

**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 F. Jackson**

In the Matter of	)	Docket Nos. 52-025-COL and
SOUTHERN NUCLEAR OPERATING CO.	)	52-026-COL
(Combined Operating License, Vogtle Electric	)	ASLBP No. 09-873-01-COL-BD01
Generating Plant, Units 3 and 4)	)	December 4, 2009

**JOINT PETITIONING INDIVIDUALS' REPLY IN SUPPORT OF PETITION TO
INTERVENE AND ADMIT NEW CONTENTION**

This Memorandum is submitted on behalf of the Joint Petitioning Individuals Vince Drescher, *et al.* (collectively, "JPI"), in support of their petition to intervene and admit a new contention, and in response to the answers filed by NRC Staff and the applicant, Southern Nuclear Operating Company ("SNC").

Both NRC Staff and SNC concede that petitioner Kenneth Ward has standing because he resides within 50 miles of the Vogtle plant. Each of the other JPI also has standing. Having fished on the Savannah River for decades, they have a cognizable interest in ensuring that potential adverse impacts of proposed Units 3 and 4 (alone or in conjunction with other reasonably foreseeable events)¹ on water quantity and quality are adequately assessed and protected.

Moreover, the proposed contention is both admissible and timely. The gravamen

¹ As discussed in the petition, the Commission is required under the National Environmental Policy Act 42 U.S.C. §§ 4321 *et seq.* ("NEPA") to consider reasonably foreseeable future actions in conjunction with the proposal before it. 40 C.F.R. § 1508.7; NRC Environmental Review Guidance for Licensing Actions Associated with NMSS Programs, NUREG-1748 at 4.2.5.2.

of JPI's claim is the potential for water withdrawals from Vogtle Units 3 and 4, particularly in combination with recurrent restrictions on releases from Thurmond Dam to 3100 cfs or lower, to adversely affect the river's ability to maintain water quality standards (especially dissolved oxygen) necessary to sustain the river's designated use for fishing. That issue was not addressed, let alone resolved, in the Early Site Permit ("ESP") proceeding. Further, the proposed contention is based on new information that not only arose after the ESP proceeding, but undermines the explicit assumptions of NRC Staff in that proceeding. Whereas NRC Staff contended (and the Board found) that the Army Corps of Engineers ("Corps") was "extremely unlikely" to reduce releases from the Thurmond Dam to approximately 3100 cfs in the future,² the October 2009 Corps proposal to do exactly that (and perhaps reduce releases to 2600 cfs) on a repeated basis in the future strongly suggests the opposite. Therefore, under NEPA the NRC Staff must undertake the "hard look" analysis of these cumulative impacts that is commensurate with this reasonably foreseeable, if not likely, scenario.

I. ALL PETITIONERS HAVE STANDING

A. Mr. Ward's Standing is Unopposed

NRC Staff and SNC both concede that Mr. Ward has standing because he resides within 50 miles of Vogtle. NRC Staff Answer at 8; SNC Answer at 4.³ In addition, each

² *Southern Nuclear Operating Co.* (Early Site Permit for Vogtle ESP Site), 52-011-ESP, Second and Final Partial Initial Decision (Aug. 17, 2009) ("Second PID"), at ¶ 4.32. The JPI do not seek in this proceeding to challenge the ESP EIS. Rather, they contend that there is new information concerning the likelihood that releases from Thurmond Dam will be restricted in the future to 3100 cfs or lower -- which requires the NRC Staff now to analyze the potential impacts of those scenarios -- scenarios that NRC Staff dismissed as highly unlikely.

³ They also concede that Mr. Bashlor resides only 53 miles from the Vogtle plant, very close to the 50-mile radius which they concede would confer standing. NRC Staff Answer at 9 n.6; SNC Answer at 4 n.10.

of the other JPI also has standing. As this Board has noted, in assessing whether a petition demonstrates standing, it must “construe the petition in favor of the petitioner.”⁴ Even without the benefit of such a presumption, petitioners have demonstrated that they meet the tests for standing set forth by the Commission. And construing the petition in petitioners’ favor removes any possible doubt concerning their standing.

B. The JPI Have Standing Based On Fishing Within 50 Miles of Vogtle

First, Messrs. Drescher, Horn, Bashlor and Partain each has alleged sufficiently ongoing connection with, and presence within, 50 miles of the Vogtle plant to confer standing. NRC Staff concedes that these individuals have established that they fish at locations within 50 miles of Vogtle, but asserts that they have not established that they fish “frequently” at those locations.⁵ In fact, these individuals have not merely attested that they have fished “over a period of several years,” as the NRC Staff claims.⁶ Rather, they have sworn that they have fished at these locations “[f]or many years” (Drescher Declaration); “[f]or at least the past 25 or 30 years” (Bashlor Declaration); “[f]or at least the past 40 years” (Horn Declaration); and “for more than 35 years” (Partain Declaration). These allegations, especially when construed in favor of petitioners, are more than sufficient to establish the requisite “frequency” of fishing activities within 50 miles of Vogtle.⁷ They certainly demonstrate “an ongoing connection and presence,”

⁴ *Southern Nuclear Operating Co.* (Vogtle Electric Generating Plant, Units 3 and 4), Docket Nos. 52-025-COL and 52-026-COL (March 5, 2009), at 7 (citing *Ga. Inst. of Tech.* (Georgia Tech Research Reactor, Atlanta, Georgia), CLI-95-12, 42 NRC 111, 115 (1995)).

⁵ NRC Staff Answer at 9-10.

⁶ NRC Staff Answer at 9.

⁷ Fishing “regularly” for 25 years or more can hardly be equated with “occasional” visits to a farm that were found insufficient to establish standing in the case cited by NRC Staff. NRC Staff Answer at 10 n.10, *Wash. Pub. Power Supply Sys.* (WPPSS Nuclear Project No. 2), LBP-79-7, 9 NRC 330, 336-38 (1979). Further, petitioners’ longstanding past use and residence along the

which NRC Staff concede is sufficient to establish standing based on activities within 50 miles of the site. NRC Staff Answer at 7 (quoting *Consumers Energy Co. (Big Rock Point Indep. Spent Fuel Storage Installation)*, CLI-07-21, 65 NRC 519, 523-24 (2007)).

C. The JPI Satisfy Traditional Standing Requirements

Quite apart from the 50-mile presumption to which they are entitled, the JPI also satisfy traditional standing requirements. Contrary to the assertions of both NRC Staff (Answer at 11) and SNC (Answer at 4), the petitioners have provided specific information concerning how the proposed Vogtle Units 3 and 4 could adversely affect their interests in fishing on the Savannah River, and how they would thereby suffer “injury in fact” that would be “fairly traceable” to Units 3 and 4 if those potential impacts are not adequately assessed under NEPA.

NRC Staff claims that “none of the petitioners has specified *in his declaration* in what way the proposed action would adversely affect his recreational fishing”⁸ The strange implication seems to be that a detailed analysis of *how* Vogtle Units 3 and 4 would adversely affect water quality (and fish) in the Savannah River must be set forth under oath by these individual lay petitioners. NRC Staff simply ignores the Declaration provided by the JPI’s expert, Paula L. Feldman, P.E., which provides precisely the explanation which NRC Staff (and SNC) claim is missing. Presumably, if the individual petitioners had expressed the opinions contained in Ms. Feldman’s Declaration, NRC Staff and SNC would have objected that they are not qualified to do so.

Savannah River substantiates a serious intention to frequent the area and fish on the river in the future. *See USEC, Inc. (American Centrifuge Plant)*, CLI-05-11, 61 NRC 309, 313 (2005).

⁸ NRC Staff Answer at 11 (emphasis added). Likewise, SNC complains that “petitioners provide only cursory descriptions of their purported interest in this proceeding.” SNC Answer at 4.

Petitioners have described decades of fishing on the Savannah River, and state that they will be harmed if the river is adversely affected or if the Vogtle expansion is not accurately analyzed. Ms. Feldman's Declaration fills in the picture by showing how the river is likely to be impacted by a failure to adequately analyze the impacts of Units 3 and 4 on water quality -- including the new information concerning the Corps' future plans to lower releases from Thurmond Dam to 3100 cfs, and perhaps to as low as 2600 cfs. The Commission has rejected the proposition that expert testimony is required to support a standing declaration.⁹ Nevertheless, Ms. Feldman's declaration provides such expert testimony. Petitioners have exceeded the requirements to support standing.

It is undisputed that water consumption by proposed Units 3 and 4 can affect the Savannah River and its resources -- including fish.¹⁰ As the petitioners state in their declarations, their interests stand to be adversely affected if the water quality necessary to sustain the river's use for fishing is harmed, or if the Commission fails to take a hard look at those potential impacts -- and to adequately assess new information and issues that were not considered in the ESP proceedings but which can bear significantly on those impacts. Petitioners seek to ensure that the requisite hard look is undertaken. Failure to observe the procedural as well as substantive requirements of NEPA constitutes a "discrete and palpable -- not hypothetical -- injury." *Cleveland Elec. Illuminating Co.* (Perry Nuclear Power Plant, Unit 1), CLI-93-21, 38 NRC 87, 93 (1993).

Further, the petition provides ample evidence to demonstrate the second prong of the standing test, causation. To meet this test, petitioners need only show that "the chain

⁹ See *Crow Butte Res., Inc.* (North Trend Expansion Area) CLI-09-12, 2009 WL 1864004, at *5 (June 25, 2009).

¹⁰ See, e.g., Second PID at ¶ 4.16.

of causation is *plausible*.”¹¹ Here, petitioners have demonstrated that it is not only plausible, but perhaps likely, that the new Corps of Engineers proposal to reduce releases from Thurmond Dam in the future to 3100 cfs (or as low as 2600 cfs) for up to five months every year, combined with the withdrawal from Vogtle Units 3 and 4, could cause injury to their interests in fishing on the Savannah River. As the Feldman Declaration (¶¶ 10-15) explains, such repeated restrictions on dam releases in the future, combined with the anticipated water withdrawals by Units 3 and 4, could well reduce in-stream flows to levels that are below the minimum “7Q10” flows that are necessary to ensure the maintenance of water quality standards in the river downstream of Vogtle.

The Environmental Assessment (“EA”) prepared by the Corps in connection with its October 2009 proposal makes plain that these restrictions on dam releases, combined with additional reductions in flow resulting from the withdrawal of river water by Vogtle Units 3 and 4, have the potential to adversely affect in-stream water quality -- specifically including dissolved oxygen (“DO”) levels -- all the way downstream to the mouth of the Savannah River, its estuaries and the Savannah Harbor.¹² It is axiomatic that water quality standards such as those for dissolved oxygen are, by definition, the standards that the State of Georgia has determined are necessary to support designated uses of the river -- which specifically includes protecting its fish population and related aquatic resources.¹³

¹¹ *Crow Butte Resources*, 2009 WL 1864004 at *6 (emphasis added).

¹² Petition to Intervene, Attachment C, at 52 (DO levels will be affected by reduced Thurmond Dam releases (and hence reduced in-stream flow levels) all the way down to Clyo, where Mr. Horn fishes); at 53-57 (analyzing chloride at River Mile 29 and DO in Savannah Harbor); and 62-67 (analyzing freshwater marsh and freshwater flows to the river mouth, beyond Clyo).

¹³ See Ga. Reg. 391-3-6-.03(6).

These potential impacts on water quality standards, and resulting potential adverse impacts on the river's fish population, amply establish causation for purposes of petitioners' standing. In *Crow Butte Resources* (In Situ Leach Facility), the ASLB considered the hydrogeology of an aquifer system and held that "plausible migration" of contaminants due to "some level of interconnection" with the aquifer used by petitioners was sufficient to establish standing.¹⁴ In *Crow Butte Resources* (North Trend Expansion Area), the Commission affirmed the standing of a petitioner residing 60 miles downstream and fishing in the river at issue, noting "two court cases where plaintiffs living 25 and 100 miles downstream of a point source of contamination had successfully sued for damages."¹⁵ In this case, the Corps' EA, coupled with the very data cited by NRC Staff and SNC, strongly suggest that it is plausible, if not likely, that the Corps' new proposed flow reduction plan combined with the Vogtle expansion would cause adverse impacts to in-stream flows (and hence water quality necessary to sustain the river's fish) far downstream of the Vogtle plant. The EA discusses how restricting releases at Thurmond Dam can reduce river flows, and water quality, all the way downstream to Savannah Harbor.¹⁶ In addition, the very data cited by NRC Staff and SNC show that on more than 20 days between mid-September 2008 and early February, 2009, river flows at the Vogtle site were below the flow level of 4070 cfs that is needed to ensure attainment of water quality standards at and downstream of the site.¹⁷ And those instances occurred before Units 3 and 4 have come on line. In short, it is at least

¹⁴ *Crow Butte Res., Inc.* (In Situ Leach Facility, Crawford, Nebraska), 08-867-02-MLA-BD01, 68 NRC 691, 704-709 (2008).

¹⁵ *Crow Butte Res.*, 2009 WL 1864004 at *6.

¹⁶ See n.12, *supra*.

¹⁷ See *infra* at 14-15.

plausible, if not likely, that a failure to fully analyze these impacts will adversely affect petitioners' interests.

It is also plain that petitioners satisfy the "redressability" element of standing. The "harm" to petitioners is the failure to comply with NEPA's procedural requirements -- to give a "hard look" to the potential cumulative impacts of the water withdrawals from proposed Units 3 and 4 in combination with the Corps' new proposal for restricting releases from Thurmond Dam. That harm will be redressed if the NRC adequately considers those impacts as required by NEPA. As the Supreme Court has explained, "[a] person who has been accorded a procedural right to protect his concrete interests can assert that right without meeting all the normal standards for redressability and immediacy" and, in a NEPA context, need not "establish with any certainty that the [environmental impact] statement will cause" an agency to alter its conduct.¹⁸

For the foregoing reasons, each and all of the JPI have standing.

II. THE PROPOSED CONTENTION IS PREDICATED ON INFORMATION THAT IS BOTH NEW AND SIGNIFICANT, AND RAISES AN ISSUE THAT WAS NOT ADDRESSED IN THE ESP PROCEEDINGS

The fundamental premise underlying the opposition of NRC Staff and SNC to the petition to intervene is their common assertion that the JPI's proposed contention does not raise any new or significant facts and issues that were unaddressed or unresolved in the Vogtle ESP proceeding. In making that argument, both NRC Staff and SNC misstate or misapprehend the information that the JPI assert is both new and significant, and they ignore critical aspects of exactly what the NRC Staff said, and this Board found, in the ESP proceedings. The support for a contention "may be viewed in a light that is most

¹⁸ *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 572 n.7 (1992).

favorable to the petitioner and inferences that can be drawn from evidence may be construed in favor of the petitioner.”¹⁹ Especially when viewed in that light, the proposed contention is amply supported.

A. The Corps of Engineers’ October 2009 Proposal Constitutes New Information

The new information upon which the JPI rely is the October 2009 proposal of the Corps of Engineers to restrict releases from Thurmond Dam to 3100 cfs -- and possibly to as low as 2600 cfs²⁰ -- *in the future, repeatedly and recurrently*, and for up to *five months* (mid-September through mid-February) every year when Level 3 drought conditions occur. The proposal contains no end date.

No matter how NRC Staff and SNC slice it, the Corps’ October 2009 proposal is new information that is not only different from, but undercuts the NRC Staff’s prior testimony (which the Board adopted) in the ESP proceedings. NRC Staff testified that the instances in which releases from Thurmond Dam would drop to as low as 3000 cfs would be “rare,”²¹ and that such low flow conditions “are unlikely to occur or be of any extended duration.”²² Similarly, in the mandatory hearing, NRC Staff testified that, although there had been two recent periods of significant drought, they “did not

¹⁹ *Entergy Nuclear Vermont Yankee et al.* (Vermont Yankee Nuclear Power Station), 50-271-LR, 64 NRC 131, 150 (2006) (citing *Arizona Public Serv. Co.* (Pale Verde Nuclear Generating Station, Units 1, 2 and 3), CLI-91-12, 34 NRC at 355 (1991)).

²⁰ Both NRC Staff (Answer at 19 n.17) and SNC (Answer at 9 n.39) dismiss the 2600 cfs option on the grounds that the Corps has allegedly rejected it in favor of the 3100 cfs option. This is not accurate. The Corps’ October 2009 proposal identifies 2600 cfs as an alternative “Option 2” under consideration. Although the Corps states that it prefers the 3100 cfs option, that preference is a proposal that is subject to public comment -- and subject to change. The 2600 cfs option is therefore a reasonably foreseeable and plausible scenario.

²¹ *Southern Nuclear Operating Co.* (Early Site Permit for Vogtle ESP Site), 52-011-ESP, First Partial Initial Decision (June 22, 2009) (“First PID”), at ¶ 4.44.

²² *Id.*, ¶ 4.116

necessarily see these as indicative of a long-term trend.”²³ At the time of the ESP hearings, the Level 3 drought conditions still existed, but the Corps of Engineers had already increased releases from the Thurmond Dam back up to 3600 cfs from a “temporary deviation plan” which had reduced dam releases to 3100 cfs for a brief period during late December 2008 and some days in January and February 2009.²⁴ It was NRC Staff’s stated assumption that the Corps’ “temporary deviation” to 3100 cfs last winter was an anomalous departure from what the NRC Staff described as the pre-existing, “original” and “traditional” Contingency Plan which specified 3600 cfs for Level 3 drought conditions. In other words, it was the unequivocal assumption of NRC Staff that the Corps’ intermittent reduction of releases from Thurmond Dam to 3100 cfs over the course of a few months in the winter of 2008-2009 was a one-off deviation that would not likely recur in the future. These assumptions were, in fact, consistent with the Corps’ own expectations in the fall of 2008 that the temporary plan to reduce dam releases to 3100 cfs would end in February 2009, and would not recur in the foreseeable future.²⁵

The Corps’ October 2009 proposal directly undercuts the NRC Staff’s assumption. The drought of record that existed when the ESP hearings took place (and which prompted the Corps to adopt a deviation from its pre-existing drought contingency plan for several weeks last winter) ended in June 2009.²⁶ Yet four months after the drought ended, the Corps saw fit in October 2009 to propose a contingency plan to deal with future level 3 drought conditions on a continuing basis in the future, for up to five

²³ Second PID at ¶ 4.19.

²⁴ ESP Contested Hearing, Transcript at 708, lines 19-24; Tr. 799-800.

²⁵ See *infra* at 11-12.

²⁶ See Feldman Decl., ¶ 7; See also “Officials: Georgia Drought Over,” WGCL Atlanta (June 10, 2009), available at <http://www.cbsatlanta.com/news/19712975/detail.html> (last visited 12/4/09) (annexed as Attachment A hereto).

months each year.²⁷ Contrary to the NRC Staff's assumption (and the Corps' own expectations last winter), the Corps concluded that the potential for Level 3 drought conditions to recur in the future is sufficiently foreseeable to put in place a drought contingency plan that will reduce dam releases to 3100 cfs or 2600 cfs on a continuing and recurring basis for up to five months each year -- indefinitely into the future.

It is true, as SNC asserts, that the Corps' October 2009 proposal "do[es] not *affect* the frequency of Level 3 drought conditions."²⁸ However, the fact that the Corps has seen fit to put that plan in place months after the last drought ended does constitute new information suggesting that the potential for future and recurrent restrictions of releases from Thurmond Dam is much greater than the NRC Staff assumed in the ESP proceedings -- that it is a "reasonably foreseeable" scenario requiring the NRC to take a "hard look" at the potential cumulative impacts of such recurrent restricted flows from the dam in combination with water withdrawals from the Vogtle plant. By definition, the Corps' proposal converts what, last winter, was assumed by NRC Staff and the Corps to be an aberration into a long-term, institutionalized plan that has the potential to restrict dam releases for up to five months each year, year in and year out.

That the October 2009 plan constitutes new information is confirmed by comparing it with what the Corps said in announcing its temporary plan last winter. Then, the Corps said that the purpose of last winter's plan was to "maintain the conservation pools within the Savannah System through at least 2011, and to decrease the

²⁷ Although the EA apparently was at least partially written when the drought was still occurring (*see, e.g.*, EA at 10-11), the Corps proposed the plan in October 2009, after the drought had ended -- thus confirming that the Corps believes that future droughts are sufficiently plausible, if not likely, so as to warrant the adoption of the plan to address future droughts.

²⁸ SNC Answer at 10 (emphasis added).

recovery time to refill the reservoirs.”²⁹ In other words, last winter, the Corps expected that temporarily reducing dam releases to 3100 cfs for a few months from November 2008-February 2009 would suffice to ensure adequate reservoir levels through at least 2011. By October 2009, however, the Corps’ expectations concerning the possibility of future severe droughts had changed so much that it deemed it necessary to propose an open-ended plan to reduce dam releases to 3100 cfs indefinitely into the future for up to five months each year in order to ensure adequate levels in the reservoir.

Moreover, although the NRC Staff and SNC assert that the impacts of reducing dam discharges to 3100 cfs were assessed in the ESP proceedings, any fair reading of the record shows that Staff’s analysis was extremely cursory, commensurate with its assumption that future restrictions on dam releases to the range of 3100 cfs would be “extremely rare”³⁰ and therefore did not require a “hard look” under NEPA. Consistent with that assumption, staff provided very limited data concerning river flows when dam releases dropped to 3100 cfs, but solely “to provide additional context for its analysis.”³¹ The staff claimed that river flows at Vogtle had dropped to 3800 cfs on only two occasions when dam releases dropped to 3100 cfs. But that correlation was based entirely on the relatively few occasions during the winter of 2008-09 when the Corps actually restricted dam releases to 3100 cfs. That hardly constitutes a sufficient analysis to determine with confidence how river flows would be affected in the future, year in and year out, if dam releases were restricted to 3100 cfs for five months each year under

²⁹ See ESP Contested Hearing, Exhibit NRC000039, U.S. Army Corps of Engineers, Draft Environmental Impact Statement and Finding of No Significant Impact, Temporary Deviation Drought Contingency Plan (October 2008), at 5 (excerpt annexed as Attachment B hereto).

³⁰ NRC Staff Testimony Concerning EC 1.2 at 11.

³¹ *Id.* See also Second PID, ¶ 4.21.

future drought conditions that may be worse than occurred last year. *See* Feldman Decl. ¶ 15. In short, Staff's cursory "analysis" of the impacts of restricting dam releases to 3100 cfs was in line with its assumption that such restrictions will be extremely rare. It was prepared only to "provide context" and did not constitute anywhere near the "hard look" that NEPA would require if such restrictions are plausible, reasonably foreseeable scenarios -- as is now the case in light of the Corps' October 2009 proposal.³²

B. The New Information is Significant

The new Corps proposal is also undoubtedly significant because it plainly has the "potential" to affect the previous findings and conclusions of the NRC Staff's evaluation of the issue. *See* SNC Answer at 9-10 (citing 72 Fed. Reg. 49,352, 49,431 (Aug. 28, 2007)) (emphasis added). As discussed above, the Corps' October 2009 proposal undercuts a key assumption made by NRC Staff during the ESP proceedings with respect to the likelihood of sustained reductions of releases from Thurmond Dam in the future. Beyond that, the Feldman Declaration and the EA make plain why this information is significant from the standpoint of the river, its water quality and its fish.

In order to ensure that applicable water quality standards are maintained at and downstream of the Vogtle plant, in-stream river flows must be maintained at a minimum level, known as the "7Q10" flow -- the minimum 7-day average flow at particular locations over a 10-year period. Feldman Decl., ¶ 11. At the Jackson gage, located six miles upstream of Vogtle, that minimum flow is 4070 cfs. *Id.* at ¶ 14. At the Millhaven

³² The JPI do not seek to challenge the EIS prepared for the ESP. Rather, they assert that a new environmental analysis must now be undertaken because new information indicates that certain scenarios previously dismissed by NRC Staff as highly unlikely are in fact reasonably foreseeable. Nor do they seek to challenge the Corps' EA in this proceeding. Rather, they discuss that EA, including its deficiencies, because it bears on whether the new information is significant for purposes of this proceeding.

gage, which is the USGS gage nearest to Vogtle downstream of the plant, the 7Q10 flow is higher, 4160 cfs. EA at 25. Thus, it is clear that the 7Q10 flow at the Vogtle plant would be at least 4070 cfs. *See also* Reply Declaration of Paula L. Feldman, P.E., ¶ 1, submitted herewith. Failure to maintain the requisite 7Q10 flow at each stage where such flows are measured can cause dissolved oxygen levels in the river to drop. Feldman Reply Decl., ¶ 3. Georgia's water quality standards require a minimum DO concentration of 5 parts per million (daily average) and 4 parts per million (at all times) to ensure the protection of fish and the river's designated uses. EA at 23.

Both NRC Staff and SNC acknowledge that, based on the relatively limited experience from last winter, river flows near the Vogtle plant dropped to 3800 cfs on a few occasions when the Corps reduced discharges from the dam to 3100 cfs.³³ Such flow levels are below the 7Q10 at that location that is necessary to ensure maintenance of water quality standards, including for dissolved oxygen. In fact, according to the very data from the Waynesboro gage cited by NRC Staff and SNC, between September 15, 2008 and February 2, 2009, flows at Waynesboro (at the plant site) were below 4070 cfs on 22 days,³⁴ and therefore lower than than the 7Q10 flows required at Vogtle to ensure attainment of water quality standards necessary to protect fish. *See* Feldman Decl., ¶ 14; Reply Decl. ¶ 1. And this historical data does not account for the added impacts of future withdrawals of river water by Units 3 and 4. Nor does it account for potential impacts of restrictions on dam releases in September and October (when dam releases may be

³³ NRC Staff Answer at 22 (flows "rarely" below 3800 cfs); SNC Answer at 7-8 (same).

³⁴ *See* ESP Contested Proceeding, Exhibit SNC000053 (excerpts annexed as Attachment C hereto).

restricted under the Corps' 2009 proposal), because last year the Corps did not begin to reduce releases from Thurmond Dam to 3100 cfs until November.

The EA itself makes plain that the potential cumulative impacts of recurrent restrictions of releases from Thurmond Dam, combined with the additional water withdrawals from proposed Units 3 and 4, may adversely affect in stream flows far downstream -- and hence dissolved oxygen concentrations, and hence the rivers' designated use for fishing. For example, according to modeling undertaken by the Corps, the proposed reduced discharges in Thurmond Dam will adversely affect dissolved oxygen concentrations and salinity all the way downstream in Savannah Harbor. EA at 53-54. River levels will be reduced all the way downstream to river kilometer 65 (about river mile 40, which is more than 100 river miles downstream of Vogtle). EA at 61. Furthermore, none of the modeling relied on by the Corps accounted for the additional water withdrawals at Vogtle Units 3 and 4;³⁵ none of the modeling assessed whether the cumulative impacts of restricted dam releases plus withdrawals from Units 3 and 4 might cause 7Q10 flows at the Millhaven gage, downstream of Vogtle, to fall below its 7Q10 standard of 4160 cfs;³⁶ and none of the modeling examined impacts if discharges from Thurmond Dam are reduced to 2600 cfs.³⁷ More to the point for purposes of this case, neither have these cumulative impacts been addressed by the NRC Staff.

³⁵ EA at 78.

³⁶ As recently as September 2009, flows at the Millhaven gage dropped below the 7Q10 for that location of 4160 cfs. *See* Feldman Reply Decl. ¶ 3 and Attachment I (U.S. Geological Survey, National Water Information System data). And that occurred at a time when neither Vogtle Units 3 and 4, nor the Corps' drought contingency plan, were in operation.

³⁷ EA at 46.

NRC Staff and SNC would make much of the fact that in the EA, the Corps concluded that its proposed plan would not have significant impacts.³⁸ But that finding in no way undercuts the JPI's reliance on the EA to support its contention that the *cumulative* impacts of the Corps' proposal and Vogtle Units 3 and 4 could be significant. Individual actions that each may be insignificant may combine to cause significant cumulative impacts.³⁹ The Corps' EA did not evaluate or draw any conclusions about these potential cumulative impacts, because it assumed, erroneously, that Vogtle Units 3 and 4 would not be operational during implementation of its drought contingency measures. EA at 78. That assumption was true for the drought that ended last June, during which the EA apparently was drafted. But it is not true with respect to future droughts, when the proposed contingency plan will be implemented.⁴⁰

C. The Impacts on Water Quality Standards that the JPI Seek to Raise Here Were Not Addressed or Resolved in the ESP Proceeding

The potential impacts on the river flows necessary to maintain applicable water quality standards for dissolved oxygen were not addressed or resolved in the ESP

³⁸ NRC Staff Answer at 19; SNC Answer at 11 n.14.

³⁹ 40 C.F.R. § 1508.7; NUREG-1748, *supra* n.1, at 4.2.52. In this regard, as the U.S. Fish and Wildlife Service noted in commenting on the Corps' October 2009 proposal, restrictions of releases from Thurmond Dam might have minimal impacts on dissolved oxygen, salinity and the like of experienced for only a short period of time, but if those restrictions are repeated over time (which the October 2009 plan, and not the temporary deviation of last winter, contemplates), the impacts which might otherwise be small can aggregate and become significant. 2009 EA, Appx. F at 5 (June 4, 2009 letter from the U.S. Fish and Wildlife Service).

⁴⁰ There is an obvious but explainable disconnect in that the October 2009 EA talks about implementing the drought contingency plan during the "present drought" (although the last drought ended last summer) and also during future droughts. Plainly, the EA was at least partly drafted during the last drought, and the Corps subsequently saw fit to propose its plan for purposes of future droughts after that drought ended. As a result, the EA says that Vogtle Units 3 and 4 will not be operational during implementation of the plan, but since the Corps' plan is prospective and open-ended (rather than applying to the previous drought), it plainly may be implemented after Units 3 and 4 become operational.

proceeding. The NRC Staff's discussion of in stream flows focused exclusively on whether water withdrawals from Units 3 and 4 would exceed 5% of the river flow, a benchmark derived from an EPA regulation.⁴¹ However, EPA promulgated the 5% rule to minimize losses of fish due to *entrainment and impingement* -- *i.e.*, to minimize the number of fish that might become trapped in the plant's cooling water intake structure.⁴² Based on this EPA regulation, NRC Staff concluded that even if river flows at Vogtle fall to 3800 cfs, water withdrawals would be acceptable because they would not exceed the EPA 5% threshold. The Board agreed.⁴³

All that has nothing to do, however, with the issue raised by the JPI. Their contention is not concerned with entrainment and impingement of fish in the cooling water intake structures. It addresses the fact that water withdrawals from Units 3 and 4, especially combined with reduced releases from Thurmond Dam at a rate of 3100 cfs or less, could cause flows in the river to drop below the 7Q10 flows that are necessary to maintain water quality standards (such as for DO) promulgated by the State of Georgia to protect fish. With respect to this issue, the percent of water withdrawal from Units 3 and 4 is not, by itself, a relevant consideration. Feldman Decl. ¶ 11; Reply Decl., ¶ 2. And this issue was simply not addressed or resolved in the ESP proceeding.

⁴¹ See, e.g., NRC Staff Testimony Concerning EC 1.2 at 34 *et seq.* ("The Staff believes that the 5 percent withdrawal requirement is compelled by EPA regulations at 40 CFR § 125.84(b)(3)(i)."); see also First PID, ¶ 4.43; NRC Staff Rebuttal Testimony Concerning EC 1.2 at 27 (Staff considered various flow levels "in its assessment of impacts due to impingement and entrainment. The Staff evaluated impingement and entrainment losses at the Savannah River under average and Drought Level 3 flow conditions . . . and at very-low flows of 2000 cfs and 3000 cfs.")

⁴² *Id.* See also EPA Final Rule, Regulations Concerning Cooling Water Intake Structures for New Facilities, 65 Fed. Reg. 65256, 65277 (Dec. 18, 2001) ("the 5 percent value for rivers and streams reflects an estimate that this would entrain approximately 5 percent of the river or stream's entrainable organisms and a policy judgment that a greater degree of entrainment reflects an inappropriately located facility.")

⁴³ First PID, ¶ 4.44 (*citing* ESP Final Environmental Impact Statement at 5-10, 7-7).

III. THE PETITION IS TIMELY

In light of the foregoing, the petition satisfies all the timeliness requirements.

A. Petitioners Meet the Criteria for Late Filing Under 10 C.F.R. § 2.309(c)

As NRC Staff concedes (Answer at 15), the JPI have filed their petition within 30 days of the new information's availability -- *i.e.*, within 30 days of the publication of the Corps' October 2009 proposal -- as required by the Board's initial prehearing order,⁴⁴ and as required by § 2.309(f)(2). Contrary to the assertions of NRC Staff and SNC, the JPI also meet the criteria set forth in § 2.309(c).

For all the reasons discussed above, there is good cause for the JPI's "late" filing because the Corps' October 2009 proposal is indeed new information that could not have been raised previously. §2.309(c)(1)(i).⁴⁵ As NRC Staff and SNC note, this "good cause factor" is entitled to the most weight. NRC Staff Answer at 13; SNC Answer at 13. Each of the petitioners has standing and the petition demonstrates how their interests could be adversely affected. §2.309(c)(1)(ii) and (iii). Contrary to NRC Staff's assertion (Answer at 13-14), the JPI do not have other means to protect the interests they seek to assert here. The fact that JPI could submit comments to the Corps of Engineers on its proposal would not adequately protect the interests they seek to protect in this proceeding. The JPI have an interest in ensuring that -- whatever the Corps may do, or however adequate its NEPA analysis may be to support its action -- the NRC adequately considers the impacts of *its* actions under NEPA. Even if the Corps properly took account of the cumulative impacts

⁴⁴ *Southern Nuclear Operating Co.* (Vogtle Electric Generating Plant, Units 3 and 4), ML083370608 (Dec. 2, 2008) at 6 n.6.

⁴⁵ SNC asserts (Answer at 13) that the JPI could have raised this issue because the Corps announced "over a year ago" that it was temporarily reducing the Drought Level 3 discharge from Thurmond Dam to 3100 cfs. For the reasons discussed above, that earlier Corps proposal differed in significant and material respects from the October 2009 proposal.

of its proposal to manage discharges from the dam, that would not diminish the importance of the JPI's separate and distinct interest in ensuring that the NRC accounts for the cumulative impacts of the massive amounts of water that Vogtle Units 3 and 4 would remove from the river. The NRC Staff's concern that granting the JPI's petition "would necessarily broaden the issues for litigation" (Answer at 14) is an unfortunate objection coming from a government agency charged with protecting the public interest. If that criterion were dispositive, than no petitioner could raise any issue, no matter how important or relevant to the Commission's decision making. Finally, since the proposed contention does raise an important and relevant issue, it is apparent that the JPI -- the only parties to raise the issue -- would assist in the development of a sound record.

B. The JPI Satisfy the Criteria for Late-Filed Contentions Under § 2.309(f)

SNC and NRC Staff both assert that the JPI have not satisfied the criteria of §2.309(f) (SNC Answer at 11-12; NRC Staff Answer at 20). They claim that the JPI's proposed contention was resolved in the ESP proceeding, presents no new information, is outside the scope of this proceeding, is not material to the findings the Board must make, and therefore does not create a dispute of fact or laws as required by § 2.309(f)(1)(iii), (iv) and (v). For the reasons discussed above, SNC and NRC Staff are wrong. The proposed contention raises issues that were not resolved in the ESP proceeding, identifies new information, and are material to the findings -- *i.e.*, cumulative impacts concerning reasonably foreseeable scenarios -- that the Board must address under NEPA. The contention raises a genuine dispute of fact and law. As SNC recites (Answer at 5), any environmental contention raised in this proceeding must be based either on "(i) an issue that was not resolved in the ESP or (ii) 'significant new information' relating to an issue

that was resolved in the ESP.” (citing 10 C.F.R. §52.39(c)(1)(v) and 51.107(b)(2),(3)). For the reasons discussed above and in the JPI’s Petition, those criteria have been met, and the proposed contention is admissible in this proceeding.

Apparently intent on catching the JPI coming and going, SNC argues that the JPI’s Petition manages to be both too late and too early. Answer at 3 and at 12 n.55. The Petition was filed within 30 days after the new information became available, as directed by the Board in its December 28, 2008 order. Accordingly, the JPI believe their petition was filed neither too late, nor too early.

CONCLUSION

For all the foregoing reasons and those set forth in the Petition and accompanying declarations, the JPI’s Petition should be granted and their proposed contention admitted.

Dated: December 4, 2009

Respectfully submitted,

/Signed (electronically) by Barry S. Neuman/

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ATTACHMENT A



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POSTED: 10:44 am EDT June 10, 2009
UPDATED: 5:37 pm EDT June 10, 2009

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ATLANTA -- Georgia lifted tough outdoor water restrictions on Wednesday and declared an end to the drought that has gripped much of the state since late 2007.

"This drought has ended," Georgia Environmental Protection Division Director Carol Couch said. "Our water supplies are flush. Our rivers and streams have rebounded."

At a meeting of the State Drought Response Committee, Couch said that Georgia is moving to non-drought water rules. Homeowners can now water their lawns three days a week, based on whether they have an odd or even street addresses, between the hours of 10 a.m. and 4 p.m.

Heavy rainfall in recent months has helped Georgia and the rest of the Southeast emerge from the worst drought categories. Just a year ago, more than 40 percent of the region was mired in drought.

The state's climatologist said Wednesday that Georgia has seen the second wettest spring in 115 years.

Couch lauded Georgians in the 55 North Georgia counties under the drought restrictions for exceeding the state goal of a 10 percent drop in water consumption. Water use in those counties dropped by an average of 15 percent in the past 2 1/2 years with the state under Level 4 drought restrictions.

Those restrictions prohibit most types of outdoor residential water use although some counties received exemptions.

Couch on Wednesday said that Georgians need to remain vigilant about water conservation to prevent a repeat of the parched conditions.

Georgia Conservancy President Pierre Howard said Wednesday he remains concerned that the state has not done enough to encourage long-term water conservation efforts and could end up back in a dire drought conditions without changes.

"I don't feel like Georgia has been aggressive enough," the former Democratic lieutenant governor said. "We need to start acting like the grown up state that we are."

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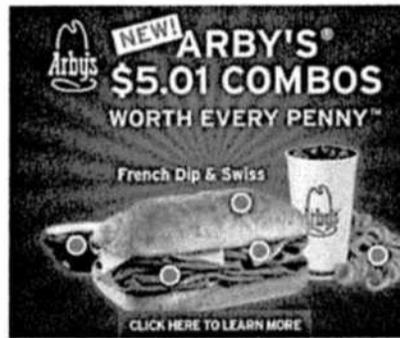


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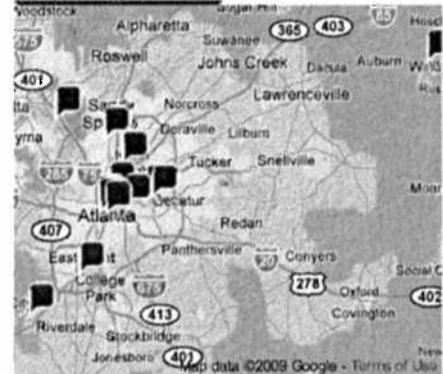
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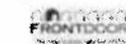


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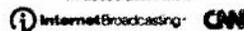
\$275 & up – Europe from Atlanta, Plus \$100 OFF Coupon*
 Lufthansa

\$54 & up -- Sale from Atlanta, into March*
 AirTran Airways

\$135-\$145 -- Savannah 'Gold List' Hotel in Historic District
 Mansion on Forsyth Park

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ATTACHMENT B



Nuclear Regulatory Commission
Exhibit # - NRC000039-00-BD01
Docket # - 05200011
Identified: 03/16/2009

Admitted: 03/16/2009
Rejected:

Withdrawn:
Stricken:

NRC000039

**DRAFT
ENVIRONMENTAL ASSESSMENT
AND
FINDING OF NO SIGNIFICANT IMPACT**

**TEMPORARY DEVIATION
DROUGHT CONTINGENCY PLAN
SAVANNAH RIVER BASIN**



**US ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT**

October 2008

1.1.3. General Objectives

The objectives of the Proposed Action are:

- ⇒ Savannah River Basin – Reduce discharges from the Corps’ reservoirs on the Savannah River Basin to maintain the conservation pool as long as possible. This would delay the time when Level 4 conditions would occur. This approach would preserve water supply for as many users as possible and minimize negative impacts to other users adversely affected by this action. Also, implementation of the proposed action would aid in the recovery of the system reservoirs by allowing more storage to be captured during this cool weather season.
- ⇒ Environmental Compliance - comply with all applicable environmental laws, regulations, and policies

1.2. PURPOSE AND NEED

The Savannah River Basin has been experiencing a drought since early 2006. Rainfall and resulting stream flow have been particularly low, causing the reservoirs to drop faster than during previous droughts. The SRBDCP was intended to be a dynamic document which could be changed as new drought periods occur. The purpose for the temporary reduction in flow from Thurmond to 3,100 cfs during the cooler months of November 1, 2008 through February 28, 2009 is to maintain the conservation pools within the Savannah System through at least 2011, and to decrease the recovery time to refill the reservoirs.

1.3. SCOPE

The scope of this EA is limited to assessing the potential environmental and socio-economic effects resulting from implementing the Proposed Action and the No Action Alternative (NAA). After eliminating alternatives that are not considered feasible or effective, the potential environmental impacts associated with the NAA are compared to the Proposed Action.

1.4. STUDY METHODOLOGY

Water managers in Georgia and South Carolina jointly performed a volume analysis of the storage remaining within the conservation pools of the three Corps' managed lakes on the Savannah River. They then considered several different drought hydrologic inflow and outflow scenarios. They performed computer modeling that focused on how long the conservation storage could be preserved within the three-lake system.

The States initially considered several hydrologic and operating scenarios. Among other factors, those scenarios reflected the range of potential inflow amounts that could be expected in the basin. Those alternatives and hydrologic conditions were refined after more data became available from the National Weather Service and lake levels declined over the course of the 2008 summer months. The hydrologic conditions they ultimately chose as inputs for the analysis were based on the 2007 inflows with a 10% reduction.

The goal of the alternatives analysis was to identify an operating approach that would allow the conservation storage within the lakes to decline at a slower rate, while still balancing the

ATTACHMENT C



Nuclear Regulatory Commission
Exhibit # - SNC000053-00-BD01
Docket # - 05200011
Identified: 03/16/2009

Admitted: 03/16/2009
Rejected:

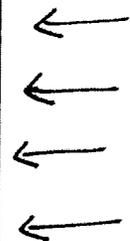
Withdrawn:
Stricken:

Exhibit SNC 000053

Daily Average Discharge
USGS 021973269
Savannah River near Waynesboro, Georgia

Discharge Average ---

08/30/2008	6.60 ^P	4,500 ^P
08/31/2008	6.58 ^P	4,490 ^P
09/01/2008	6.37 ^P	4,270 ^P
09/02/2008	6.32 ^P	4,220 ^P
09/03/2008	6.33 ^P	4,230 ^P
09/04/2008	6.28 ^P	4,180 ^P
09/05/2008	6.28 ^P	4,180 ^P
09/06/2008	6.29 ^P	4,190 ^P
09/07/2008	6.41 ^P	4,310 ^P
09/08/2008	6.34 ^P	4,240 ^P
09/09/2008	6.32 ^P	4,220 ^P
09/10/2008	6.40 ^P	4,300 ^P
09/11/2008	6.41 ^P	4,300 ^P
09/12/2008	6.38 ^P	4,280 ^P
09/13/2008	6.35 ^P	4,250 ^P
09/14/2008	6.39 ^P	4,290 ^P
09/15/2008	6.32 ^P	4,220 ^P
09/16/2008	6.26 ^P	4,160 ^P
09/17/2008	6.31 ^P	4,210 ^P
09/18/2008	6.17 ^P	4,070 ^P
09/19/2008	6.14 ^P	4,040 ^P
09/20/2008	6.11 ^P	4,010 ^P
09/21/2008	6.12 ^P	4,020 ^P
09/22/2008	6.14 ^P	4,040 ^P



Discharge Average ---

09/23/2008	6.13 ^P	4,030 ^P	←
09/24/2008	5.97 ^P	3,880 ^P	←
09/25/2008	5.90 ^P	3,800 ^P	←
09/26/2008	5.86 ^P	3,770 ^P	←
09/27/2008	5.91 ^P	3,810 ^P	←
09/28/2008	5.90 ^P	3,810 ^P	←
09/29/2008	5.93 ^P	3,830 ^P	←
09/30/2008	6.05 ^P	3,950 ^P	←
10/01/2008	6.14 ^P	4,180 ^P	
10/02/2008	6.12 ^P	4,160 ^P	
10/03/2008	6.04 ^P	4,080 ^P	
10/04/2008	6.14 ^P	4,180 ^P	
10/05/2008	6.09 ^P	4,130 ^P	
10/06/2008	6.01 ^P	4,050 ^P	←
10/07/2008	6.02 ^P	4,060 ^P	←
10/08/2008	6.00 ^P	4,040 ^P	←
10/09/2008	6.76 ^P	4,800 ^P	
10/10/2008	7.13 ^P	5,170 ^P	
10/11/2008	7.02 ^P	5,050 ^P	
10/12/2008	7.02 ^P	5,050 ^P	
10/13/2008	6.51 ^P	4,540 ^P	
10/14/2008	6.41 ^P	4,440 ^P	
10/15/2008	6.38 ^P	4,410 ^P	
10/16/2008	6.27 ^P	4,300 ^P	

Discharge Average ---

10/17/2008	6.12 ^P	4,150 ^P
10/18/2008	6.18 ^P	4,210 ^P
10/19/2008	6.19 ^P	4,220 ^P
10/20/2008	6.25 ^P	4,280 ^P
10/21/2008	6.10 ^P	4,140 ^P
10/22/2008	6.13 ^P	4,160 ^P
10/23/2008	6.33 ^P	4,360 ^P
10/24/2008	6.56 ^P	4,590 ^P
10/25/2008	7.04 ^P	5,080 ^P
10/26/2008	7.48 ^P	5,530 ^P
10/27/2008	7.00 ^P	5,030 ^P
10/28/2008	6.76 ^P	4,790 ^P
10/29/2008	6.55 ^P	4,580 ^P
10/30/2008	6.33 ^P	4,360 ^P
10/31/2008	6.24 ^P	4,270 ^P
11/01/2008	6.23 ^P	4,270 ^P
11/02/2008	6.10 ^P	4,140 ^P
11/03/2008	6.19 ^P	4,230 ^P
11/04/2008	6.28 ^P	4,310 ^P
11/05/2008	6.19 ^P	4,220 ^P
11/06/2008	6.14 ^P	4,180 ^P
11/07/2008	6.06 ^P	4,100 ^P
11/08/2008	6.48 ^P	4,510 ^P
11/09/2008	6.06 ^P	4,100 ^P

Discharge Average ---

11/10/2008	6.00 ^P	4,050 ^P
11/11/2008	6.04 ^P	4,080 ^P
11/12/2008	6.16 ^P	4,200 ^P
11/13/2008	6.04 ^P	4,080 ^P
11/14/2008	6.78 ^P	4,820 ^P
11/15/2008	9.02 ^P	7,220 ^P
11/16/2008	10.09 ^P	8,470 ^P
11/17/2008	9.41 ^P	7,680 ^P
11/18/2008	8.80 ^P	6,980 ^P
11/19/2008	7.40 ^P	5,450 ^P
11/20/2008	6.89 ^P	4,920 ^P
11/21/2008	6.69 ^P	4,720 ^P
11/22/2008	6.42 ^P	4,460 ^P
11/23/2008	6.39 ^P	4,420 ^P
11/24/2008	6.32 ^P	4,350 ^P
11/25/2008	6.57 ^P	4,600 ^P
11/26/2008	6.29 ^P	4,330 ^P
11/27/2008	6.30 ^P	4,330 ^P
11/28/2008	6.28 ^P	4,320 ^P
11/29/2008	6.21 ^P	4,250 ^P
11/30/2008	7.11 ^P	5,150 ^P
12/01/2008	9.61 ^P	7,930 ^P
12/02/2008	11.54 ^P	10,200 ^P
12/03/2008	9.40 ^P	7,660 ^P



Discharge Average ---

12/04/2008	8.08 ^P	6,180 ^P
12/05/2008	7.50 ^P	5,560 ^P
12/06/2008	6.74 ^P	4,770 ^P
12/07/2008	6.50 ^P	4,530 ^P
12/08/2008	6.31 ^P	4,340 ^P
12/09/2008	6.11 ^P	4,150 ^P
12/10/2008	6.20 ^P	4,230 ^P
12/11/2008	7.85 ^P	5,960 ^P
12/12/2008	12.89 ^P	12,000 ^P
12/13/2008	15.93 ^P	16,300 ^P
12/14/2008	14.64 ^P	14,400 ^P
12/15/2008	11.44 ^P	10,100 ^P
12/16/2008	8.51 ^P	6,660 ^P
12/17/2008	7.57 ^P	5,630 ^P
12/18/2008	7.00 ^P	5,030 ^P
12/19/2008	7.31 ^P	5,350 ^P
12/20/2008	6.91 ^P	4,940 ^P
12/21/2008	6.81 ^P	4,840 ^P
12/22/2008	6.67 ^P	4,700 ^P
12/23/2008	6.43 ^P	4,460 ^P
12/24/2008	6.49 ^P	4,520 ^P
12/25/2008	6.41 ^P	4,440 ^P
12/26/2008	6.37 ^P	4,400 ^P
12/27/2008	6.47 ^P	4,500 ^P

Discharge Average ---

12/28/2008	6.53 ^P	4,560 ^P
12/29/2008	6.51 ^P	4,540 ^P
12/30/2008	6.51 ^P	4,540 ^P
12/31/2008	6.44 ^P	4,470 ^P
01/01/2009	6.57 ^P	4,470 ^P
01/02/2009	6.28 ^P	4,180 ^P
01/03/2009	6.28 ^P	4,180 ^P
01/04/2009	6.56 ^P	4,460 ^P
01/05/2009	6.39 ^P	4,290 ^P
01/06/2009	6.61 ^P	4,520 ^P
01/07/2009	7.20 ^P	5,140 ^P
01/08/2009	6.42 ^P	4,320 ^P
01/09/2009	6.27 ^P	4,170 ^P
01/10/2009	6.21 ^P	4,110 ^P
01/11/2009	6.30 ^P	4,200 ^P
01/12/2009	6.70 ^P	4,600 ^P
01/13/2009	6.63 ^P	4,530 ^P
01/14/2009	6.26 ^P	4,160 ^P
01/15/2009	6.37 ^P	4,270 ^P
01/16/2009	6.16 ^P	4,060 ^P
01/17/2009	6.05 ^P	3,950 ^P
01/18/2009	6.04 ^P	3,940 ^P
01/19/2009	6.16 ^P	4,060 ^P
01/20/2009	6.20 ^P	4,100 ^P

←
←
←
←

Discharge Average ---

01/21/2009	6.08 ^P	3,980 ^P
01/22/2009	6.09 ^P	3,990 ^P
01/23/2009	6.21 ^P	4,110 ^P
01/24/2009	6.18 ^P	4,210 ^P
01/25/2009	6.16 ^P	4,200 ^P
01/26/2009	6.09 ^P	4,130 ^P
01/27/2009	6.10 ^P	4,140 ^P
01/28/2009	6.05 ^P	4,090 ^P
01/29/2009	6.14 ^P	4,180 ^P
01/30/2009	6.24 ^P	4,270 ^P
01/31/2009	6.05 ^P	4,090 ^P
02/01/2009	5.94 ^P	3,980 ^P
02/02/2009	6.81 ^P	4,840 ^P
02/03/2009	6.57 ^P	4,610 ^P
02/04/2009	6.37 ^P	4,400 ^P
02/05/2009	6.17 ^P	4,210 ^P



**UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
Before the Licensing Board**

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

In the Matter of	)	Docket Nos. 52-025-COL and
SOUTHERN NUCLEAR OPERATING CO.	)	52-026-COL.
(Combined Operating License, Vogtle Electric	)	ASLBP No. 09-873-01-COL-BD01
Generating Plant, Units 3 and 4)	)	December 4, 2009

REPLY DECLARATION OF PAULA L. FELDMAN, P.E.

1. In my previous Declaration dated October 29, 2009 (at ¶14), I noted that the 7Q10 flow established by the State of Georgia at the Jackson gage is 4070 cfs. The NRC Staff points out that the Jackson gage, which is located only 6 miles upstream of the Vogtle site, was taken out of service in 2002. Nonetheless, the 7Q10 flow for that location was determined based upon 47 years of data collected between 1955 and 2002¹, and is still instructive as to the flows that are necessary in and around the Vogtle plant to maintain water quality standards. The Waynesboro gage referred to by NRC Staff has been in service for only a few years, and therefore not enough data has been collected yet to determine a 7Q10 flow at that location. However, since that the 7Q10 flow is 4070 cfs at the Jackson gage, the 7Q10 flow at Waynesboro is almost certainly at least as high, if not higher than 4070 cfs due to any groundwater infiltration or surface runoff that might recharge the river between those two locations. As the Corps' 2009 Environmental Assessment shows, 7Q10 flows increase as one moves further downstream. So, for

¹ My prior Declaration (note 8) mistakenly stated that these data covered the period 1953 to 2006.

example, the 7Q10 flow at the Augusta gage, upstream of Vogtle, is 3800 cfs; at Jackson, closer to but still upstream of Vogtle, it is 4070 cfs; at the Millhaven gage, which is the closest downstream gage to Vogtle, it is 4160 cfs and at Clyo, still further downstream, it is 4710 cfs. EA at 47 (7Q10 for Augusta, Millhaven, and Clyo).

2. NRC Staff claims that, by assuming a flow of 3800 cfs around the Vogtle plant rather than the higher value of 4070 cfs, their impact analysis was conservative. NRC Staff's Answer at 24, footnote 21. That assertion reflects the NRC Staff's continued confusion between the analysis that they performed during the ESP proceeding (which simply calculated the percent of water withdrawn by the Vogtle plant) and the analysis which they did not conduct, but which is necessary to determine the impacts on water quality. If one wants to calculate the percent of river water that the Vogtle plant will withdraw, as the NRC did, then it is undoubtedly more conservative to assume a river flow of 3800 cfs rather than 4070 cfs -- the lower the assumed river flow, the greater the percentage of river water withdrawn by the Vogtle plant. But as discussed in my previous Declaration, the percent of river water withdrawn by the Vogtle plant simply does not tell us whether those withdrawals (alone or in combination with restricted dam releases) will adversely affect the river, its resources (including fish) and its designated uses (which include fishing). To assess those impacts, one must determine whether the plants withdrawals (alone or in combination with restricted dam releases) will cause river flows to decrease below the applicable 7Q10 flows -- the flow rates at various locations along the river that are necessary to sustain water quality standards and therefore to protect fish. The point is that any withdrawals from the river that contribute to reducing flows below the applicable 7Q10 (which at the Vogtle plant is equal to or greater than

4070 cfs) will threaten water quality -- whether the Vogtle withdrawals constitute one percent or 10 percent of the river flow.

3. This is why the Corps' 2009 proposal is significant. For example, at any given water temperature, reducing river flows can reduce dissolved oxygen levels by reducing water turbulence and mixing. There has been no analysis by the NRC staff as to whether water withdrawals combined with the proposed restrictions on releases from Thurmond Dam may cause river flows to be reduced to levels that threaten or prevent attainment and maintenance of dissolved oxygen and other water quality standards at or downstream of the Vogtle plant. For example, data reported by the USGS indicates that as recently as September 18, 2009, the river flow at the Millhaven gage (which is the USGS gage closest to Vogtle downstream of the plant) dropped below the requisite 7Q10 of 4160 cfs. See Attachment 1 hereto.² That occurred at a time when neither Vogtle Units 3 and 4 are operational, and the Corps was not restricting releases from Thurmond Dam to 3100 cfs. There has been no analysis to determine if the requisite flow of 4160 cfs at the Millhaven gage would be maintained with dam releases restricted to 3100 cfs and Vogtle Units 3 and 4 in operation.

I declare under penalty of perjury pursuant to 28 U.S.C. § 1746 that the foregoing is true and correct to the best of my knowledge, information and belief.

Dated: December 4, 2009



Paula L. Feldman, P.E.

² U.S. Geological Survey, National Water Information System web interface, USGS 02197500 Savannah River at Burton's Ferry Bridge Near Millhaven Georgia (tabular format data), available at http://waterdata.usgs.gov/nwis/dv?referred_module=sw&site_no=02197500. (last visited 12/4/09).

ATTACHMENT 1



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National Water Information System: Web Interface

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Data Category: Geographic Area:

News - updated November 2009

USGS 02197500 SAVANNAH R AT BURTONS FERRY BR NR MILLHAVEN, GA

PROVISIONAL DATA SUBJECT TO REVISION

Available data for this site



This monitoring station is funded in cooperation with the South Carolina Department of Health and Environmental Control.

Available Parameters	Period of Record	Output format	Begin date	End date	
<input type="checkbox"/> All 2 Available Parameters for this site		<input type="radio"/> Graph	<input type="text" value="2009-09-01"/>	<input type="text" value="2009-09-30"/>	<input type="button" value="GO"/>
<input checked="" type="checkbox"/> 00045 Precipitation (Sum)	1985-10-07 2009-12-03	<input type="radio"/> Graph w/ stats			
<input checked="" type="checkbox"/> 00060 Discharge (Mean)	1939-10-01 2009-12-03	<input type="radio"/> Graph w/ meas			
		<input checked="" type="radio"/> Table			
		<input type="radio"/> Tab-separated			

Summary of all available data for this site

Date	Precipitation total, inches (Sum)	Discharge, ft ³ /s (Mean)
09/01/2009	0.00 ^P	4,960 ^P
09/02/2009	0.00 ^P	4,800 ^P
09/03/2009	0.00 ^P	4,620 ^P
09/04/2009	0.00 ^P	4,450 ^P
09/05/2009		

	0.00 ^P	4,370 ^P
09/06/2009	0.00 ^P	4,320 ^P
09/07/2009	0.00 ^P	4,310 ^P
09/08/2009	0.00 ^P	4,340 ^P
09/09/2009	0.19 ^P	4,320 ^P
09/10/2009	0.03 ^P	4,390 ^P
09/11/2009	0.00 ^P	4,430 ^P
09/12/2009	0.00 ^P	4,450 ^P
09/13/2009	0.00 ^P	4,410 ^P
09/14/2009	0.00 ^P	4,340 ^P
09/15/2009	0.00 ^P	4,360 ^P
09/16/2009	0.00 ^P	4,310 ^P
09/17/2009	0.16 ^P	4,160 ^P
09/18/2009	0.04 ^P	4,130 ^P
09/19/2009	0.00 ^P	4,410 ^P
09/20/2009	0.04 ^P	4,630 ^P
09/21/2009	0.00 ^P	4,720 ^P
09/22/2009	0.00 ^P	4,770 ^P
09/23/2009	0.00 ^P	4,940 ^P
09/24/2009	0.00 ^P	4,810 ^P
09/25/2009	0.00 ^P	4,660 ^P
09/26/2009	0.30 ^P	4,490 ^P
09/27/2009	0.01 ^P	4,730 ^P
09/28/2009	0.00 ^P	4,850 ^P
09/29/2009	0.00 ^P	4,650 ^P
09/30/2009	0.00 ^P	4,480 ^P



Explanation

P	Provisional data subject to revision.
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[U.S. Department of the Interior](#) | [U.S. Geological Survey](#)
Title: USGS Surface-Water Daily Data for the Nation
URL: <http://waterdata.usgs.gov/nwis/dv?>



Page Contact Information: [South Carolina Water-Data Support Team](#)
Page Last Modified: 2009-12-04 11:37:21 EST
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**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 F. Jackson**

In the Matter of	)	Docket Nos. 52-025 COL and
SOUTHERN NUCLEAR OPERATING CO.	)	52-026-COL
(Combined Operating License, Vogtle Electric	)	ASLBP No. 09-873-01-COL-BD01
Generating Plant, Units 3 and 4)	)	December 4, 2009
)	

CERTIFICATE OF SERVICE

I hereby certify that a copy of the foregoing REPLY IN SUPPORT OF PETITION TO INTERVENE AND ADMIT NEW CONTENTION with ATTACHMENTS A, B, and C annexed thereto and REPLY DECLARATION OF PAULA L. FELDMAN, P.E with ATTACHMENT 1 annexed thereto have been served upon the following persons by Electronic Information Exchange:

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Dated: December 4, 2009

/Signed (electronically) by Barry S. Neuman/

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