm posed by certain cooking methods prevalent in the area. Both Georgia and South Carolina already issue fish consumption advisories along the Savannah River based on the presence of hazardous and radioactive material in the water. While mercury is the main threat to human health by way of fish consumption, the presence of radionuclides is also a

¹⁶ Joanna Burger, et al., *Factors in Exposure Assessment: Ethnic and Socioeconomic Differences in Fishing and Consumption of Fish Caught along the Savannah River*, Risk Analysis, Vol. 19, No. 3, p. 427, 1999. (Petition for Intervention at Exhibit 2.4).

¹⁷ *Id.* at 506.

¹⁸ *Id.* at 431.

significant factor informing the presence of these consumption advisories.¹⁹

Radiocesium (¹³⁷Cs) is of particular concern because levels of ¹³⁷Cs actually increase when fish is cooked.²⁰ One study found that radiocesium levels increase by 32% when fried with breading, and by 62% when fried without breading.²¹ Further, it was also noted in that same study that “over 80% of the people interviewed along the Savannah River deep-fried their fish regularly.”²²

Finally, the ER is inadequate because it fails to consider the lack of knowledge of fish consumption advisories or awareness of associated risks among the minority and low-income populations. Unfortunately, compliance with fish consumption advisories is quite low. This fact is based on a number of issues, including “confusion over the meaning of advisories” and lack of understanding regarding associated risks.²³ Significantly, minority and low-income populations have less awareness of the consumption advisories as compared to others groups.²⁴ This fact, in addition to their higher than average consumption of fish from the Savannah River, indicates that minority and low-income populations are particularly susceptible to health risks posed by contamination. However, the ER fails to take this factor into account in its consideration of Environmental Justice issues.

¹⁹ Joanna Burger, *Science, Policy, Stakeholders, and Fish Consumption Advisories: Developing a Fish Fact Sheet for the Savannah River*, Environmental Management, Vol. 27, No. 4, p. 503, 2001. (Petition for Intervention at Exhibit 2.5).

²⁰ Joanna Burger, et al., *Effects of Cooking on Radiocesium in Fish from the Savannah River: Exposure Differences for the Public*, Arch. Environ. Contam. Toxicol. 46, p. 231, 2004. (Petition for Intervention at Exhibit 2.6).

²¹ *Id.* The weight loss during cooking of a breaded fish was 25% and the weight loss of an un-breaded fish was 39%.

²² *Id.* at 232.

²³ Burger, *Science, Policy, Stakeholders, and Fish Consumption Advisories*, note 19, *supra*, at 501. (Petition for Intervention at Exhibit 2.5).

²⁴ *Id.* at 507.

3. Data From Studies on the Savannah River Site Should be Extrapolated to the New Vogtle Units Because the Savannah River Site Encompasses the Area on Which the New Units Would be Built

The NRC Staff Answer attempts to dismiss Petitioners' EJ contentions on the basis that Petitioners' expert reports focus on the adjacent SRS and not on the proposed new Vogtle units. NRC Staff Answer at 25-26. The NRC argues that reports on reflecting radiation in the water and the effects on the local populations provided by the Petitioners should, therefore, be dismissed. This formalistic argument must fail. The SRS sits directly across the river from where the proposed new Vogtle units would be built. In fact, the SRS technically encompasses the area on which the Vogtle units will be built. Any data gathered from the SRS should logically be applied to the Vogtle site because of the close proximity and overlap of the two sites. Specifically, Professor Burger's report on radiation taken from the SRS also accurately reflects the radiation directly across the river in the adjacent Vogtle site. Similarly, Burger's study on fish consumption in the area along the SRS would reveal the same figures for a stretch of land directly across the river from the studied site. To argue otherwise is to require an illogical degree of specificity.

C. The Environmental Report Fails to Properly Consider the High Cancer Rate in Burke County.

The ER fails to adequately consider the impact two new nuclear reactors will have on the minority populations around Plant Vogtle who already suffer from higher-than-average cancer rates. One study conducted by the University of South Carolina has shown that there is a higher than average instance of cervical cancer in black women, and a higher rate of esophageal cancer in black men, within a fifty mile radius of the

Savannah River Site, which lies just across the River from Plant Vogtle.²⁵ While the study noted that these types of cancers are not necessarily associated with exposure to radioactive materials, the impact of increased levels of hazardous and radioactive materials into the area, including into the Savannah River, on minority population already suffering from high rates of cancer should be assessed.²⁶

A number of studies have shown that living near a nuclear power plant can increase certain health risks, including death. Particularly, children and fetuses are highly susceptible to the impacts of radiation. The Agency for Toxic Substances and Disease Registry (ATSDR), a federal public health agency of the U.S. Department of Health and Human Services, Toxicological Profile on Cesium reports that Cesium-137 is found in the breast milk of mothers with an internal cesium-137 burden (citing Johansson et al. 1998; Thornberg and Mattsson 2000), and can be transferred to nursing infants (citing Johansson et al. 1998).²⁷ Cesium-137 has also been shown to cross the placental barrier of animals.²⁸ Studies also indicate that subsequent the closure of 8 U.S. nuclear plants in 1987, cancer incidence in children younger than 5 years of age in proximate areas for which data were available fell significantly after the shutdowns.²⁹

Recent studies of morbidity and mortality statistics compiled by the U.S. Centers for disease Control and Prevention compare death rates before and after Plant Vogtle's existing reactors went online, and reflect that the death rate per 100,000 population from all cancers in Burke County rose 24.2 percent and that infant deaths increased by 70.1 for

²⁵ 1997 FEB 3, Cancer Weekly via NewsRx.com & NewsRx.net (Petition for Intervention at Exhibit 2.7).

²⁶ *Id.*

²⁷ ATSDR Toxicological Profile on Cesium, available in its entirety at www.atsdr.cdc.gov/toxprofiles/tp157.html.

²⁸ *Id.*

²⁹ See Mangano, et al. 2002, *Infant Death and Childhood Cancer Reductions after Nuclear Plant Closings in the United States*, Archives of Environmental Health, Vol. 57(1), January/February 2002, pp 23-31. (Petition for Intervention at Exhibit 2.7).

Burke County.³⁰ In light of these studies, the ER must consider the already existing negative health impacts in the Burke County area when assessing the impacts of the two new reactors.

D. The Environmental Report Fails to Consider the Inability of low-income and minority populations around Plant Vogtle to respond or evacuate in the case of a nuclear accident.

The ER is deficient because it fails to discuss or analyze the disparate impact a significant accident would have on minority and low-income populations. In the Environmental Impact Statement for the proposed Mixed Oxide Fuel Fabrication Facility at SRS, the NRC acknowledged that a significant accident would most likely affect minority or low-income communities due to the demographics and prevailing wind in the area.³¹ Plant Vogtle is practically adjacent to SRS and, therefore, a significant accident at the new reactors would have a similar disparate impact on these low-income and minority populations. The ER is deficient because it does not discuss or analyze this impact such an accident would have on these populations, nor does it address these communities' ability to respond or evacuate in the event of a nuclear accident.

Pursuant to 10 C.F.R. § 52.17(b)(2)(ii), SNC submitted a proposed complete and integrated emergency plan to the NRC with the ESP application. Part 5, Emergency Plan; ER § 13.3. However, neither the Emergency Plan nor the section of the ER discussing emergency planning addresses the demographics of the communities within the plume exposure pathway or ingestion exposure pathway. *Id.* As previously discussed, low-income and minority communities dominate the area within the proposed

³⁰ U.S. Centers for Disease Control and Prevention (<http://wonder.cdc.gov>)(uses ICD-9 codes 000.1-799.9).

³¹NUREG-1767, Vol. 1, Environmental Impact Statement on the Construction and Operation of a Proposed Mixed Oxide Fuel Fabrication Facility at the Savannah River Site, South Carolina, Final Report, January 2005, Executive Summary at p. xix. (Petition for Intervention at Exhibit 2.8.).

EPZs. Despite this, and the previous NRC finding of disproportionate impacts from an accident at SRS, the ER fails to disclose and analyze potentially disparate impacts resulting from an accident or terrorist incident.

The recent Hurricane Katrina disaster revealed that low-income and minority populations are particularly vulnerable in emergency situations. Prior to Hurricane Katrina, the City of New Orleans developed and implemented an emergency plan that was well engineered and publicized. The evacuation plan functioned adequately for the population with automobiles, but utterly failed to protect the most vulnerable populations. One evaluation of the Hurricane Katrina emergency response describes this disparity:

People who had resources were served relatively because planners are familiar with their abilities and needs. People who were poor, disabled or ill were not well served, apparently because decision-makers were unfamiliar with and insensitive to their needs.³²

Obviously, the rural area surrounding Plant Vogtle presents very different emergency planning and evacuation challenges from a major city like New Orleans. However, Hurricane Katrina revealed that emergency plans can overlook the most vulnerable segments of society. In order to prevent such disparate impacts, the ER must explicitly consider environmental justice.

IV. CONTENTION 3: FAILURE TO EVALUATE WHETHER AND IN WHAT TIME FRAME SPENT FUEL GENERATED BY PROPOSED REACTORS CAN BE SAFELY DISPOSED OF

Contention 3 asserts that the ER is deficient because it fails to discuss the environmental implications of the substantial likelihood that spent fuel generated by the

³² Litman, *Lessons from Katrina and Rita: What Major Disasters Can Teach Transportation Planners*, *Journal of Transportation Engineering*, Vol. 132, January 2006, pp. 11-18. (Petition for Intervention at Exhibit 2.9).

new reactors will have to be stored at the Vogtle site for more than 30 years after the reactors cease to operate, and perhaps indefinitely. Petition for Intervention at 26.

Both SNC and the NRC Staff oppose admission of this Contention on the grounds that it is “an impermissible challenge to the Commission’s regulations.” SNC Answer at 41-42; NRC Staff Answer at 31. They contend that the issues raised by the Contention must be resolved in a rulemaking or a waiver petition. SNC Answer at 47-49; NRC Staff Answer at 32-33.³³

In making this argument, SNC and the NRC Staff ignore the fact that Petitioners have not challenged the NRC’s regulations. Instead, they have challenged the Environmental Report (“ER”) for its failure to consider significant new information and changed circumstances that affect the conclusions of the Waste Confidence Decision. Hearing Request at 26, 29-31. Moreover, SNC and the NRC Staff overlook the fact that 10 C.F.R. § 2.309(f)(2) requires that in the first instance, a petitioner who seeks to raise an environmental dispute in a licensing proceeding must challenge the applicant’s ER. However, SNC’s and the NRC Staff’s arguments appear to be supported by the Commission’s recent ruling in *Entergy Nuclear Vermont Yankee L.L.C. and Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station) and *Entergy Nuclear Generation Company and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), CLI-07-03, _ NRC _ (January 22, 2007) (“CLI-07-03”). In *Entergy*, the Commission held that “[f]undamentally, any contention on a ‘category one’ issue amounts to a challenge to our regulation that bars challenges to generic environmental

³³ Nevertheless, SNC correctly points out that petitioners would be unable to satisfy the standard for a waiver, because their concerns do not raise “special circumstances” unique to the Vogtle plant. SNC Answer at 47, citing 10 C.F.R. § 2.335. Thus, as a practical matter, the filing of a waiver petition would have no utility.

findings.” *Id.*, slip op. at 6. While CLI-07-03 relates to a license renewal proceeding, the language of the decision appears to be broad enough to cover any NRC licensing proceeding.

In light of CLI-07-03, Petitioners intend to submit a rulemaking petition to the Commission, asking the Commission to reconsider the Waste Confidence Decision in light of the new and significant information and changed circumstances described in Petitioners’ Contention EC-3. Petitioners’ rulemaking petition will also demand that, as required by the National Environmental Policy Act (“NEPA”), the NRC must (a) complete its review before issuing an ESP to SNC and (b) apply any changes to the Waste Confidence Decision that arise from that NEPA review process in its licensing review of SNC’s ESP application. In order to make a clear record of Petitioners’ insistence that the requested reconsideration of the Waste Confidence Decision must be applied in this proceeding, Petitioners request (a) a ruling from the ASLB on the admissibility of Petitioners’ Contention that dismisses the Contention on procedural grounds rather than substantive grounds, and (b) a ruling retaining Petitioners as parties to this proceeding pending completion of NRC action on their petition for rulemaking.

V. CONTENTION 4: FAILURE TO ADDRESS ENVIRONMENTAL IMPACTS OF INTENTIONAL ATTACKS

Contention 4 asserts that the ER for the Vogtle ESP application is inadequate to satisfy NEPA and NRC implementing regulations because it fails to address the environmental impacts of intentional attacks on the proposed nuclear power plants, or to evaluate a reasonable range of alternatives for avoiding or mitigating those impacts; and because it fails to address the cumulative impacts of an intentional attack on the existing

Plant Vogtle, or to evaluate a reasonable range of alternatives for avoiding or mitigating those impacts. Petition for Intervention at 32-36.

Both SNC and the NRC Staff oppose admission of the Contention on the ground that it is barred by the Commission's holding in *Private Fuel Storage* (Independent Spent Fuel Storage Installation), CLI-02-25, 56 NRC 340 (2002) ("*Private Fuel Storage*"). SNC Answer at 51; NRC Staff Answer at 34. In *Private Fuel Storage*, the Commission held that as a matter of law, NEPA does not require consideration of intentional attacks on nuclear facilities under any circumstances. In *San Luis Obispo Mothers for Peace v. NRC*, 449 F.3d 1016 (9th Cir. 2006), cert. denied __ S.Ct. __ (January 17, 2007) ("*Mothers for Peace*"), the Ninth Circuit held that the Commission's rationale for *Private Fuel Storage* was unreasonable. While SNC and the NRC Staff are correct that as a technical matter, *Mothers for Peace* is not binding on the Commission in other circuits, the decision casts significant doubt on the continuing viability of *Private Fuel Storage* as a valid precedent, for two reasons. First, as the Ninth Circuit noted in *Mothers for Peace*, the Commission's rationale for refusing to address the environmental impacts of intentional attacks was purely legal, and thus the Commission gave itself no room to distinguish the circumstances of the Diablo Canyon spent fuel storage facility licensing case from other cases. Second, the Court found that each of the various facets of the rationale was unreasonable, leaving no aspect of the rationale intact. On remand, therefore, the Commission must take an entirely new approach to the consideration of intentional attacks on the Diablo Canyon facility. It will be difficult for the Commission to justify taking two radically different approaches to the analysis of environmental impacts of intentional attacks in the same regulatory scheme.

In light of the Ninth Circuit's decision in *Mothers for Peace* and the recent Supreme Court decision denying certiorari, Petitioners request that the Commission refer this Contention to the Commission for disposition.

VI. CONTENTION 5: FAILURE TO EVALUATE ENERGY ALTERNATIVES

Contention 5 asserts that the Environmental Report for the Vogtle ESP is deficient because the Alternatives analysis is flawed on two accounts: 1) it is based upon premature and incomplete information that cannot be adequately assessed at this point in time, and 2) it lacks a full and objective evaluation of all reasonable alternatives. Petition for Intervention at 36-39.

SNC and the NRC Staff claim that Contention 5 fails to show a genuine dispute with the applicant due to a lack of specificity and basis for the Contention. SNC Answer at 57; NRC Staff Answer at 37-41. All portions of Contention 5 – including the issues of the need for power, the technical potential for Combined-Heat and Power alternatives, biomass and Integrated Gasification Combined Cycle as alternative energy sources, and cost benefit analysis of alternatives – have been pleaded with specificity and with adequate evidence supporting Petitioners' contentions of the inadequacy of the ER in evaluating energy alternatives.

A. Inadequate Information In Assessment: Need For Power

As an initial matter, discussion of the benefits in the ER is appropriate where the applicant has elected to address such. Because SNC elected to address energy alternatives in Section 9.2 of the ER, consideration of reasonable alternatives is within the scope of this proceeding. Neither the NRC Staff nor SNC disputes that the NRC Staff

will appropriately consider SNC's alternative energy assessment at the ESP stage. NRC Staff Answer at 36.³⁴

As Georgia Power's upcoming Integrated Resource Plan (IRP) to be filed with the Georgia Public Service Commission (GPSC) will not be fully reviewed and analyzed until later in 2007, the ER failed to include the accurate projected demand in its evaluation.³⁵ The NRC Staff contends that the GPSC analyses are outside the scope of this proceeding because it involves economic matters. NRC Staff Answer at 37.

However, the IRP review is based on issues beyond economic matters that are also within NRC jurisdiction – notably, demand and usage in relation to the subject application. The GPSC regulates electricity in Georgia and therefore provides the most accurate data on demand and usage.³⁶ It is through the IRP process that GPSC examines Georgia Power's demand forecast and makes adjustments to the demand forecast based on the potential that energy efficiency can meet forecasted demand. As noted in the Petitioners' Petition for Intervention, "claims surrounding the need for power linked to the target value of 2,234 MWe for net electrical output for a proposed two-unit facility at VEGP have not been reviewed by the Georgia Public Service Commission." Petition for Intervention at 37. By neglecting the reviews of the GPSC, SNC has failed to support its claim that the IRP it relied on contains updated and accurate information, and has not fully analyzed the demand and needs involved in the ER. *Id.* at 58. The Petitioners' assertions, grounded

³⁴ See also *Exelon Generation Co., LLC* (Early Site Permit for the Clinton ESP Site), CLI-05-29, 62 NRC 801, 806 n.24 (2005) ("[w]hen (as here) an ESP applicant chooses to address alternative energy sources and to obtain agency consideration of its alternative energy source assessment, that issue becomes material to the adjudication and is appropriate for litigation on properly grounded contentions").

³⁵ At SNC's urging, the GA PSC has not scheduled analysis of Georgia Power's Vogtle expansion until the 2007 IRP case.

³⁶ Georgia Public Service Commission, "Electric Regulation," <http://www.psc.state.ga.us/electric/electric.asp> (accessed January 22, 2007).

on the lack of findings by the GPSC, are clearly sufficient in specificity to highlight the inadequacy of the Applicant's demonstration in the ER of the need for power.

A specific reference to a portion of the ER regarding the need for power was not made because the Contention is that the ER fails to state the degree to which energy efficiency can meet projected demand. 10 C.F.R. § 2.309(f)(1)(vi) does require that a contention include "specific references to specific portions of the application (including the applicant's environmental report . . .)" that are in dispute. But, 10 C.F.R. § 2.309(f)(1)(vi) also allows "if the petitioner believes that the application fails to contain information on a relevant matter as required by law, the identification of each failure and the supporting reasons for the Petitioners' belief." Therefore, this Contention is properly stated as a deficiency of the report rather than a specific portion in dispute. *Id.* at 37.

B. Demand Side Resources

The NRC Staff charges that Petitioners failed to not provide sufficient context or basis for the ICF report as support for an admissible contention because the document was attached without an explanation of its significance. "Petitioners do not explain the context of the presentation, where it was given or why, or how it is relevant to the Vogtle ESP matter." NRC Staff Answer at 39. In fact, petitioner cited this report because it was cited in the ER. "The 2005 study by ICF³⁷, cited in the ER at p. 9.2-4, documents significant under-utilization of demand side resources that are readily available." Petition for Intervention at 38. The NRC's characterization of the report as only a set of slides standing alone that have not been shown to be relevant to the Vogtle ESP matter is

³⁷ ICF Consulting, Georgia Environmental Facilities Authority Assessment of Energy Efficiency Potential in Georgia Final Report, May 5, 2005 at Chapter 3. (Petition for Intervention at Exhibit 5.2).

patently erroneous, as a report cited in Vogtle's ESP application is plainly relevant to Vogtle's ESP application.

The study prepared by the ICF specifically for the Georgia Division of Energy Resources provides a sufficient context to evaluate the lack of attention SNC provided with regard to available alternatives in the Environmental Report *prepared and presented by the applicant*. The Staff and SNC argue that the Petitioners "did not develop the contents or conclusions of the ICF report to dispute the ER analysis on demand side management programs, or, indeed, dispute the particulars of the ER in any way." NRC Staff Answer at 39. On the contrary, Petitioners clearly disputed the inadequate treatment of demand-side alternatives in the ER.

"There is significant, untapped energy efficiency potential in the service territory of the applicant utilities. The 2005 study by ICF³⁸, cited in the ER at p. 9.2-4, documents significant under-utilization of demand side resources that are readily available.³⁹ Of note, the ICF study done for Georgia is recognized to be conservative in its estimates and is also not reflective of recent fuel price increases that Georgia utilities have experienced which in turn make the cost effective potential for energy efficiency higher. It is recognized that the ICF study produced energy efficiency results at the low end of other energy efficiency potential studies." Petitioner for Intervention at 38.

The above-mentioned discussion provides a full factual basis for its contention by describing the findings of a study used in the ER and elaborating as to how SNC failed to adequately consider demand-side resources as an option.

C. Combined-Heat and Power, Biomass, and IGCC Alternatives

The Staff and the SNC argue that technical potential for Combined-Heat and Power alternatives is insufficient as evidence cited in the ER. However, as noted in the Petition for Intervention, "A significant percentage of the technical potential for CHP is

³⁸ *Supra.*

³⁹ *Supra.*

estimated to be economic.” Petition for Intervention at 39 n.47. Further, the ICF study fully illustrates how CHP can be economically feasible as coal prices increase.⁴⁰ Further, Contention 5 argues not simply that SNC failed to fully analyze CHP as an alternative, but rather that SNC *wholly excluded* CHP from their consideration in their ER. Hence, the very absence of any consideration of CHP technologies in their alternatives, in the face of existing IFC studies, shows a clear neglect of fully exploring alternatives in the ER.

The NRC Staff and SNC argue that the Petitioners’ discussion of biomass used “bald, conclusory allegation[s] of dispute with the applicant.” NRC Staff Answer at 40 (citing *Millstone*, CLI-01-24, 54 NRC at 358).⁴¹ The NRC Staff and the SNC argue that the Petitioners’ Contention “lacked specific facts, expert testimony or legal authority.”⁴² SNC Answer at 61; NRC Staff Answer at 40. However, Petitioners’ Contention addresses the lack of specificity in the ER. “The ER fails to identify which biomass energy generating technologies and biomass feedstocks were analyzed.” The petition criticized the general nature of the application, wherein SNC did not explain the methodology used in their analysis of biomass technology *specific to Georgia*. As such, the petitioner provided sufficient basis for their argument where they identified an omission in the ER biomass evaluation.

The Staff again claims a lack of specificity and basis in Petitioners’ Contention that “claims made in Section 9.2.2.11 Integrated Gasification Combined Cycle (IGCC) presume that the stated risks for cost-of-service utilities of new IGCC facilities are greater than the risks of building new nuclear reactors whereas an overall risk comparison

⁴⁰ *Supra* n.4 at 28-28

⁴¹ See 10 C.F.R. §2.309(f)(1)

has not been made available . . .” Petition for Intervention at 39 n.47. The 10 C.F.R. § 2.309(f)(1)(vi) requirement that “specific references to specific portions” be made was satisfied when 9.2.2.11 was identified as the specific portion of the ER at issue because the entire section develops the presumption that is in question. The Contention clearly states that the basis for the Contention that a conclusion was reached in the ER based on a presumption for which adequate evidence was not provided is the absence of an overall risk comparison.

D. Incomplete Cost-Benefit Analysis

The assertion that ER Section 10.4.1.2 (“Fuel Diversity and Natural Gas Alternative”) should analyze multiple baseload options in a cost-benefit analysis, including biomass and IGCC, instead of just discussing natural gas only, is founded on the logical conclusion that a discussion of ‘diversity’ would include more than just one issue and that Biomass energy generating technologies and IGCC were addressed in earlier sections of the ER, cited as Sections 9.2.2.6 and 9.2.2.11 respectively, but were erroneously omitted from section 10.4. Petition for Intervention at 39 n.47.

VII. CONCLUSION

For the reasons stated herein, each of Petitioners’ Contentions should be admitted for hearing.

Respectfully submitted this 24th day of January, 2007,

[Original signed by L. Sanders]

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of)
)
SOUTHERN NUCLEAR OPERATING) Docket No. 52-011-ESP
COMPANY)
)
(Early Site Permit for the Vogtle ESP Site))

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing JNT SUPPLEMENT TO PETITION FOR INTERVENTION have been served upon the following persons by Electronic Information Exchange and/or electronic mail.

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Dated this 24th day of January, 2007

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