UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before the Licensing Board:

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

In the Matter of	)	**Docket No. 52-011-ESP**
Southern Nuclear Operating Company	)	**ASLBP No. 07-850-01-ESP-BD01**
(Early Site Permit for Vogtle ESP Site)	)	**October 17, 2007**

SOUTHERN NUCLEAR OPERATING COMPANY'S MOTION FOR SUMMARY DISPOSITION OF INTERVENORS' ENVIRONMENTAL CONTENTION 1.2 (COOLING SYSTEM IMPACTS ON AQUATIC RESOURCES)

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I. INTRODUCTION

In accordance with 10 C.F.R. § 2.1205 and the May 7, 2007 Memorandum and Order (Prehearing Conference and Initial Scheduling Order) of the Atomic Safety and Licensing Board ("ASLB" or "Board"), Southern Nuclear Operating Company ("SNC") moves for summary disposition of Intervenors' Environmental Contention 1.2, ("EC 1.2"). SNC moves for summary disposition of EC 1.2 on the grounds that no genuine issue as to any material fact exists, and

SNC is therefore entitled to a decision as a matter of law. 10 C.F.R. § 2.1205; 10 C.F.R. § 2.710(d)(2). This motion is supported by NRC Staff's Draft Environmental Impact Statement ("DEIS") and its supporting documents and by "Southern Nuclear Operating Company's Statement of Undisputed Material Facts in Support of Applicant's Motion for Summary Disposition of Intervenors' Environmental Contention 1.2, ("Facts"). The undersigned certifies that he has contacted Counsel for the NRC Staff and the Intervenors in an effort to resolve the issues raised in this motion. The NRC Staff has not taken a position on the Motion as of the deadline for submission of the Motion, and Intervenors indicate they intend to oppose the motion.

II. BACKGROUND

On August 14, 2006, SNC filed its application for an early site permit ("ESP") requesting approval for siting one or more new nuclear reactors at the existing Vogtle site located in eastern Georgia (near Waynesboro, Georgia). The application, which was accepted on September 19, 2006, included an Environmental Report ("ER"), and in November 2006, SNC submitted a revised ER. On December 11, 2006, Intervenors filed a request for hearing and petition to intervene, seeking to admit seven contentions and subsequently designated all of those as environmental contentions. On February 13, 2007, the Board conducted a pre-hearing conference regarding standing of the Intervenors and admissibility of their contentions.

On March 12, 2007, the Board issued its Ruling on Standing and Contentions, finding that the Intervenors had standing and had submitted two admissible contentions, including EC 1.2. After the Board admitted EC 1.2, the NRC Staff issued and SNC responded to certain Requests for Additional Information ("RAIs"). In addition, SNC further revised its ER to supplement its earlier analysis. On September 10, 2007, as part of its obligations under the

National Environmental Policy Act ("NEPA"), the NRC Staff released the DEIS, which incorporates data from the original and subsequently revised ER, SNC's responses to the RAIs and information the Staff compiled from other sources. Draft NUREG-1872.

III. LEGAL STANDARDS FOR SUMMARY DISPOSITION

In its May 7, 2007 Memorandum and Order, the Board directed that any motions for summary disposition proffered following the publication of the DEIS should be filed "within seven days after either (1) the close of the period for amending admitted contentions if no amendments regarding a contention are filed; or (2) the parties complete their mandatory disclosures regarding any admitted new/late-filed contention or amended contention following issuance of the draft EIS." Because no amendments to EC 1.2 were filed by the October 10, 2007 deadline established by the Board's May 7, 2007 Memorandum and Order, this motion is timely filed.

This proceeding is governed by the informal adjudicatory procedures prescribed in Subpart L of 10 C.F.R. Part 2. Subpart L contains certain instructions for filing motions for summary disposition, but directs the Board to apply the standards of Subpart G, which are set forth in Section 2.710(d)(2). *See* 10 C.F.R. § 2.1205(c), A motion for summary disposition must be granted "if the filings in the proceeding …, together with the statements of the parties and the affidavits, if any, show that there is no genuine issue as to any material fact and that the moving party is entitled to a decision as a matter of law." 10 C.F.R. § 2.710(d)(2); *See Exelon Generation Co., LLC* (Early Site Permit for Clinton ESP Site), LBP-05-19, 62 N.R.C. 134, 179-80 (2005).

To be considered a genuine issue of material fact, "the factual record, considered in its entirety, must be enough in doubt so that there is a reason to hold a hearing to resolve the issue."

Cleveland Elec. Illuminating Co. (Perry Nuclear Power Plant, Units 1 and 2), LBP-83-46, 18 N.R.C. 218, 223 (1983) (emphasis added). Summary disposition "is a useful tool for resolving … contentions that … are shown by undisputed facts to have nothing to commend them." *Private Fuel Storage, L.L.C.*, (Independent Spent Fuel Storage Installation), LBP-01-39, 54 N.R.C. 497, 509 (2001). If the moving party makes a proper showing, and the opposing party does not show that a genuine issue of material fact exists, then the Licensing Board may summarily dispose of the contention on the basis of the pleadings. *N. States Power Co.* (Prairie Island Nuclear Generating Plant, Units 1 and 2), CLI-73-12, 6 A.E.C. 241, 242 (1973), *aff'd sub. nom. BPI v. AEC*, 502 F.2d 424 (D.C. Cir. 1974).

In this instance, there are no material facts concerning EC 1.2 in dispute, and SNC is entitled to a decision as a matter of law.

IV. ADMITTED CONTENTION AND ITS SCOPE

As admitted, EC 1.2 asserts that "[t]he ER fails to identify and consider direct, indirect, and cumulative impingement/entrainment and chemical and thermal effluent discharge impacts of the proposed cooling system intake and discharge structures on aquatic resources." In admitting EC 1.2, the Board found that Intervenors' submission of Dr. Shawn Paul Young's Declaration provided "sufficient factual support for the admission of this contention." March 12, 2007 Memorandum and Order (Ruling on Standing and Contentions) at 17.

As an initial matter, the Board may consider environmental contentions made against an applicant's ER as challenges to an agency's subsequent DEIS. *See Louisiana Energy Services* (Claiborne Enrichment Center), CLI-98-3, 47 N.R.C. 77, 84 (1998). However, absent any late-filed or amended contention, the scope of the contention remains the same, i.e., that the superseding DEIS fails to identify and consider impacts of the cooling system on aquatic

resources. *See id.*; *but cf. In the Matter of Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-01-23, 54 N.R.C. 163 (2001) (finding that an Intervenor must file a new or amended contention outlining its concerns over a DEIS analysis when original contention alleged omission of analysis in ER, DEIS includes such analysis, and Intervenor questions adequacy of that analysis).

As set out in Dr. Young's Declaration, Intervenors' specific factual assertions regarding EC 1.2 claim that the DEIS does not estimate the level of impact to aquatic organisms from the intake structures and cooling system discharges. Through the Young Declaration, the Intervenors assert that the ER [now read as DEIS] does not:

(i) include empirical data (i.e. field studies) on the existing units' impact on the level of mortality from impingement and entrainment; Young Decl. at ¶ A.9;

(ii) include data on mortality rates from seasonal field studies on impingement and entrainment at the existing structures; *id.* at ¶ A.10;

(iii) include mortality rate data from SRS field studies on entrainment; *id.* at ¶ A.11;

(iv) assume non-uniform drift community distribution in quantifying entrainment mortality rates; *id.* at ¶ A.12;

(v) calculate worst-case scenarios for quantifying entrainment or thermal impacts including the use of the 7Q10 flow to analyze entrainment; *id.* at ¶¶ A.12, A.13, A.18;

(vi) use maximum withdrawal rates from the existing units to analyze cumulative withdrawals; *id.* at ¶ A.14;

(vii) quantify or describe systematically the species composition and habitat in the vicinity of the intake and cooling structures, including shortnose sturgeon, American shad, and blueback herring; *id.* at ¶ A.16;

(viii) include field studies on the existing units' thermal plume; *id.* at ¶ B.17;

(ix) address potential impacts on the aquatic drift community from the cooling system thermal discharges or discuss the thermal impacts on larval and juvenile American shad; *id*. at ¶¶ B.17, B.21.[1] (The remaining paragraphs of the Young Declaration are background or summary/conclusion).

Intervenors also allege as a basis for EC 1.2, without any affidavit support, that the ER [read DEIS] does not:

(x) characterize whether the discharge of chemical constituents will occur in harmful amounts; Petition at 11-12; or

(xi) evaluate the cumulative impacts of acute or chronic toxicity of the existing discharge; *id.* at 13.

Each of the Intervenors' purported factual support or bases for EC 1.2 alleges the omission of certain information, studies or analyses that Intervenors contend are necessary to a consideration of the environmental impacts of the proposed structures**.** *In every instance, however, either (i) the alleged omission is not a valid basis for a challenge to the NEPA analysis contained in the DEIS, and therefore any dispute regarding Intervenors' factual assertion is not material to the resolution of the issue, or (ii) the alleged omitted information is, in fact, included or referenced in the DEIS.*

[1] Many of these listed items are better identified as allegations regarding the assessment of the baseline, but the Board has suggested they may be considered as part of EC 1.2.

Accordingly, in light of the issuance of the DEIS, there are no facts in dispute which warrant holding a hearing on this contention. To that end, each of these itemized assertions supporting EC 1.2 is taken in turn below; and EC 1.2 should be dismissed.

V. SNC IS ENTITLED TO SUMMARY DISPOSITION OF EC 1.2

The NRC Staff's DEIS is the result of a thorough review and fully identifies and considers the impacts of the proposed cooling system on aquatic impacts. The NRC Staff's conclusions in the DEIS are "based on (1) the application, including the ER, submitted by Southern; (2) consultation with Federal, State, Tribal, and local agencies; (3) the staff[']s independent review; (4) the staff[']s consideration of comments related to the environmental review that were received during the public scoping process; and (5) the assessments summarized in [the DEIS]." DEIS at iii. In the DEIS, the NRC Staff analyzes the aquatic impacts of the cooling system from a comprehensive perspective, including impingement and entrainment, thermal impacts and chemical impacts. DEIS, §§ 5.4.2.2 – 5.4.2.4. As outlined below, and in direct contradiction of EC 1.2, the DEIS fully satisfies NRC's NEPA obligations and addresses the impacts alleged to have been lacking in the ER.

A. The DEIS Discussion of the Impacts of the Proposed Cooling System on Aquatic Resources Fully Satisfies NEPA as a Matter of Law

Through the Young Declaration, and at oral argument at the February 13, 2007 pre-hearing, Intervenors repeatedly complained that the ER for the Vogtle ESP application was insufficient because of an alleged lack of new "site specific field studies." *E.g.*, Statements of Mr. Sanders, Pre-Hearing Conference, *In the Matter of Southern Nuclear Operating Co.* (Early Site Permit for Vogtle ESP Site) Transcript at 25-26, 73. There is no dispute alleged regarding the data in the studies relied on by NRC in the DEIS (which include field studies); there is no dispute regarding the interpretation of those studies; there is no dispute regarding the site visits

conducted by NRC; there is no allegation that additional studies are available that should have been relied upon. In sum, this is a legal question ripe for resolution: does NEPA require new "site specific field studies" as a matter of law? As discussed below, it is plain that NEPA does not require NRC to perform the additional, original studies desired by Intervenors, particularly in light of the extensive analysis contained in the DEIS, and Intervenors' contention should be disposed of as a matter of law.

1. NRC's NEPA Obligation

NRC rule 10 C.F.R. § 51.10 implements section 102(2) of NEPA as it relates to NRC's domestic licensing and related regulatory authority. During the licensing process, NRC is required to prepare a DEIS. 10 C.F.R. § 51.70. The DEIS should include: (i) "to the extent sufficient information is available," consideration of major points of view concerning the environmental impacts of the proposed action and the alternatives; (ii) a list of all Federal permits, licenses, approvals, and other entitlements which must be obtained; and (iii) "a preliminary analysis that considers and weighs the environmental effects of the proposed action; the environmental impacts of the alternatives to the proposed action; and alternatives available for reducing or avoiding adverse environmental effects." 10 C.F.R. § 51.71.

Courts applying these NEPA requirements have also explained that NEPA analyses should provide "sufficient discussion of the relevant issues and opposing viewpoints to enable the decisionmaker to take a 'hard look' at environmental factors and to make a reasoned decision." *Louisiana Energy Services* (Claiborne Enrichment Center), CLI-98-3, 47 N.R.C. 77, 88 (1998) (internal citations omitted); *see also Baltimore Gas & Electric Co. v. Natural Resources Def. Council, Inc.*, 462 U.S. 87, 97-98 (1983). As the Supreme Court has held,

Congress authorized agencies to adopt an "appropriate method of conducting the hard look" the statute requires. *Id.* at 100-101.

It is well established that NEPA's command to agencies to take a "hard look" at the consequences of proposed major federal actions is subject to a "rule of reason." *See Department of Transportation v. Public Citizen*, 541 U.S. 752, 767-69 (2004). The Supreme Court has characterized the "rule of reason" as such:

> (A)n EIS is required to furnish only such information as appears to be reasonably necessary under the circumstances for evaluation of the project rather than to be so all-encompassing in scope that the task of preparing it would become either fruitless or well nigh impossible.

New York Natural Resources Def. Council, Inc. v. Kleppe, 429 U.S. 1307 (1976), *citing Natural Resources Def. Council v. Callaway*, 524 F.2d 79, 88 (2d Cir. 1975).

In applying the "rule of reason" standard, the Ninth Circuit has held that reliance on existing studies was sufficient and that an additional "comparison study" was not required under NEPA. *Stop H-3 Ass'n v. Dole*, 740 F.2d 1442, 1462-63 (9th Cir. 1984), *cert. denied sub nom. Yamasaki v. Stop H-3 Ass'n*, 471 U.S. 1108 (1985). In that case, the district court explained that a NEPA assessment

> does not have to take the form of a formal "study" and need not be all encompassing. The adequacy of the assessment is governed by a "rule of reason". Conclusions and recommendations may be based upon extrapolations from empirical data, as well as upon the data itself. Although the [older] study focused upon the area expected to feel the greatest effects from the implementation of the project, it also considered impacts outside of the study area. * * * Thus, although the study only dealt directly with a relatively small portion of the affected region, the discussion of … impacts was sufficient to meet the requirements of law.

Stop H-3 Ass'n v. Lewis, 538 F.Supp. 149, 165 (D. Hawaii 1982). Similarly, the District of New Mexico applied the "rule of reason" when asked to determine whether additional "empirical studies" and "field observations" were required by NEPA in the Department of the Interior's

review of mining leases. The court held that *existing data* was sufficient to support the conclusions reached in the EIS in that case. *See Nat'l. Indian Youth Council v. Andrus,* 501 F. Supp. 649, 669 (D. N.M. 1980).

In *State of Alaska v. Andru*s, the D.C. Circuit Court of Appeals considered plaintiff's argument that the "best available data" was simply not good enough and that the Department of Interior had to collect new data in order to comply with NEPA. 580 F.2d 465 (D.C. Cir. 1978). To the contrary, the court ruled that NEPA does not require that results from new studies be obtained as a matter of law in order to complete a NEPA analysis. *See id.* at 473. Likewise, the Northern District of Mississippi has specifically held that reliance on "the extensive data available from the body of scientific knowledge" was sufficient to comply with NEPA and that the Corps of Engineers was not required to "collect and analyze samples of flora and fauna or conduct other field explorations." *Envtl. Def. Fund v. Corps of Engineers,* 348 F. Supp. 916, 930 (N.D. Miss. 1972). This was particularly the case where plaintiffs had "failed to demonstrate that the available data and literature" was inadequate. *Id.*

Thus, a fundamental principle of NEPA is that an agency is not required to generate new data in order to satisfy its obligation to take a "hard look" at the environmental consequences of a proposed action. The NRC has held that the NRC Staff may rely on available technical information in arriving at conclusions in its EISs. In *In The Matter Of Duke Energy Corporation,* the intervenors challenged the analysis of probability of severe accidents and related mitigation measures in a generic and supplemental EIS for the renewal of nuclear plant licenses on the grounds that the analysis was not sufficiently detailed and unequivocal. (McGuire Nuclear Station, Units 1 and 2; Catawba Nuclear Station, Units 1 and 2) CLI- 03-17, 58 N.R.C. 419 (2003). The Commission rejected the challenge, holding that:

> [t]he Staff presented its analysis and conclusion based upon the "**available** technical information." **NEPA requires no more**. NRC adjudicatory hearings are not EIS editing sessions. Our busy boards do not sit to parse and fine-tune EISs. To litigate a NEPA claim, an **intervenor must allege, with adequate support**, that the NRC Staff has failed to take a "hard look" at significant environmental questions – i.e., **the Staff has unduly ignored or minimized pertinent environmental effects.** Here, given the extensive discussion of backup hydrogen control capability in the EISs, BREDL's suggestion that the NRC has not given the issue a "hard look" borders on the frivolous.

58 N.R.C. at 430-31 (emphases added).

The NRC's acceptance of the Staff's reliance on "available technical information" in *Duke Energy* is not novel. As discussed above, courts have routinely held that reliance on available data which reflects conditions at the site, even if the information originated from assessments of surrounding areas or from sources other than field studies conducted by the agency or applicant, constitutes an appropriate method for complying with NEPA. For example, in *Edwardsen v. U.S. Department of the Interior,* opponents of drilling in Alaska claimed, as do the intervenors here, that NEPA required the agency to collect site-specific data in order to analyze environmental impacts. 268 F.3d 781 (9th Cir. 2001). Instead, the agency used data from a nearby area as a "valid estimate" of site-specific information. The agency concluded that wind and water conditions in the areas under study reflected those in the exact spot of the proposed development. 268 F.3d at 785. The court, in holding that the agency took the "hard look" required by NEPA, reasoned:

> In using the data from Lease Sale 170, the [Interior Department] made a reasoned judgment that the data was relevant and yielded a useful analysis of the extent to which spilled oil would spread ….
>
> The fact that the FWS would have preferred a site-specific analysis is not sufficient, however, to require a conclusion that the MMS acted unreasonably or in contravention of NEPA by using the Lease Sale 170 data.

Id. at 786, *citing, Okanogan Highlands Alliance v. Williams,* 236 F.3d 468, 473 (9th Cir. 2000).

The recent decision in *Protect Pleasant Lake, LLC, v. Johnson*, makes plain that NEPA does not require federal agencies to conduct new studies in preparing an EIS. 2007 WL 2177327, slip op. (D. Ariz. 2007). In that case, plaintiffs argued that the Bureau of Reclamation's EIS was deficient because the Bureau had not conducted a new "carrying capacity study" of boat traffic. The court expressly rejected that contention and held as follows:

> It is not enough in Plaintiffs' view that the EA discusses numerous factors including the number of public boat ramps, park visitors, and daily watercraft counts, as well as an estimated increase in daily watercraft counts that would be attributable to the proposed marina. It seems the plaintiffs' position that if they operated the agency, they would have conducted a carrying capacity study in place of, or in addition to the information reviewed in the EA. Of course this fact alone does not establish arbitrary and capricious conduct on the part of [the Bureau …] **NEPA does not require an agency to carry out every conceivable study before an action may be taken**.
>
> * * *
>
> Although [the Bureau] did not conduct a carrying capacity study prior to the issuance of the [NEPA document], it has provided ample information from which an intelligent reader can discern the nature of the [impact].

Id. at *4, *5 (emphasis added). The Court concluded that the Bureau had taken the requisite "hard look" and satisfied NEPA. *Id.*

Similarly, in *Oregon National Desert Association v. Shuford,* an environmental organization challenged a resource management plan for a wilderness area, claiming that the government used outdated baseline data for the area in question, in violation of NEPA. 2007 WL 1695162, slip op. (D. Or. 2007). The district court held that "NEPA does not contain an explicit requirement that an agency [conduct an] inventory [of] wilderness characteristics on the affected land for each proposed action." *Id.* *4. Further, neither does NEPA establish a strict "quantum of information" for the needed data; the law requires only that the agency rely on accurate data. In particular, the court emphasized that:

> NEPA [does not] require that [an agency] perform a new wilderness inventory each time [it] develops [a plan], so long as [the agency] utilizes an adequate environmental baseline of resources in its NEPA analysis ….

2007 WL 1695162 *6. The court found that, using existing information, the agency properly exercised its judgment in using scientifically valid data and satisfied NEPA.

As this review of NEPA caselaw demonstrates, NRC's obligation under NEPA is to prepare an EIS that shows that the agency, subject to a "rule of reason" has taken a "hard look" at the environmental consequences of the proposed project. It is also clear that NEPA allows an agency to rely on existing studies from nearby areas, or models, or other accurate information which allows the Board to conclude that NRC has not "**unduly ignored or minimized pertinent environmental effects."** *See Duke Energy*, 58 N.R.C. at 430-31. NEPA does not require the NRC Staff to undertake new field studies in order to identify and consider the impacts of the proposed project.

2. The DEIS Identifies and Considers Aquatic Impacts and Satisfies the "Hard Look" Standard

The DEIS clearly addresses the facial assertion of EC 1.2, i.e., it "identif[ies] and consider[s] direct, indirect, and cumulative impingement/entrainment and chemical and thermal effluent discharge impacts of the proposed cooling system intake and discharge structures on aquatic resources." Section 5.4.2, entitled "Aquatic Impacts" contains eight pages of discussion of the potential impacts of the Vogtle units on aquatic ecosystems, including impingement and entrainment (pages 5-23 – 26), thermal impacts (pages 5-26 – 27), and chemical impacts (pages 5-27 – 29). Sections 2.7.2.1 and 2.7.2.2 contain 20 pages of discussion addressing the existing aquatic ecosystem, and Section 7.5 identifies and considers the cumulative impacts on the aquatic ecosystem. Facts ¶ 22.

The DEIS' analysis of impacts includes a review of the design and intake structure and recognizes that, like the structure at Units 1 and 2, the proposed closed-cycle cooling system for Units 3 and 4 can reduce water use by 96 to 98 percent, with corresponding reductions in impingement and entrainment. The DEIS recognizes that the design of the proposed intake structure will reduce through-screen velocities, which "greatly influences" impingement of aquatic organisms, to less than the EPA national standard, a velocity that is less than one half of that which can be endured by "species and life stages evaluated in various studies." (DEIS at 5-24). The DEIS acknowledges that the water volume to be withdrawn by the proposed structure, the placement of the intake canal perpendicular to the direction of the river flow, and the design of the canal weir, all reduce the capability of the intake structure to impinge and/or entrain organisms in the Savannah River. The analysis of the design of the proposed Units 3 and 4 intake structure, together with the sources of information discussed below, provide an adequate factual basis for the conclusion in the DEIS that impingement and entrainment impacts would be "minor." DEIS at 5-25.

With regard to impingement, specifically, the NRC Staff relied on its visit to Units 1 and 2 on March 8, 2007, which included an investigation of the intake and an examination of the traveling screens, the screen wash system, and the debris trough that collects and channels debris washed from the screens and the collection debris basket, and concluded that impacts from impingement for Units 3 and 4 would be minor. NRC Staff also relied on SNC's obligation under its Environmental Protection Plan for Units 1 and 2 to notify NRC of any unusual environmental events, including fish kills or impingement events and the fact that SNC had not, to date, submitted any such report. DEIS at 5-26.

With regard to entrainment, the Staff looked at the percentage of water withdrawn, the planned low through-screen intake velocity, the design of the closed-cycle cooling system, the typically high fecundity of most species inhabiting rivers, the existence of multiple spawning sites within the river basin and the high natural mortality rates of eggs and larvae. The Staff concluded that impacts to the fish of the Savannah River from entrainment would be minor. DEIS at 5-25.

The Staff reviewed the potential thermal impacts to the aquatic ecosystem of the Savannah River and concluded that these impacts would also be minor. DEIS at 5-26 – 5-27. The Staff, assuming conservative river conditions, (e.g., minimum river temperatures, maximum discharge temperatures), calculated the width of the thermal plume and determined that "the size of the thermal plume from the proposed effluent discharge is small in comparison to the width of the Savannah River at the VEGP site." DEIS at 5-26. The DEIS acknowledges that no adverse impacts to aquatic organisms has been observed from the chemicals used in the cooling system for Units 1 and 2 and concludes that the impacts from chemical discharges from Units 3 and 4 would be minimal. DEIS at 5-27 – 5-29.

One of Intervenors' principle criticisms directed against the ER [now DEIS], reflected by items (i), (ii) and (viii) in the list above, is an alleged lack of current field study data at the exact site of the proposed new Vogtle units' cooling intake and discharge and at the existing units' intake and discharge. Petition at 11-13; Young Decl. at ¶¶ A.9, A.10, and B.17. Rev. 2 of the ER, SNC's responses to RAIs, and the DEIS all incorporate and discuss substantial data collected by a variety of agencies regarding the environmental impacts of the proposed units and the DEIS includes all findings required by NRC's regulation implementing NEPA on the basis of that data. The DEIS shows that the NRC Staff reviewed academic data dating back to 1951 and

made observations at the existing units within the past seven months. In fact, many of the studies and resources relied on and referenced in the DEIS are themselves field studies performed on the Savannah River near the Vogtle site, including the *ANSP* studies identified in section 2.12 and the *Paller* and *SRS* studies identified in section 5.13. Facts ¶ 23.

As explored above, NEPA and the cases interpreting the statute require that the data in the record reliably portray the "before" and "after" in the affected area. They do not require site-further specific field studies as such. Rather, they allow agencies to utilize existing, available, accurate information to efficiently fulfill their NEPA obligations. It is clear, therefore, that while NEPA requires the NRC to take a "hard look" at the environmental consequences of the proposed action, a "hard look" is not equivalent to a requirement to conduct new, original studies of Intervenors' choosing. NRC Staff's conclusions are based on a thorough review of the existing, available, and accurate information and studies (including field data) and therefore satisfy the "hard look" requirement. Moreover, Intervenors have not disputed the accuracy or completeness of the existing, available data. Intervenors' claim that the NRC Staff must conduct new field studies to satisfy its NEPA obligations is not supported by law and does not provide an adequate basis for EC 1.2.[2] Accordingly, regardless of whether any of the extensive supporting data relied on by NRC Staff are considered "site-specific field studies," NRC clearly has not **"***unduly ignored or minimized pertinent environmental effects***"** and has instead used reliable and

[2] Intervenors' complaint that the analysis in the DEIS assumes a uniform drift community falls for similar reasons. The assertion, reflected in item (iv) above, that the DEIS assumes uniformity in the drift community is not in dispute – it is directly stated in the DEIS itself. Thus, there is no material factual dispute, and the matter is proper for resolution as a matter of law. The DEIS goes on to explain that the assumption of uniformity is *conservative* (for the very reasons identified in the Young Declaration) and is expressly intended to bound the analysis. *See* DEIS at 5-25; Facts ¶ 24. This is entirely proper. *See, e.g., In the Matters of All Chemical Isotope Enrichment, Inc.* (AlChemIE Facility-1 CPDF) *and All Chemical Isotope Enrichment, Inc.* (AlChemIE Facility-2 Oliver Springs), LBP-89-05, 29 N.R.C. 99, 119 (1989).

adequate data for this reach of the Savannah River[3], and this is sufficient to enable NRC to satisfy its NEPA obligations.

Thus, items (i), (ii), (iv) and (viii) listed above as excerpts above from the Young Declaration do not raise material issues of fact such "that there is a reason to hold a hearing to resolve the issue." *Cleveland Elec. Illuminating Co.* (Perry Nuclear Power Plant, Units 1 and 2), LBP-83-46, 18 N.R.C. 218, 223 (1983).

B. The DEIS Discussion of the Impacts of the Proposed Cooling System on Aquatic Resources Fully Addresses Intervenors' Alleged Deficiencies and Renders EC 1.2 Moot

As discussed above, Intervenors' claim that the ER, and now the superseding DEIS, does not include various field studies, is immaterial as a matter of law. NEPA does not require an agency to create the types of studies Intervenors seek in order to satisfy its "hard look" requirement, and no hearing is necessary to resolve any material factual dispute on that subject. As to the remaining assertions set out in Dr. Young's Declaration, the DEIS addresses the very information alleged to be lacking. Thus, those assertions fail to raise any genuine issue of material fact, and EC 1.2 is moot.

1. Contentions of Omission

The Commission has explained that where a contention alleges the omission of particular information or an issue from an application, and the information is later supplied by the applicant or considered by the Staff in a draft EIS, the contention is moot. *See Duke Energy Corp.* (McGuire Nuclear Station, Units 1 and 2; Catawba Nuclear Station, Units 1 and 2), CLI-02-28, 56 N.R.C. 373, 382–383 (2002); *see also USEC, Inc.* (American Centrifuge Plant), CLI-06-09, 63 N.R.C. 433 (2006).

[3] Intervenors have not mounted any factual challenge to the accuracy of the data supporting the EIS.

As noted above, the controversy between SNC and Intervenors relates to an alleged failure to "consider" or "discuss," not to any alleged errors or inaccuracies in the DEIS' discussion of the issue. This contention is thus a contention of omission. *See In the Matter of Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP 01-23, 54 N.R.C. 163, 171-72 (2001). When an admitted contention involves the failure to address an issue, an applicant may cure the deficiency by supplementing the information in the ER, such as through a response to a request for additional information, or by showing that the DEIS contains the requisite discussion of the issue. *See id.*

For each of Intervenors' assertions in support of EC 1.2, as set out in Dr. Young's Declaration (other than the legally incorrect and immaterial alleged lack of field surveys from items (i), (ii) and (viii) addressed above), the revised ER, responses to RAIs and the DEIS contain or reference the material asserted by Intervenors to be missing and offered as factual support for EC 1.2.

2. Deficiencies Alleged in the Petition and the Young Declaration are Clearly Addressed in the DEIS

a. Item (iii) is Moot

Through the Young Declaration, Intervenors claim that the DEIS does not include mortality rate data from the DOE SRS field studies on entrainment. Young Decl. ¶ A. 11. To the contrary, section 5.4.2.2 of the DEIS specifically references studies conducted to determine entrainment rates for the DOE SRS between 1982 and 1985. Those studies estimated 8.3 to 12.3 percent rates of mortality from entrainment, and these data are discussed on page 5-25. DEIS at 5-25. After distinguishing Vogtle's proposed intakes from the SRS', NRC Staff concluded that the expected level of entrainment at Units 3 and 4 would be lower than those at the SRS. *Id*; Facts ¶ 10.

b. Item (v) is Moot

Intervenors, again, through Dr. Young's Declaration, assert that the DEIS does not calculate the worst-case scenarios for quantifying entrainment or thermal impacts, and that entrainment impacts are not based on the 7Q10 flow. However, as the DEIS illustrates, the NRC Staff considered, as a factor affecting impingement and entrainment losses, the maximum percentage of flow of the Savannah River that is withdrawn. Facts ¶ 12. "At the maximum withdrawal rate of 3.65 m^3/s (129 cfs) the two new units would withdraw between 1.4 and 3.4 percent of the total flow of the Savannah River depending on the drought level [including Drought Level 3] in the Savannah River." DEIS at 5-24 (emphasis added). The 3.4 percent withdrawal level is based directly on the 7Q10 flow alleged to missing form the analysis. *See id.* (referencing Drought Level 3) and *see* fig. 5-1. With respect to thermal discharges, the NRC Staff assumed conservative river conditions (i.e. "maximum discharge temperatures") to determine the "maximum" size of the thermal plume, but noted that under average conditions the plume would be smaller. DEIS at 5-26. Using Drought Level 3 flow rate (the maximum measurable drought), the NRC Staff concluded that the size of the thermal plume is small in comparison to the width of the Savannah River and that the location and design of the discharge would not impede fish passage up and down the river. *Id.* These efforts to assess conditions under maximum withdrawals, maximum temperatures and maximum droughts constitute the appropriate "worst-case" analysis alleged to be missing, including analysis of 7Q10 flow conditions.[4]

[4] NEPA does not require a strictly worst case analysis in any event. *See Limerick Ecology Action, Inc. v. U.S. Nuclear Regulatory Com'n*, 869 F.2d 719, 743 (3d Cir. 1989) (acknowledging that the NRC did not adopt the CEQ "worst case" regulation and held the NRC was not required to perform a "worst case" analysis under NEPA and noted that the CEQ regulations have "subsequently" been amended to eliminate the requirement that a worst case analysis be performed).

c. Item (vi) is Moot

Dr. Young asserts that the ER does not use the actual maximum withdrawal rates from the existing units to analyze cumulative withdrawal impacts. Young Decl. ¶ A.14. Through Young, Intervenors suggest that this is the case because actual withdrawal rates might somehow exceed the maximum rates identified in the DEIS. *See id.* However, Table 7-1 in the DEIS provides maximum withdrawal rates for Units 1 and 2. These rates are taken from the FES for Units 1 and 2, which are based on the maximum physical design capacity of the pumps. It is a physical impossibility for actual withdrawal rates to exceed the maximum design rates identified and used as the basis for the cumulative impacts analysis. Accordingly, item (vi) is moot because section 7 does in fact analyze the maximum withdrawal rates for Units 1 and 2.

d. Item (vii) is Moot

The discussion of the aquatic environment in sections 2.7.2.1 and 2.7.2.2 fully responds to the assertion in Dr. Young's Declaration that the ER [read DEIS] fails to quantify or describe systematically the species composition and habitat in the vicinity of the intake and cooling structures, including shortnose sturgeon, American shad, and blueback herring. Young Decl. ¶ A.16. Sections 2.7.2.1 and 2.7.2.2 contain 20 pages of discussion of the aquatic environment and biota in the vicinity of Vogtle and other areas likely to be impacted by the construction, operation or maintenance of the proposed Units 3 and 4. The NRC Staff stated that the potential for impacts from operation of the proposed Units 3 and 4 to aquatic biota would be primarily to organisms inhabiting the Savannah River and lists these as: attached algae and aquatic macrophytes, diatoms, benthic macroinvertebrates (including mussels, clams, aquatic insects), mollusks, and fish. Relying on biological and water-quality studies of the area of the Savannah River adjacent to Vogtle conducted by the Academy of Natural Sciences of Philadelphia

("ANSP") for the DOE's Savannah River Site, NRC Staff systematically describes these aquatic biota. *See* DEIS at 2-73 – 2-91; Facts ¶ 16.

Table 2-7 lists all of the native, resident, diadromous, marine and upland fish species in the Middle Savannah River (as taken from Marcy et al.). Citing to nine different scientific studies, the DEIS discussion of the shortnose sturgeon describes the species, the composition of the species near Vogtle, as studied in connection with the DOE SRS, and concludes that it is unlikely that spawning activity occurs in the vicinity of the Vogtle site. DEIS at 2-87 – 2-91. With regard to American Shad, the DEIS describes and quantifies the species: "Bailey et al. (2004) estimated the population size of American shad that reached the New Savannah Bluff Lock and Dam (located approximately 56 km [35 mi] upstream of the VEGP site) at 158,000 in 2001 and 217,000 in 2002." DEIS at 2-80. SNC supplied NRC with four different studies, referenced in the ER (§§ 2.4 and 5.3), which described and quantified the blueback herring population in the Savannah River in the vicinity of the Vogtle units. Facts ¶ 16.

e. Item (ix) is Moot

Intervenors also allege that the DEIS does not consider the potential impacts on the aquatic drift community, including shad, from the cooling system thermal discharges. To the contrary, sections 5.3.3.1, 5.4.2.3 and 7.5 of the DEIS include a discussion of NRC Staff's thermal impact assessment using the CORMIX model to estimate the size and temperature of the thermal plume from the existing Units 1 and 2 as well as the proposed Units 3 and 4. The DEIS quantifies the size of the thermal plume, and based on their assessment of the size of the plume, the Staff concludes that "thermal impacts to aquatic ecosystems" would be minor. This includes impacts to American shad, which are specifically addressed as part of the aquatic ecosystem in section 2.7.2.1. DEIS at 2-80. The DEIS quantifies the maximum size of a thermal plume under

worst case conditions, with a temperature increase of five degrees as 29.6 m long by 4.6 m wide. DEIS at 7-15. A figure detailing the size of this maximum plume is even provided as Figure 5-1. DEIS at 5-15. This maximum plume occurs, however, was modeled to occur at very low ambient river temperatures on January 31st and February 1st and not during the shad spawn. DEIS at 5-14, 15. The DEIS also quantifies the maximum size of the high temperature (90 degree isotherm plume) as extending 0.9 m with a lateral size of 2.2 m. Because during drought conditions the Savannah River is 95.1 m wide, DEIS at 5-14, 16, 26, the drift community exposure to the plume is less than 2.2/95.1 = 2.4%, and although the retention time within the plume (with a flow rate of 1.5 feet per second and a plume extent of 3 feet) would render 100% mortality rates extremely conservative, this data from the quantified plume size in the DEIS supports the Staff's conclusion. Further, NRC Staff determined that "[t]he location and design of the discharge would not impede fish passage up and down the river. Fish and other organisms in the river would likely avoid the elevated temperatures. They can move through this part of the river unencumbered by any structures or physical features that would retain them in the plume." DEIS at 5-26; Facts ¶ 18. Section 5.4.2.3 also addresses potential cold shock mortalities as a result of thermal discharges and concludes that this is less likely to occur at a multiple-unit plant or when the discharge is to a river where the volume of the discharge in comparison to the flow of the river is very small, as is the case at Vogtle. The NRC Staff also concluded that no large growths of invasive nuisance organisms were anticipated from the thermal plume.

f. Item (x) is Moot

Although not supported by the Young Declaration, Intervenors claim the ER does not disclose whether chemical constituents in the liquid effluent will be discharged at harmful levels. Petition at 12. This is incorrect. Section 5.4.2.4 of the DEIS discusses the chemical impacts

expected from the chemical treatment of the cooling water. Table 5-4 of the DEIS provides a detailed list of the water treatment chemicals, their use, the concentration that is anticipated to be discharged from Units 3 and 4 and the toxicity data from the Material Safety Data Sheets for each of those chemicals. NRC Staff summarizes that the concentrations expected in the discharge are significantly lower than the LC50 (the concentration that kills 50% of the sample population) and that the water flow from the Savannah River would further dilute the concentration of these chemicals. DEIS at 5-27 – 5-28; Facts ¶ 20. The DEIS acknowledges that no adverse impact to aquatic organisms has been observed from the chemicals used in the cooling system for Units 1 and 2 and concludes that the impacts from chemical discharges from proposed Units 3 and 4 to the Savannah River would be minimal. Plainly, the DEIS discloses whether chemical constituents in the liquid effluent will be discharged at harmful levels.

g. Item (xi) is Moot

Finally, contrary to Intervenors' assertion in their Petition, the DEIS does evaluate the cumulative impacts of acute or chronic toxicity of the existing discharge. *See* Petition at 13. Section 7.5 of the DEIS identifies and considers any adverse cumulative impacts that potentially would result from construction and operation of the proposed Units 3 and 4. In section 7.5, NRC Staff specifically states that the potential cumulative impacts from chemical releases "would not negatively impact aquatic organisms … and are considered by the staff to be minor." DEIS at 7-16. This conclusion is based on the Staff's assessment of Units 1 and 2 existing Clean Water Act obligations, including monitoring obligations. *Id.*; Facts ¶ 21.

VI. CONCLUSION

In summary, the DEIS fully assesses the impacts, including mortality, to aquatic organisms from impingement, entrainment, thermal pollution and chemical discharges from the

operation of Vogtle Units 3 and 4. The DEIS bases its evaluation on baseline species and habitat data derived from available field studies of the Savannah River site conducted by, among others, the ANSP. The DEIS further utilizes established standards concerning the design and operation of intake structures, water use, through-screen velocities, operating experience derived from Units 1 and 2 regarding impingement, data collected from the field upstream at the substantially larger SRS intake structures, CORMIX modeling of the thermal plume, as applied to information on species composition, habitat, fish passageways around the vicinity of the site of the proposed discharge line, and the low toxicity and high dilution rates of chemical effluent from the proposed facility. The DEIS makes a precise quantitative estimate of mortality from entrainment. The fact that the DEIS concludes that impacts range are minor, i.e. negligible, from impingement and thermal and chemical discharges, is not a basis for a contention that the estimates are not quantified. The DEIS answers the complaint of the Intervenors that the ER failed to quantify the impacts to the aquatic community from the operation of the proposed units.

There is no doubt that the DEIS takes a "hard look" at the aquatic impacts of the proposed cooling system, and that there remains no material fact in dispute which could warrant a hearing. Therefore, and for the reasons stated, SNC moves for summary disposition of EC 1.2.

Respectfully submitted,

(Original signed by M. Stanford Blanton)

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Dated this 17th day of October, 2007

ATOMIC SAFETY AND LICENSING BOARD

Before the Licensing Board:

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

In the Matter of	)	**Docket No. 52-011-ESP**
Southern Nuclear Operating Company	)	**ASLBP No. 07-850-01-ESP-BD01**
(Early Site Permit for Vogtle ESP Site)	)	**October 17, 2007**

CERTIFICATE OF SERVICE

I hereby certify that copies of SOUTHERN NUCLEAR OPERATING COMPANY'S MOTION FOR SUMMARY DISPOSITION OF INTERVENORS' ENVIRONMENTAL CONTENTION 1.2 in the above captioned proceeding have been served by electronic mail as shown below, this 17th day of October, 2007, and/or by e-submittal.

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