March 26, 2010

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE COMMISSION

In the Matter of	)	
	)	
SOUTH CAROLINA ELECTRIC AND	)	
GAS COMPANY	)	Docket Nos. 52-027 COL
	)	52-028 COL
(Virgil C. Summer Nuclear Station	)	
Units 2 & 3)	)	
	)	
	)	

BRIEF ON APPEAL
OF SIERRA CLUB AND FRIENDS OF THE EARTH

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ARGUMENT

THE LICENSING BOARD ERRED IN REJECTING THE ADMISSIBILITY OF THE ENERGY EFFICIENCY ALTERNATIVES AND AP1000 COST CONTENTIONS ADVANCED BY SIERRA CLUB AND FRIENDS OF THE EARTH.

In its March 17, 2010, Memorandum and Order on Remand (Denying on Remand the Sierra Club and Friends of the Earth's Petition to Intervene) the Licensing Board once again summarily dismissed the environmental contentions of Sierra Club and Friends of the Earth, which challenge the inadequacy of SCE&G's environmental assessment of the cost of the proposed AP1000 nuclear plant project and the availability of the alternatives to the proposed nuclear plant provided by cost-effective energy efficiency and demand side management (DSM) efforts. The Licensing Board summarily rejected these contentions at the pleading stage, without so much as a conference call or opportunity for supplemental pleading or argument, despite their support by the affidavit expert opinion evidence of former public utilities commissioner and energy planning expert Nancy Brockway and numerous citations to extrinsic evidence of the availability and efficacy of energy efficiency alternatives to this expensive new nuclear plant construction project. Moreover, this rejection was based on the stale record of December 2008 submissions; when the whole landscape of energy production and efficiency planning , including that of SCE&G's South Carolina territory, is changing and has changed to favor demand reduction and new plant displacement or deferral.

The Licensing Board's decision erects such insurmountable and artificial barriers to the fair consideration of these alternatives to the Applicant's preconceived project as to make this costly nuclear plant the only possible alternative, contrary to the NRC's responsibility to the public and our members under the National Environmental Policy Act. The Licensing Board Order on Remand should be reversed and the contentions of Sierra Club and Friends of the Earth should be admitted for a fair hearing.

On appeal to the Commission the Licensing Board's initial decision rejecting the representational standing of Friends of the Earth on hyper-technical pleading grounds was reversed; and the Licensing Board's "conclusory" CLI-10-01, at p. 26, rejection of Joint Petitioners' "Need for Power, Energy Alternatives and Costs of Proposed Action" Contention 3 was reversed in part and remanded for further consideration. Regrettably, the Licensing board's Order on Remand, despite its heft, was no less conclusory nor less erroneous in its rejection of Joint Petitioners' environmental contentions. The Licensing Board once again improperly allows the Applicant to so narrowly define the project purpose as "baseload power" as to improperly exclude consideration of any alternative such as the environmentally superior cost-effective energy efficiency or demand side management in contention 3B, or the corollary higher costs of the proposed nuclear project raised in contentions 3E, 3F and 3G.

The Sierra Club is the oldest and largest non-profit grassroots environmental organization in the world with some 750,000 members, 65 Chapters, over 400 local

groups. The South Carolina Chapter has nine local groups with some 5,800 members across the state. The Club's mission is to explore, enjoy, and protect the wild places of the earth; to practice and promote the responsible use of the earth's ecosystems and resources; to educate and enlist humanity to protect and restore the quality of the natural and human environment; and to use all lawful means to carry out these objectives. The Club and its members actively promote safe energy solutions including energy efficiency and renewable energy resources to combat the climate crisis.

The organization has been actively involved in a variety of issues involving nuclear power production and waste disposal in South Carolina. The South Carolina Chapter of the Club has offices and meeting space at 1314 Lincoln Street #211, Columbia, South Carolina 29301. Many of its members are customers of SCE&G who live, work, recreate and use natural resources near the existing Summer nuclear plant and the site of the proposed Summer reactors. Petition to Intervene and Request for hearing, p. 3.

Friends of the Earth is a non-profit environmental advocacy organization with members in all the 50 states including South Carolina and its headquarters in Washington, DC. FoE is affiliated with Friends of the Earth International, the world's largest environmental advocacy network with member organizations in 70 countries. FoE has worked for over 38 years to promote a healthy and just world and has been a leading advocate for safe and sustainable energy. It has worked to show how it is possible to shift the U.S. and global economies to a cleaner energy basis, using the latest in efficiency improvements, along with renewable energy sources such as wind, geothermal, and solar power. Members of FoE are ratepayers of SCE&G and neighbors of the site of the proposed nuclear facility. Petition to Intervene and Request

for hearing, pp. 3-4.

Pursuant to 10 C.F.R. § 2.309, a request for hearing or petition to intervene is required to address (1) the nature of the petitioner's right under the Atomic Energy Act ("AEA") to be made a party to the proceeding; (2) the nature and extent of the petitioner's property, financial, or other interest in the proceeding; and (3) the possible effect of any order that may be entered in the proceeding on the petitioner's interest.

Here, the granting of a combined operating license ("COL") to SCE&G would permit the construction and operation of two nuclear reactors on the Summer site in Fairfield County, South Carolina. The Sierra Club and FoE's members seek to protect their lives, health and safety and economic interests as customers and ratepayers of SCE&G by opposing the issuance of a COL to SCE&G. The Sierra Club and FoE seek to ensure that no COL is issued by the Commission unless SCE&G demonstrates full compliance with the AEA, the National Environmental Policy Act ("NEPA") and all other applicable laws and regulations.

The Sierra Club and FoE set forth with particularity their proposed contentions. For each contention, the Sierra Club and FoE demonstrated that the issues raised are within the scope of the proceeding, that the issues are material to the Commission's licensing responsibilities, and that there exists a genuine dispute between the petitioners and the licensee. In its contentions, the Sierra Club and FoE present the specific issues of law or fact to be raised, the bases for the contentions and statements

of fact or expert opinion in support of the contentions. For each of the contentions, the legal considerations included in the section above are also incorporated. Sierra and FOE raise the following full original contention and subparts:

Contention 3 (Need for Power, Cost of Action and Alternatives).

Contention 3 (Need for Power, Cost of Action and Alternatives).

Contrary to the requirements of the National Environmental Policy Act and 10 C.F.R. § 51.45 the Applicant's Environmental Report (ER) fails to adequately discuss the impacts of the proposed action and alternatives in proportion to their significance; fails to discuss alternatives with sufficient completeness to aid the Commission in developing and exploring "appropriate alternatives to recommended courses of action" in this "proposal which involves unresolved conflicts concerning alternative uses of available resources;" fails to adequately present the environmental impacts of this proposal and the alternatives in comparative form; fails to adequately discuss the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity with respect to this proposal and alternatives; fails to adequately discuss irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented; fails to include an adequate 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; fails to include analyses which, to the fullest extent practicable, quantify the various factors considered or adequately discuss important qualitative considerations or factors that cannot be quantified; and fails to contain sufficient data to aid the Commission in its development of an independent analysis in the following particulars:

A. With respect to Chapter 8 of the ER, "Need for Power," the Applicant completely dismisses the current economic crisis and recent reductions in its sales, and has conducted no sensitivities of its load forecast to try to capture the possible effects of a recession, including the possibility of a long and deep economic downturn.

B. With respect to Chapter 9 of the ER, "Proposed Action Alternatives," the Applicant almost completely ignores demand-side management, undervaluing opportunities for cost-effective energy efficiency and demand response or load management.

C. With respect to Chapter 9 of the ER, "Proposed Action Alternatives," the Applicant ignores the potential contribution of renewables to an overall sustainable and economic portfolio, and does not take into account significant improvement in unit costs and operations of renewables in recent years and as projected to continue.

D. With respect to Chapter 9 of the ER, "Proposed Action Alternatives," the Applicant fails to properly evaluate the risk of choosing a single technology and two extremely large construction projects in lieu of a more modular approach made up of a greater variety of resource options allowing a greater opportunity to change course during implementation of the plan, in the event that risks, known to be potential and those that are not now foreseeable, develop into real difficulties during implementation, and in the event that other superior opportunities become realistic.

E. With respect to Chapter 10 of the ER, "Proposed Action Consequences," the Applicant underestimates the impact of its proposed construction and operation on vulnerable customers via rate increases.

F. With respect to Chapter 10 of the ER, "Proposed Action Consequences," the Applicant's cost estimate for construction and operation fails to take into account recent rapid increases in the cost of inputs for construction.

G. With respect to Chapter 10 of the ER, "Proposed Action Consequences," the Applicant's cost estimate for construction and operation is based on an unrealistic schedule, and assumes a settled and approved design for its proposed AP1000, which has not yet been established and for which there is no firm date for Commission determination.

A contention is admissible when it meets the requirements in 10 C.F.R. § 2.309(f)(1):

> (1) A request for hearing or petition for leave to intervene must set forth with particularity the contentions sought to be raised. For each contention, the request or petition must:

(i) Provide a specific statement of the issue of law or fact to be raised or

controverted;

(ii) Provide a brief explanation of the basis for the contention;

(iii) Demonstrate that the issue raised in the contention is within the scope of the proceeding;

(iv) Demonstrate that the issue raised in the contention is material to the findings the NRC must make to support the action that is involved in the proceeding;

(v) Provide a concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue and on which the petitioner intends to rely at hearing, together with references to the specific sources and documents on which the requestor/petitioner intends to rely to support its position on the issue; and

(vi) Provide sufficient information to show that a genuine dispute exists with the applicant/licensee on a material issue of law or fact. This information must include references to specific portions of the application (including the applicant's environmental report and safety report) that the petitioner disputes and the supporting reasons for each dispute, or, 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 petitioner's belief.

The purpose of the contention rule is to, "focus litigation on concrete issues and result in a clearer and more focused record for decision." 69 Fed. Reg. at 2202; *see also Vermont Yankee Nuclear Power Corp. v. NRDC*, 435 U.S. 519, 553-54 (1978); *BPI v. AEC*, 502 F.2d 424, 428 (D.C. Cir. 1974). The purpose for the basis requirements is: (1) to assure that the contention raises a matter appropriate for adjudication in a particular proceeding; (2) to establish a sufficient foundation for the contention to warrant further inquiry into the assertion; and (3) to put other parties sufficiently on

notice of the issues so that they will know generally what they will have to defend against or oppose. *Peach Bottom*, ALAB-216, 8 AEC at 20-21; *Ariz. Pub. Serv. Co., et al.* (Palo Verde Nuclear Generating Station, Units 1, 2 and 3), LBP-91-19, 33 NRC 397, 400 (1991). The contentions submitted by Sierra and FoE amply meet these requirements; raise significant environmental issues supported by substantial information and expert opinion; are material to the NRC's licensing decision and should be admitted for adjudication.

As the Commission has stated regarding the contention-filing stage, "[t]he protestant must make a *minimal* showing that material facts are in dispute, thereby demonstrating that an 'inquiry in depth' is appropriate." Final Rule, Rules of Practice for Domestic Licensing Proceedings – Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168 at 33,171 (August 11, 1989). (emphasis added), citing *Connecticut Bankers Association v. Board of Governors,* 627 F.2d 245, 251 (D.C. Cir. 1980). The Commission also stated there that "the quality of the evidentiary support provided at the summary disposition stage is expected to be of a higher level than at the contention filing stage." *Id.*

Thus, the Licensing Board misapprehend these requirements, generally, where it insists on a dispositive standard of proof for a contention or its bases, rather than the appropriate pleading and basis standard appropriate at this stage of the proceeding. A COL is authorization from the NRC to construct and operate a nuclear power plant at a specific site. Before issuing a COL, the NRC staff is required to complete safety and

environmental reviews of the application in compliance with the AEA and NEPA. The Sierra Club and FoE seek to intervene because operation of the two proposed nuclear reactors would endanger the health and safety and economic interests of its members and other people living within 50 miles of the proposed reactors. The costs and risks of the proposed reactors are unnecessary and wholly out of proportion to any possible benefit; and the energy services to be provided by the project can be supplied by alternative means that are cheaper and pose less environmental impact.

In contentions 3B, 3E, 3F and 3G Sierra and FoE challenge the adequacy of SCE&G's submissions in its Environmental Report ("ER") respecting the costs of the proposed plant and its energy output; and the availability of cost effective, feasible, alternatives including energy efficiency or demand side management measures.

In support of this contention Sierra and FoE cite extensively to the deficient elements of the ER, to extrinsic facts from authoritative sources regarding the issues involving the Applicant and its South Carolina territory and regarding its proposed plant and alternatives. In addition, this contention is extensively supported by the expert opinion evidence of former New Hampshire Public Utilities Commissioner and electric utility expert Nancy Brockway. Brockway Declaration, *passim*.

By its rejection of this contention the Licensing Board would disavow the Commission's promise to fully consider the need for the proposed project as well as available alternatives posing less environmental cost as required by NEPA.

In this combined operating licensing proceeding, the cost and benefits of the proposed Summer reactors as compared to the costs and benefits of alternatives are to be addressed in accordance with the Commission's representations. *Environmental Law and Policy Center v. NRC*, 470 F.3d 676 (7th Cir. 2006). In the *Environmental Law and Policy Center* case, the Court held that "NEPA requires an agency to 'exercise a degree of skepticism in dealing with self-serving statements from a prime beneficiary of the project' and to look at the general goal of the project rather than only those alternatives by which a particular applicant can reach its own specific goals." *Id., citing Simmons v. U.S. Army Corps of Eng'rs*, 120 F.3d 664 (7th Cir. 1997). The Court held that the NRC properly approved the license there, but only after a comprehensive and independent review of a full-fledged study of alternatives in the ER. The Court, also, excused the NRC's refusal to consider energy efficiency alternatives to the plant at issue on the narrow grounds that the utility there was a wholesale supplier which was 'in no position to implement such measures" Slip Op at 13. Such is not the case here.

Here, contrary to this Commission's commitment, the Licensing Board continues to so narrowly define the proposed action to be considered, by adopting the applicant's stated purpose, as to eliminate the consideration of any alternatives. Order, LBP-10-06, Slip Op. p. 8.

By uncritically accepting the applicant's narrow definition of the project as providing "2000 megawatts of base-load electrical generation" the Board eliminates any fair consideration of the need for that capacity or the alternative means of providing

for South Carolina's energy future. By deferring to the Applicant's narrow definition of the proposed project as its commercial prerogative, the Licensing Board ignores the extensive commitment of public resources in the form of federal loan guarantees potentially supporting this nuclear project. Brockway Declaration at 14; SCANA Q4 Earnings Call Transcript, February 12, 2009, p. 2. Http://sekingalpha.com/article/120292-scana-q4-2008-earnings-call-transcript?page=1

This rejection of a fair consideration of alternatives to the chosen nuclear project by the Licensing Board would have the Commission reverse its decision of September 23, 2003 , in which the Commission denied the petition of the Nuclear Energy Institute (NEI) to eliminate consideration of the need for the proposed plant and alternatives as part of the review under the National Environmental Policy Act of 1969 (NEPA). 68 Fed. Reg. 55905. Rejection of these detailed and well-founded contentions would amount to a retreat from that Commission decision. In its September 23, 2003 ruling, 68 FR 59905, the Commission rejected NEI's request that the NRC amend its regulations "to remove requirements that applicants and licensees analyze, and the NRC evaluate, alternative energy sources and the need for power with respect to the siting, construction, and operation of nuclear power plants." In short, the Commission stated that it was denying the petition because

> the NRC must continue to consider alternative energy sources and the need for power to fulfill its responsibilities under the National Environmental Policy Act of 1969, as amended (NEPA).[1]

[1] 68 FR 59905.

Petitioners argue that the Applicant's Environmental Report (ER) fails generally to adequately discuss the impacts of the proposed action and alternatives in proportion to their significance. The Licensing Boards' decision would make a hollow mockery of the NRC's assurances that alternatives to a proposed costly new nuclear plant would receive a fair consideration in the licensing process as required by NEPA.

Former New Hampshire Public Utilities Commissioner and energy resources expert consultant Nancy Brockway has over twenty-five (25) years experience in the regulation of electric utilities including the regulatory review and response to utility resource planning proposals and the regulatory response to nuclear power plant cost recovery issues. Ms. Brockway has extensive experience in 'demand side management' or energy efficiency programs applicable to electric utilities as well as the review of the forecast need for generating capacity and the alternatives for meeting energy supply needs. She has provided expert testimony in more than thirty (30) utility regulatory proceedings, including, most recently, before the South Carolina Public Service Commission on the need for power, costs, and alternatives to the proposed V.C Summer Nuclear Station, Units 2 and 3, which is the subject of this proceeding. Ms. Brockway's qualifications to offer expert opinion evidence addressing the issues raised by this contention are extensive. Brockway Declaration at ¶ 6.

Sierra and FOE also assert that the Applicant failed to assess its demand side management (DSM) alternatives in a balanced, systematic and comprehensive manner. [Brockway Declaration at 8]:

> SCE&G …dismisses the possibility of alternatives to building two new nuclear generating plants, and undervalues the alternatives. In particular, SCE&G does not take demand side management … seriously, and overstates the risks associated with such resources, even as it understates the uncertainties associated with its chosen resource plan. As a result, SCE&G's resource plan is flawed and does not support its conclusion that Summer Units 2 and 3 represent the least cost and most reliable plan to provide resources for its customers…With respect to demand side management, SCE&G utterly dismisses the potential for DSM to produce resource benefits for customers and reduce the need or push off the timing of desirable generation additions….In its Environmental Report, SCE&G's discussion of demand side management …names what it calls conservation programs and load management programs, whereas the conservation programs are not well-designed and will not achieve significant efficiency as currently designed (regardless of budget).
>
> [Brockway Declaration at ¶¶ 34-36].

The fact that the ER has pages of discussion on a topic does not rebut a claim that the Application dismisses a particular resource. Similarly, the fact that the Applicant has reviewed and discarded various alternatives does not rebut an assertion that the Applicant has not considered those alternatives in a "balanced, systematic, and comprehensive manner."

The problem is that SCE&G found every reason to be skeptical of the potential of DSM, and made no real effort to determine how much customer need could be met with DSM. As a result, SCE&G seriously underestimated its incremental DSM potential, and unreasonably overestimated the amount of future resources that would need to be met by generation.

Independent analysis confirms the significant potential for energy efficiency gains in SCE&G's South Carolina service area.

> The South Carolina Climate, Energy and Commerce Committee (CECAC), established by the Governor of South Carolina, and comprising representatives of all key energy-using and energy-producing sectors in the state, agreed in a report issued in July 2008 that 5% of the state's energy needs could be met with energy efficiency resources by 2020, at a savings of almost $600 million, net present value. . . . .
>
> The CECAC produced a supply curve of low- and no-carbon resources in South Carolina, which shows that energy efficiency could eliminate up to 8 percent of net GHG in 2020, at a net cost ***savings*** relative to the generation alternative.

Brockway Declaration at ¶¶ 46, 49. See, e.g., the discussion of energy efficiency recommendations in Appendix G, available at

http://www.scclimatechange.us/ewebeditpro/items/O60F19057.pdf;

As the Brockway Declaration states, no single alternative should be expected or required to meet all the Applicant's needs by itself:

> …all possible alternatives must be identified, and alternate scenarios, consisting of various mixes of resources and timing of resources, must be modeled to examine their net present value, given a variety of input assumptions. [2]

The Licensing Board places undue weight on the Applicant's claim that it needs "baseload generation" and only baseload generation. The

[2] Brockway Declaration at ¶ 56.

Board fails to acknowledge Sierra and FOE's claims and supporting expert opinion evidence that the Applicant has failed in its ER to determine its reasonably likely load requirements net of these modular, alternative options, before making the commitment of billions of dollars to the one nuclear option.

In its Response SCE&G dismisses the offshore wind alternative described in the Brockway Declaration at ¶¶ 61-67, citing among other things its ER discussion of problems with *onshore* wind power.[3] Staff recites the justifications given in the ER for rejecting the wind option, without explaining why the recitation does not show the presence of a material factual dispute.[4] Similarly, SCE&G and NRC Staff write off Petitioners' arguments that solar power should be considered as an alternative to the building of the two units, reciting the reasons the Applicant rejected the option as if they disposed of the contention. The Licensing Board does not even pause to consider these disputed claims; but, again, summarily dismisses consideration of renewable alternative power sources as irrelevant to the artificially narrow project purpose of providing base-load power. Order, LBP-09-02, Slip Op. p. 24.

More importantly, the NRC Staff, SCE&G and the Licensing Board take the position that the sole purpose for the units is limited to supplying baseload power, and that neither wind nor solar are baseload forms of

[3] SCE&G Response to Petition, at p. 64, citing ER, at 9.2-8.

[4] Staff Response to Petition, at pp. 64-65.

power.[5] *Ipso facto,* they argue, Applicant did not need to include them in its modeling, according to SCE&G and NRC Staff. They rely on the view that the utility's determination of its needs should be accorded great weight,[6] and that the Applicant has determined that it needs "baseload" power. The Commission visited the topic of the owner's preferences in its decision denying the NEI application for elimination of the need portion of the NEPA review. The Commission did affirm that "ordinarily" it will give substantial weight to "a properly-supported statement of purpose and need by an applicant and/or sponsor of a proposed project in determining the scope of alternatives to be considered by the NRC."[7] However, the Commission cautioned that an applicant "will not be permitted to narrow the objective of its action artificially and thereby circumvent the requirement that relevant alternatives be considered,'' citing *City of New York* v. *Department of Transportation,* 715 F.2d 732, 743 (1983).[8] As the Commission also reaffirmed:

> alternatives to the construction of a nuclear power plant must be considered before the environmental impacts of construction are realized.[9]

[5] See, e.g., SCE&G Response to Petition, at p 66; Staff Response to Petition at p.70 .

[6] See, e.g., SCE&G Response to Petition, at p. 50, 2003 Rulemaking Petition Denial, 68 Fed. Reg. at 55,909, citing (*quoting Hydro Res., Inc.*, CLI-01-4, 53 NRC 31, 55 (2001) (*citing Citizens Against Burlington*, 938 F.2d at 197, *cert. denied*, 502 U.S. 994 (1991)). See also Staff Response to Petition at p. 66.

[7] Ruling Denying Rulemaking Petition, 68 Fed. Reg. 55905 (September 23, 2008), at 55909.

[8] *Id., at* 55910 – 55911.

[9] *Id, at 5510.*

Contrary to the Licensing Board's conclusions, this is not one of those situations that may exist, in which the Applicant will "be able to establish, consistent with NEPA and current judicial precedents, a narrow statement of purpose and need for the project sufficient to justify excluding from the EIS a consideration of non-nuclear alternative energy sources."[10] Rather, eliminating all non-baseload alternatives from consideration arbitrarily narrows SCE&G's objective in building the two units at issue in this case.

Baseload generation is a form of generation that runs nearly continuously, with a very high load factor. As the Applicant's ER describes:

> Baseload capacity is… the most expensive to build, takes the most time to start up and shut down, and is the least expensive to operate for extended periods of time. Peaking units are … the least expensive to build, can be quickly started or stopped, and are the most expensive to operate for extended periods. Characteristics of intermediate capacity fall between the other two.[11]

Also, DSM resources can meet peak load needs and energy needs, or both, depending on the DSM resource in question. Brockway Declaration at ¶ 56.

While neither the ER nor the Licensing Board discuss the underlying question of "why baseload only?" in any depth, one can see from the Applicant's definitions of the forms of generation that the primary driver of the choice of capacity type is economics. It is unreasonable to decide "ex ante" that two large baseload units are needed. The Applicant itself recognized that baseload was not its only objective in new resources, since it used various forms of scenario modeling to determine what mix of generation

[10] *Id.*

[11] ER at 8.1-5.

forms, sizes, and on-line dates to choose.[12] However, it did not properly reflect the alternatives to its proposed central station baseload generation plant.

The Applicant itself (somewhat stingily) expressed a view in agreement with Petitioners in its ER, to the effect that even though individual alternatives might not be sufficient on their own to provide the capacity that the two proposed units would provide, "…it is conceivable that a mix of alternatives might be cost effective…"[13]

The Licensing Board selectively rejects the Brockway opinion evidence by erecting and then attacking isolated strawman examples offered by Ms. Brockway as if such isolated examples substituted for her real substantive opinions. Citing only one example of energy efficiency savings identified by Ms. Brockway, the Licensing Board dismissively concludes that the "maximum" DSM savings suggested by Petitioners is "small when compared to the overall capacity of the proposed project" and , thus, "this small increase in DSM cannot alter the decision the NRC must make regarding issuance, conditioning, or rejection of the license." LBP-10-06, at p. 27. In fact, Ms. Brockway opines that energy usage could be reduced by "25% on average through cost-effective efficiency" in the United States generally, without exception in SCE&G's South Carolina service territory. Brockway Declaration at p. 9.

Here, Joint Petitioners' expert has provided detailed explanation of her professional reasoning to support her critique of SCE&G's devaluation of the alternative of energy efficiency and demand side management to displace the proposed new nuclear generation. Her qualifications are ample and her reasoning is fully adequate to

[12] E.R. at 9.2.2.12.

[13] E.R. at 9.2.2.12.

support admission of these contentions for further development and hearing. As another Licensing Board concluded in reaching the appropriate conclusion to admit a contention where well-supported by expert opinion:

> The Board does not agree that such statements are "bald" or "conclusory." As we stated above, NRC regulations do not permit admission of a contention when petitioners offer no documentary or expert support for their positions. See Section III.D.3. But NEC has done considerably more here -- Dr. Hopenfeld has submitted a sworn statement describing his professional reasoning and conclusions, and his qualifications to speak as an expert on this subject matter have not been challenged. As we have already stated, NEC is not required to prove its contention at this point or to provide all the evidence for its contention that may be required later in the proceeding. See Section III.A.4. Rather, it is required only to provide sufficient information that "the Applicants are sufficiently put on notice so that they [**139] will know at least generally what they will have to defend against or oppose, and that there has been sufficient foundation assigned to warrant further exploration of [the] contention." *Kansas City Gas & Electric Co. (Wolf Creek Generating Station, Unit 1), LBP-84-1, 19 NRC 29, 34 (1984).* We find that NEC has met this requirement. n70

Entergy Nuclear Vermont Yankee, LLC (Vermont Yankee Nuclear Power Station),

LBP-06-20, 64 N.R.C. 131 (2006).

Finally, the failure to consider a more modular approach to adding resources renders the ER inadequate to capture the relevant considerations in choosing a resource acquisition objective. To adequately assess such a modular approach, the Applicant should construct various scenarios for modeling that reflect (a) a post-financial-crisis forecast of energy and peak requirements, (b) all reasonable generation

options even if not baseload, c) the impacts on ability to obtain adequate electricity given rate impacts of (d) an updated and more realistic estimate of the costs of construction of the two AP1000s. A key benefit of the modular approach, which should be reflected in such an assessment, is the opportunity a modular approach would provide the Applicant to avert making a commitment to two large central station plants of an uncertain design whose costs are at least equal to the utility's net worth.

With respect to the human environment, NRC Staff dismisses the idea that inability to pay for adequate electricity would constitute an adverse impact on the human environment.[14] Staff and SCE&G argue that there is no environmentally preferable alternative to the project, but that argument assumes the very issues to be decided in the NEPA review.

Considering only the Applicant's underestimated cost for the plants, the Applicant expects rates to increase 40% as a result of construction. *A fortiori* rates will be considerably higher as the estimate is adjusted to a higher, more reasonable level. Commissioner Brockway, with over 25 years experience in state utility regulation, including many years representing consumers (and particularly low-income and other vulnerable consumers) on rate issues before state regulators, opined that even a 40% rate increase would constitute rate shock, and produce hardship for many, "especially those of lower incomes and marginal profitability."[15]

[14] E.g., Staff Response to Petition, at p. 79.

[15] Petition at ¶ 44. Note Brockway's reference to "profitability," which brings into the analysis the question of the ability of businesses to stay open and continue offering employment, at least at anticipated levels, in South Carolina if such high rate increases are incurred.

It is suggested that a cost-benefit analysis of the project is not required where the Applicant's alternatives analysis indicates that there is no environmentally preferable alternative. There is no dispute that building any 1,117 mW central station generation units will have environmental impacts that must be considered. In addition to impacts on the natural environment, and as discussed above, the shear cost of such investments, as reflected in rates, will produce adverse impacts on the human environment.

The alternatives dismissed by the Applicant have low environmental footprints. DSM actually reduces energy use, and thus generation emissions at a small fraction of the unit cost of the output of new nuclear generation as asserted by Ms. Brockway beyond any serious dispute. The load management component of DSM also helps to avert the need for construction and its impacts. Wind, especially the off-shore wind cited by Petitioners, produces no emissions. Solar power produces no emissions.

Thus, an alternative, modular plan (reflecting an updated demand forecast, reasonable DSM assumptions, and inclusion of wind, solar and purchased power opportunities) may emerge as an environmentally preferable alternative upon the conduct of an effective environmental review. The present ER fails to adequately assess these subjects in the required systematic, thorough or comprehensive manner.

The Licensing Board perversely purported to judge Joint Petitioners' contentions at this pleading stage based on an evidentiary submission of December 2008; absent any opportunity for discovery and blind to the evolving effectiveness of energy efficiency alternatives to new nuclear generation. Time marches on and developments reinforce

the merit of alternatives to this costly project. Things have only gotten worse for the Company's nuclear gamble. As SCE&G itself asserted in its Brief to the South Carolina Supreme Court in an appeal of the state commission approval of the V.C. Summer units, Brief of Respondent SCE&G, p. 11, fn 5, this tribunal may properly take notice of factual information found on the internet, citing, O' Toole v. Northrup Grumman, 499 F.3d 1218 (10th Cir. 2007) ("It is not uncommon for courts to take judicial notice of factual information found on the world wide web." 499 F.3d 1218, 1225).

Neighboring Duke Energy Carolinas filed its new Integrated Resource Plan (IRP) with the SC Public Service Commission September 1, 2009, in which it announced a further three (3) year deferral of the potential commercial operations date for its proposed new nuclear project until 2021- for which it has not yet sought Commission Base Load Review Act approval. http://dms.psc.sc.gov/pdf/matters/775CFEDF-9D63-3E3F-3EB795E57E0004F3.pdf , last visited 10/23/09.

In June 2009, Moody's Investors Service published another critical comment on investment in proposed new nuclear generation plans, "New Nuclear Generation: Ratings Pressure Increasing," in which they stated:

> We view nuclear generation plans as a "bet the farm" endeavor for most companies, due to the size of the investment and length of time needed to build a nuclear power facility.

http://www.scribd.com/doc/18057014/Moodys-New-Nuclear-Generation-June-2009, last visited 10/24/09.

The new Chairman of the Federal Energy Regulatory Commission, Jon Wellinghoff, announced that no new nuclear or coal plants may ever be needed in the United States and that increased energy efficiency and renewables like wind and solar will provide enough energy to meet future needs. Energy Regulatory Chief Says New Coal, Nuclear Plants May Be Unnecessary, New York Times, April 22, 2009, http://www.nytimes.com/gwire/2009/04/22/22greenwire-no-need-to-build-new-us-coal-or-nuclear-plants-10630.html, last visited 10/19/09.

On October 15, 2009, the US Nuclear Regulatory Commission notified Westinghouse- the vendor for the Company's proposed AP 1000 nuclear plant- that the AP 1000's containment building must be redesigned in order to meet NRC safety standards to withstand design basis accidents. The impact of this redesign on the NRC schedule for needed approval of the AP 1000 design certification and on individual plant licensing is yet to be determined. Http://www.nrc.gov/reading-rm/doc-collections/news/2009/09-173.html. Last visited 10/24/09.

On February 17, 2009, the federal stimulus legislation, the "American Recovery and Reinvestment Act of 2009," was signed into law by President Obama, which provided $16.8 billion in funding for energy efficiency and renewal energy programs and initiatives, including weatherization assistance, energy efficiency and conservation block grants, state energy program assistance and funding for such renewable energy sources as solar, wind and biomass generation. http://www1.eere.energy.gov/recovery/. Last visited 10/23/09.

On September 25, 2009, the SC Public Service Commission deferred until January 28, 2010, hearings to consider Respondent SCE&G's proposed new energy efficiency and Demand Side Management (DSM) programs mandated by the Commission in Order 2009-104(A). Notice of Rescheduled Hearing, 9/25/09. http://dms.psc.sc.gov/pdf/matters/F2445D1A-F407-0DCE-837059C8358132E0.pdf, last visited 10/24/09. That hearing has since been again deferred until April 1, 2010. http://dms.psc.sc.gov/pdf/matters/7125072D-CAF7-254B-016C4878A0E61B84.pdf, last visited 3/26/10.

Lastly, in its most recent Integrated Resource Plan (IRP) filed February 26, 2010, with the SC Public Service Commission, SCE&G finally recognizes the potential for significant demand reductions from effective energy conservation and efficiency measures on a scale which can actually displace generation capacity. http://dms.psc.sc.gov/pdf/matters/2F3BD0A2-B169-4B6C-5E74318C6FA837DA.pdf, last visited 3/22/10. Noting the attractiveness of the energy efficiency alternative in the face of the rising cost of electricity, SCE&G for the first time recognizes the potential for deep energy efficiency demand reductions: "(E)lectric (and gas) customers throughout the country have implemented conservation measures to reduce their energy consumption and associated bills largely in response to economic conditions but also in response to a national consciousness of the issue." 2010 IRP at p. 6. SCE&G describes its proposed novel energy efficiency and demand side management programs mandated by the SC Public Service Commission. 2010 IRP at pp. 15-17. For the first time, SCE&G presents an alternative "Low Load" demand and resource forecast, premised on aggressive and effective energy efficiency and demand side

management programs at the national and company levels actually displacing some 730MW of generating capacity. 2010 IRP p.33.

These developments on the cost of this proposed project and the attractiveness of the energy efficiency and demand side management alternatives reinforce the need to effectively address such considerations in a proper environmental assessment as urged by Joint Petitioners.

Until the costs and risks of the proposed Summer reactors and the alternatives are fairly and completely presented, the NRC staff will not be able to complete its EIS. The Joint Petitioners' contentions should be admitted.

CONCLUSION

The Joint Petitioners Sierra Club and Friends of the Earth request that the Order on Remand of the Licensing Board be overturned and their petition to intervene and request for hearing be granted and their contentions be admitted for full hearing.

Respectfully submitted this 26th day of March 2010.

Signed (electronically) by Robert Guild
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CERTIFICATE OF SERVICE

I hereby certify that copies of this BRIEF ON APPEAL OF SIERRA CLUB AND FRIENDS OF THE EARTH was served on the following via email and via the EIE system:

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26th day of March 2010..

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