

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)	
Southern Nuclear Operating Company, Inc.)	Docket Nos. 52-025-COL &
Combined License for Vogtle Electric)	52-026-COL
Generating Plant Units 3 and 4)	

**MOTION TO REOPEN THE RECORD AND ADMIT CONTENTION REGARDING
THE SAFETY AND ENVIRONMENTAL IMPLICATIONS OF
THE NUCLEAR REGULATORY COMMISSION TASK FORCE REPORT ON
THE FUKUSHIMA DAI-ICHI ACCIDENT**

I. INTRODUCTION

Pursuant to 10 C.F.R. §§ 2.309 and 2.326, the Blue Ridge Environmental Defense League (“BREDL”) hereby moves to reopen the record in this proceeding to admit a new contention challenging the adequacy of the “Final Supplemental Environmental Impact Statement for Combined Licenses (COLs) for Vogtle Electric Generating Plant Units 3 and 4” (March 2011) (the “EIS”) on the basis that it fails to address the extraordinary environmental and safety implications of the findings and recommendations raised by the Nuclear Regulatory Commission’s Fukushima Task Force (the “Task Force”) in its report, “Recommendations for Enhancing Reactor Safety in the 21st Century: The Near-Term Task Force Review of Insights From the Fukushima Dai-ichi Accident” (July 12, 2011) (“Task Force Report”). BREDL respectfully submits that reopening the record and admitting the new contention is necessary to ensure that the Nuclear Regulatory Commission (“NRC” or the “Commission”) fulfills its non-discretionary duty under the National Environmental Policy Act (“NEPA”) to consider the new

and significant information set forth in the Task Force Report before it issues a Combined License (“COL”) for Vogtle Units 3 and 4.

This Motion is supported by the Declarations by Dr. Arjun Makhijani, Dr. Ross McCluney and Rev. Charles N. Utley which are attached and incorporated by reference herein. The Motion is also supported by a Certificate Required by 10 C.F.R. § 2.323(b).

II. BACKGROUND

On November 17, 2008, BREDL and other Intervenors filed a petition to intervene in the Plant Vogtle COL proceeding. A licensing board granted the petition, and admitted one contention for hearing. After numerous filings, the contents of which are not relevant to this Motion, on May 19, 2010, the board dismissed the contention and closed the record. Then, on August 12, 2010, Blue Ridge Environmental Defense League, the Center for a Sustainable Coast, and Georgia Women’s Action for New Directions submitted another motion to the licensing board, seeking admission of a new contention. On November 30, 2010, the board denied the motion and did not reopen the record. On December 9, 2010 the groups appealed the board’s decision to the Commission. The appeal is still pending.¹

III. DISCUSSION

Until a COL has been issued, the Commission retains jurisdiction to reopen the record for consideration of a new contention. *Private Fuel Storage, L.L.C.* (Independent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 24 (2006). Nineteen overlapping factors, set forth in three regulations, govern motions to reopen and admit new contention. See 10 C.F.R. §§ 2.309(c), 2.309(f), and 2.326; see also *Entergy Nuclear Vermont Yankee, L.L.C. and Entergy Nuclear*

¹ In the event the pending appeal is sufficient to reopen the record, the discussion in this Motion regarding 10 C.F.R. § 2.326 may be disregarded. The new contention should be admitted because they satisfies the requirements of 10 C.F.R. §§ 2.309 (c) and (f), as discussed in this Motion and the accompanying contention.

Operations, Inc. (Vermont Yankee Nuclear Power Station), __ NRC __ at Attachment A (Oct. 28, 2010). This Motion and the accompanying new contention satisfy each of these factors.

In addition to satisfying the requirements for a Motion to Reopen, to be admitted for hearing, a new contention must also satisfy the six general requirements set forth in 10 C.F.R. § 2.309(f)(1), and the timeliness requirements set forth in either 10 C.F.R. § 2.309(f)(2) (governing timely contention) or 10 C.F.R. § 2.309(c) (governing non-timely contention). As provided in the accompanying contention, each of the requirements set forth in 10 C.F.R. § 2.309(f)(1) is satisfied. Furthermore, BREDL maintains that this Motion and accompanying contention are timely, and the requirements of 10 C.F.R. § 2.309(f)(2) are also satisfied. In the event the Commission determines that this Motion and the accompanying contention are not timely, however, BREDL also maintain that the requirements of 10 C.F.R. § 2.309(c) are satisfied.

A. This Motion Satisfies the Standards For Reopening a Closed Hearing Record Set Forth in 10 C.F.R. § 2.326.

Pursuant to 10 C.F.R. § 2.326, a motion to reopen a closed record must be timely, address a significant environmental issue, demonstrate that a materially different result would have been likely had the newly proffered evidence been considered initially, and be accompanied by an expert declaration. This Motion satisfies the requirements of 10 C.F.R. § 2.326.

1. The Motion is Timely.

The NRC has adopted a three-part standard for assessing timeliness. *See* 10 C.F.R. § 2.309(f)(2). The Motion and accompanying contention are timely.

The information upon which the Motion and accompanying contention are based was not previously available.

The availability of material information “is a significant factor in a Board’s determination of whether a motion based on such information is timely filed.” *Houston Lighting & Power Co.*

(South Texas Project, Units 1 & 2), LBP-85-19, 21 NRC 1707, 1723 (1985) (internal citations omitted). This Motion and the accompanying contention are based upon information contained within the Task Force Report, which was not released until July 12, 2011. Before issuance of the Task Force Report, the information material to the contention was simply unavailable.

The information upon which the Motion and accompanying contention are based is materially different than information previously available.

Only five months ago, a nuclear accident occurred at the Fukushima Dai-ichi Nuclear Power Plant. In the wake of the accident, the Task Force was established and instructed by the NRC to provide:

A systematic and methodical review of [NRC] processes and regulations to determine whether the agency should make additional improvements to its regulatory system and to make recommendations to the Commission for its policy direction, in light of the accident at the Fukushima Dai-ichi Nuclear Power Plant.

Task Force Report at vii. In response to that directive, the Task Force made twelve “overarching” recommendations to “strengthen the regulatory framework for protection against natural disasters, mitigation and emergency preparedness, and to improve the effectiveness of NRC’s programs.” *Id.* at viii. In these recommendations the Task Force, for the first time since the Three Mile Island accident occurred in 1979, fundamentally questioned the adequacy of the current level of safety provided by the NRC’s program for nuclear reactor regulation.

In the EIS, the Commission assumed that compliance with existing NRC safety regulations was sufficient to ensure that the environmental impacts of accidents were acceptable. The information in the Task Force Report refutes this assumption and is materially different from the information upon which the EIS was based. *See* attached Makhijani Declaration.

The Motion and accompanying contention are timely based on the availability of the new information.

BREDL has submitted this Motion and accompanying contention in a timely fashion. The NRC customarily recognizes as timely contention that are submitted within thirty (30) days of the occurrence of the triggering event. *Shaw Areva MOX Services, Inc.* (Mixed Oxide Fuel Fabrication Facility), LBP-08-10, 67 NRC 460, 493 (2008). The Task Force Report, upon which the contention is based, was published on July 12, 2011. Because they were filed within thirty (30) days of publication of the Task Force Report, this Motion and accompanying contention are timely.

2. The Motion Addresses a Significant Environmental Issue.

As stated in the Intervenors' contention and in the attached Makhijani Declaration at pars. 7-9, the environmental issues raised in this contention are significant and indeed they are exceptionally grave because the Task Force Report questions the adequacy of the NRC's current regulatory program to protect public health and safety and makes major recommendations for upgrades to the program.

3. The Motion Demonstrates That a Materially Different Result Would Be Likely Had the Newly Proffered Evidence Been Considered Initially.

As discussed in pars. 10-25 of the attached Makhijani Declaration, a materially different result would be likely had the NRC considered the new and significant information set forth in Task Force Report in its environmental analysis for the Vogtle COL. In particular, if severe accident mitigation alternatives ("SAMAs") were imposed as mandatory measures – as recommended by the Task Force – the outcome of the EIS could be affected in two major respects. First, the environmental analysis would have to consider the implication of the Task Force Review that compliance with current NRC safety requirements does not adequately protect

public health and safety from severe accidents and their environmental effects. Second, for reactors that are unable to comply with new mandatory requirements, it could result in the denial of licenses. Third, the cost of adopting mandatory measures necessary to significantly improve the safety of currently operating reactors and proposed new reactors is likely to be significant.

4. The Declarations of Makhijani, McCluney and Utley Fully Support and Set Forth the Factual Bases for This Motion.

As required by 10 C.F.R. § 2.326(b), this Motion is supported by a declaration that sets forth the factual and technical bases for Intervenors' claims that the criteria of 10 C.F.R. § 2.326(a) have been satisfied. *See* Declarations of Makhijani, McCluney and Utley, As demonstrated in his declaration, Dr. Makhijani is a highly qualified expert who is familiar with the Task Force Report. As demonstrated in his declaration, Dr. McCluney is a highly qualified expert in seismic-flooding issues raised in the Task Force Report. As demonstrated in his declaration, Rev. Utley is a highly qualified expert in environmental justice, one of the issues to be analyzed in supplements to the Vogtle environmental documents. Moreover, the information in the Declarations meets the NRC's standard for admissibility of evidence because it is relevant, material, reliable, and not repetitious. 10 C.F.R. § 2.337(a). Additionally, the Motion relies on the Task Force Report itself, which was prepared by highly qualified members of the NRC staff. *See* William Magwood, Briefing on the Progress of the Task Force Review of NRC Processes and Regulations Following the Events in Japan, p. 5, lines 9-13 (May 12, 2011) ("[We] brought our A-team to this task. You know, this agency has the best expertise in nuclear safety in the world, bar none. And we've brought our best and brightest to this work . . .").

B. The New Contention Satisfies the Standards For Non-Timely Contention Set Forth in 10 C.F.R. § 2.309(c).

A motion to reopen which relates to a contention not previously in controversy among the parties must also satisfy the requirements for nontimely contention set forth in 10 C.F.R. § 2.309(c). 10 C.F.R. § 2.326(d). Under § 2.309(c), determination on any “nontimely” filing of a contention must be based on a balancing of eight factors, the most important of which is “good cause, if any, for the failure to file on time.” *Crow Butte Res., Inc.* (North Trend Expansion Project), LBP-08-6, 67 NRC 241 (2008). As set forth below, each of the factors favors admission of the accompanying contention.

1. Good Cause.

Good cause for the late filing is the first, and most important element of 10 C.F.R. § 2.309(c)(1). *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-00-02, 51 NRC 77, 79 (2000). Newly arising information has long been recognized as providing the requisite “good cause.” See *Consumers Power Co.* (Midland Plant, Units 1 & 2), LBP-82-63, 16 NRC 571, 577 (1982), citing *Indiana & Michigan Elec. Co.* (Donald C. Cook Nuclear Plant, Units 1 & 2), CLI-72-75, 5 AEC 13, 14 (1972). Thus, the NRC has previously found good cause where (1) a contention is based on new information and, therefore, could not have been presented earlier, and (2) the intervenor acted promptly after learning of the new information. *Texas Utils. Elec. Co.* (Comanche Peak Steam Electric Station, Units 1 & 2), CLI-92-12, 36 NRC 62, 69-73 (1992).

As noted above, the information on which this Motion and accompanying contention are based is taken from the Task Force Report, which was issued on July 12, 2011 and analyzes NRC processes and regulations in light of the Fukushima accident, an event that occurred a mere five months ago, and through analysis of seismic and flooding, and environmental justice issues

stemming directly from the findings and recommendations in the Task Force Report. This Motion and accompanying contention are being submitted less than thirty (30) days after issuance of the Task Force Report.

Accordingly, the Intervenors have good cause to submit this Motion and the accompanying contention now.

2. Nature of the Intervenors' Right to be A Party to the Proceeding.

BREDL was previously admitted as parties in the Vogtle COL proceeding, based upon standing declarations from its members. *Southern Nuclear Operating Co.* (Vogtle, Units 3 & 4), ASLBP-09-873-01-COL-BD01 (2009). In support of this Motion, BREDL is submitting declarations from its members showing their standing because of their proximity of each individual's residence to the Vogtle Electric Generating Plant. Accordingly, BREDL continues to have a right to be a party to this proceeding. OR IN THE ALTERNATIVE: BREDL has a right to participate in this proceeding because it has standing and have submitted an admissible contention. *See* 10 C.F.R. § 2.309, 42 U.S.C. § 2339(a)(1).

3. Nature of BREDL's Interest in the Proceeding.

BREDL seeks to protect their members' health, safety, and lives, as well as the health and safety of the general public and the environment by ensuring that the NRC fulfills its non-discretionary duty under NEPA to consider the new and significant information set forth in the Task Force Report before it issues a COL for Vogtle Units 3 and 4. Moreover, as each of the members represented by BREDL in this proceeding live within fifty (50) miles of the Vogtle Electric Generating Plant, Intervenors have an interest in this proceeding because of the "obvious potential for offsite consequences" to those members' health and safety. *Diablo Canyon*, 56

NRC at 426-27, citing *Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), LBP-01-6, 53 NRC 138, 146, *aff'd*, CLI-01-17, 54 NRC 3 (2001).

4. Possible Effect of an Order on BREDL's Interest in the Proceeding.

As noted above, BREDL's interest in a safe, clean, and healthful environment would be served by the issuance of an order requiring the NRC to fulfill its non-discretionary duty under NEPA to consider new and significant information before making a licensing decision. *See Silva v. Romney*, 473 F.2d at 292. Compliance with NEPA ensures that environmental issues are given full consideration in "the ongoing programs and actions of the Federal Government." *Marsh v. Oregon Natural Res. Council*, 490 U.S. 360, 371 n. 14 (1989).

5. Availability of Other Means to Protect the Intervenors' Interests.

With regard to this factor, the question is not whether other parties may protect BREDL's interests, but rather whether there are other means by which BREDL may protect its own interests. *Long Island Lighting Co.* (Jamesport Nuclear Power Station, Units 1 & 2), ALAB-292, 2 NRC 631 (1975). Quite simply, no other means exist. Only through this hearing do Intervenors have a right that is judicially enforceable to seek compliance by NRC with NEPA before the COL for Vogtle Units 3 and 4 is issued, permitting these new reactors to operate and impose severe accident risks on the individuals represented by BREDL.

6. Extent the Intervenors' Interests are Represented by Other Parties.

No other party can represent BREDL's interests in protecting the health, safety, and environment of their members. Indeed, there are no parties currently admitted in the contested proceeding. It is further BREDL's understanding that no other party is raising the seismic-flooding and environmental justice aspects of the contention raised by BREDL, nor does it

appear than any other party is willing or able to represent BREDL's interests in this matter. As such, BREDL's interests cannot be represented by any other party.

7. Extent That Participation Will Broaden the Issues.

While BREDL's participation may broaden or delay the proceeding, this factor may not be relied upon to deny this Motion or exclude the contention because the NRC has a non-discretionary duty under NEPA to consider new and significant information that arises before it makes its licensing decision. *Marsh*, 490 U.S. at 373-4. Moreover, any resulting delay from granting BREDL's participation in this proceeding would not prohibit certain construction activities. Construction at the Vogtle Electric Generating Plant site is currently being conducted pursuant to a Limited Work Authorization, which will remain unaffected by this Motion and accompanying contention. See *Florida Power & Light Co.* (St. Lucie Nuclear Power Plant, Unit 2), ALAB-420, 6 NRC 8, 23 (1977) (holding that, in deciding whether petitioners' participation would broaden the issues or delay the proceeding, it is proper for the Licensing Board to consider that the petitioners agreed to allow issuance of the construction permit before their antitrust contention were heard, thereby eliminating any need to hold up plant construction pending resolution of those contentions.).

8. Extent to which BREDL Will Assist in the Development of a Sound Record.

BREDL will assist in the development of a sound record, as its contention is supported by the expert opinions of highly qualified experts, Dr. Arjun Makhijani, Dr. Ross McCluney and Rev. Charles Utley; see also *Pacific Gas & Elec. Co.* (Diablo Canyon Power Plant Independent Spent Fuel Storage Installation), CLI-08-01, 67 NRC 1, 6 (2008) (finding that, when assisted by experienced counsel and experts, participation of a petitioner may be reasonably expected to contribute to the development of a sound record). Furthermore, as a matter of law, NEPA

requires consideration of the new and significant information set forth in the Task Force Report.

See 10 C.F.R. § 51.92(a)(2). A sound record cannot be developed without such consideration.

C. The New Contention Satisfies the Standards For Admission of Timely Contention Set Forth in 10 C.F.R. § 2.309 (f)(2).

As discussed in Section III.A.1 above, the NRC has adopted a three-part standard for assessing timeliness. *See* 10 C.F.R. § 2.309(f)(2). The Motion and accompanying contention satisfy each of these standards.

D. The New Contention Satisfies the Standards For Admission of a New Contention Set Forth in 10 C.F.R. § 2.309(f)(1).

As discussed in the accompanying contention, the standards for admission of a contention set forth in 10 C.F.R. § 2.309(f)(1) are satisfied.

IV. CONCLUSION

For the foregoing reasons, this Motion should be granted and the accompanying contention admitted.

Respectfully submitted this 11th day of August 2011.

/signed electronically by/
John D. Runkle
Attorney at Law
Post Office Box 3793
Chapel Hill, North Carolina 27515
919-942-0600
jrunkle@pricecreek.com

Notification of Counsel

Pursuant to 10 CFR § 2.323(b), BREDL has consulted with counsel for the NRC, Ann P. Hodgdon, and Southern Nuclear Operating Company, Stan Blanton, regarding the Motion to re-open the record. Mr. Blanton said that the applicant would oppose the motion. Ms. Hodgdon said that, while the NRC staff does not object to the Motion *per se*, they have insufficient information to determine whether they agree or disagree with its substance.

/signed electronically by/

John D. Runkle
Attorney at Law
Post Office Box 3793
Chapel Hill, North Carolina 27515
919-942-0600
jrunkle@pricecreek.com

**UNITED STATES OF AMERICA
U.S. NUCLEAR REGULATORY COMMISSION**

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of) Docket Nos. 52-025-COL &
SOUTHERN NUCLEAR OPERATING CO.) 52-026-COL
Vogtle Electric Generating Plant)
Units 3 and 4)

)

**CONTENTION REGARDING NEPA REQUIREMENT TO ADDRESS
SAFETY AND ENVIRONMENTAL IMPLICATIONS OF
THE FUKUSHIMA TASK FORCE REPORT**

I. INTRODUCTION AND SUMMARY

Pursuant to 10 C.F.R. § 2.309(f)(1)(i), now comes the Intervenor, the Blue Ridge Environmental Defense League (“BREDL”), to assert new contentions seeking consideration of new and significant information relevant to the environmental analysis for the proposed licensing of two new reactors at the Vogtle Electric Generating Plant. In the contention set forth in Section II below, Intervenors request a hearing on the extraordinary safety and environmental implications for the Vogtle licensing decision of the conclusions and recommendations of the U.S. Nuclear Regulatory Commission’s Near-Term Task Force (the “Task Force”). The contention is supported by the expert declarations of Dr. Arjun Makhijani of the Institute for Energy and Environmental Research, Dr. Ross McCluney of SunPine Consultants and Rev. Charles Utley of the Blue Ridge Environmental Defense League. The contention is also supported by a motion to re-open the record and admit new contention in this proceeding.

The Task Force, a group of highly qualified and experienced Nuclear Regulatory Commission (“NRC” or the “Commission”) staff members selected by the Commission

to evaluate the regulatory implications of the Fukushima Dai-ichi accident, has issued a report recommending the NRC strengthen its regulatory scheme for protecting public health and safety by increasing the scope of accidents that fall within the “design basis” and are therefore subject to mandatory safety regulation. Recommendations for Enhancing Reactor Safety in the 21st Century: The Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident at 20-21 (July 12, 2011) (“Task Force Report”). The Task Force’s recommendation to establish mandatory safety regulations for severe accidents has extremely grave environmental and safety implications for nuclear reactor licensing because it would not be logical or necessary to recommend an upgrade to the basic level of protection currently afforded by NRC regulations unless those existing regulations were insufficient to ensure adequate protection of public health, safety, and the environment throughout the licensed life of nuclear reactors. The recommendation is all the more grave because it constitutes the second warning that the Commission has received regarding the need to expand the scope of design basis accidents. The first warning, issued over thirty years ago by the NRC’s “Special Inquiry Group” following the Three Mile Island accident and explained in more detail in Section II.B below, essentially went unheeded. *Id.* at 16-17. As the Task Force urges, “the time has come” to make fundamental changes to the NRC’s program for establishing minimum safety requirements for nuclear reactors. *Id.* at 18.

Moreover, the Task Force’s recommendation that the scope of mandatory safety regulations be expanded to include severe accidents raises significant environmental concerns in this proceeding, including that (1) the risks of operating the proposed Vogtle reactors are higher than estimated in the Final Supplemental Environmental Impact

Statement for Combined Licenses (COLs) for Vogtle Electric Generating Plant Units 3 and 4 (NUREG-1947, March 2011) (the “EIS”) and (2) the NRC’s previous environmental analysis of the relative costs and benefits of severe accident mitigation alternatives (“SAMAs”) is fundamentally inadequate because those measures are, in fact, necessary to assure adequate protection of the public health and safety and, therefore, should be imposed without regard to their cost.¹

Pursuant to NEPA, the analysis demanded by this contention may not be deferred until after Vogtle is licensed. Given that the NRC Commissioners have postponed taking action on the Task Force’s recommendations, admission of this contention constitutes the only way of ensuring that the environmental implications of the Task Force recommendations are taken into account in the licensing decision for Vogtle Units 3 and 4.

In addition, BREDL supports the individuals and organizations filing a rulemaking petition seeking to suspend any regulations that would preclude full consideration of the environmental implications of the Task Force Report.

In an Emergency Petition, now pending before the Commission for nearly four months, BREDL and others asked the Commission to suspend its licensing decisions while it evaluated the environmental implications of the Fukushima accident and to establish procedures for the fair and meaningful consideration of those issues in licensing hearings. Emergency Petition to Suspend All Pending Reactor Licensing Decisions and Related Rulemaking Decisions Pending Investigation of Lessons learned From Fukushima Daiichi Nuclear Power Station Accident (April 14-18, 2011) (the “Emergency

¹ The COLA and its related environmental documents are available at www.nrc.gov/reactors/new-reactors/col/vogtle.html

Petition”). In the aggregate, these contentions and other actions follow up on the Emergency Petition’s demand that the NRC comply with the law by addressing the lessons of the Fukushima accident in its environmental analyses for licensing decisions. Having received no response to the Emergency Petition, we now seek consideration of the Task Force’s far-reaching conclusions and recommendations in the instant case.

II. CONTENTION

A. Statement of Contention

The EIS for Vogtle fails to satisfy the requirements of NEPA because it does not address the new and significant environmental implications of the findings and recommendations raised by the NRC’s Fukushima Task Force Report, including seismic-flood and environmental justice issues. As required by 10 C.F.R. § 51.92(a)(2) and 40 C.F.R. § 1502.9(c), these implications must be addressed in a supplemental Draft EIS.

B. Brief Explanation of the Basis for the Contention.

The Task Force Report provides critical analysis and information.

This contention is based on the Task Force Report, in which the Commission instructed the Task Force to provide:

A systematic and methodical review of [NRC] processes and regulations to determine whether the agency should make additional improvements to its regulatory system and to make recommendations to the Commission for its policy direction, in light of the accident at the Fukushima Dai-ichi Nuclear Power Plant.

Task Force Report at vii. In response to that directive, the Task Force prepared a detailed history of the NRC’s program for regulation of safety and public health and evaluated that program in light of the experience of the Fukushima accident.

The Task Force then assessed the risk posed by “continued operation and continued licensing activities” for U.S. nuclear plants. Applying the NRC’s standard for whether nuclear plants pose an “imminent risk” such that they should be shut down immediately, *see, e.g.*, *Yankee Atomic Electric Co.* (Yankee Nuclear Power Station), CLI-96-6, 43 NRC 123, 128 (1996) (finding no “imminent hazard” that would warrant shutdown of a reactor), the Task Force found that no imminent risk was posed by operation or licensing. *Id.* at 18. In addition, the Task Force concluded that U.S. reactors meet the statutory standard for security, *i.e.*, they are “not inimical to the common defense and security.” *Id.* at 18; *see also* 42 U.S.C. § 2133(d) (forbidding the NRC from licensing reactors if their operation would be “inimical to the common defense and security”). Notably, however, the Task Force did not report a conclusion that licensing of reactors would not be “inimical to public health and safety,” as the AEA requires for licensing of reactors. 42 U.S.C. § 2133.

Instead, the Task Force concluded that the regulatory system on which the NRC relies to make the safety findings that the AEA requires for licensing of reactors must be strengthened by raising the level of safety that is minimally required for the protection of public health and safety:

In response to the Fukushima accident and the insights it brings to light, the Task Force is recommending actions, some general, some specific, that it believes would be a reasonable, well-formulated set of actions *to increase the level of safety associated with adequate protection of the public health and safety.*

Id. at 18 (emphasis added). In particular, the Task Force found that “the NRC’s safety approach is incomplete without a strong program for dealing with the unexpected, including severe accidents.” *Id.* at 20. Therefore the Task Force recommended that the NRC incorporate severe accidents into the “design basis” and subject it to mandatory

safety regulations. In order to upgrade the design basis, the Task Force also recommended that the NRC undertake new safety investigations and impose design changes, equipment upgrades, and improvements to emergency planning and operating procedures. *See, e.g.*, Task Force Report at 73-75.²

The Task Force also found that the Fukushima accident was not the first warning the NRC had received that it needed to strengthen its safety program in order to provide an adequate level of protection to public health and safety. After the Three Mile Island accident in 1979, an independent body appointed to investigate the accident's implications, known as the "Rogovin Commission," recommended that the NRC "[e]xpand the spectrum of design basis accidents." *Id.* at 16. But the NRC did little to follow the recommendations of the Rogovin Commission. While it "encouraged licensees to search for vulnerabilities" in their plant designs through Individual Plant Examination ("IPE") and Individual Plant Examination for External Events ("IPEEE") programs and encouraged the development of severe accident mitigation guidelines ("SAMGs"), "the Commission did not take action to require the IPEs, IPEEEs, or SAMGs." *Id.* Thus, the Task Force concluded that:

While the Commission has been partially responsive to recommendations calling for requirements to address beyond-design-basis accidents, the NRC has not made fundamental changes to the regulatory approach for beyond-design-basis events and severe accidents for operating reactors.

Id. at 17. Looking back on the Commission's failure to heed the Rogovin Commission's recommendations, the Task Force urged that "the time has come" when NRC safety regulations must be "reviewed, evaluated and changed, as necessary, to insure (sic) that

² The Task Force Report contains twelve "overarching" recommendations, which are summarized on pages 69-70.

they continue to address the NRC’s requirements to provide reasonable assurance of adequate protection of public health and safety.” *Id.* at 18.

To finally fulfill the Rogovin Commission’s recommendation, a need now re-confirmed by the Fukushima Task Force, would require a major re-evaluation and overhaul of the NRC’s regulatory program. As the Task Force recognized, the great majority of the NRC’s current regulations do not impose mandatory safety requirements on severe accidents, and severe accident measures are adopted only on a “voluntary” basis or through a “patchwork” of requirements. *Id.*

The lack of a program for mandatory regulation of severe accidents is clearly evident from the regulations themselves. The Part 50 regulations, which establish fundamental safety requirements for all reactors (including the current generation and the proposed new generation), are based on a “design basis” that does not include severe accidents. *Id.* at 16. Even the NRC’s Part 52 regulations for new reactors do not contain mandatory requirements for severe accident mitigation features. While the Part 52 regulations require combined license applicants to submit analyses of measures to mitigate severe accidents, Part 52 contains no standards for the adequacy of such analyses. In addition, the Commission has also stated that Part 52 severe accident mitigation measures, which must be described under the NRC’s safety regulations in 10 C.F.R. §§ 52.47(a)(23) and 52.79(a)(38), are subject to cost-benefit analysis. *See, e.g.,* Statement of Considerations (“SOC”) for AP1000 design certification rule, 10 C.F.R. Part 52 Appendix B, 71 Fed. Reg. 4,464, 4,469 (January 27, 2006): As stated in that notice:

Westinghouse’s evaluation of various design alternatives to prevent and mitigate severe accidents does not constitute design requirements. The Commission’s

assessment of this information is discussed in Section VII (sic) of this SOC on environmental impacts.

Section VI of the SOC, in turn, states that the NRC has evaluated severe accident mitigation alternatives using a cost-benefit analysis:

In addition, as part of the environmental assessment for the AP1000 design, the NRC reviewed Westinghouse's evaluation of various design alternatives to prevent and mitigate severe accidents in Appendix 1B of the AP1000 DCD Tier 2. Based upon review of Westinghouse's evaluation, the Commission finds that: (1) Westinghouse identified a reasonably complete set of potential design alternatives to prevent and mitigate severe accidents for the AP1000 design; (2) *none of the potential design alternatives are justified on the basis of cost-benefit considerations*; and (3) it is unlikely that other design changes would be identified and justified in the future on the basis of cost-benefit considerations, because the estimated core damage frequencies for the AP1000 are very low on an absolute scale. These issues are considered resolved for the AP1000 design.

71 Fed. Reg. at 4,477 (emphasis added). If, as recommended by the Task Force, the design basis had been upgraded to include severe accidents, the severe accident mitigation measures considered under 10 C.F.R. §§ 52.47(a)(23) and 52.79(a)(38) in the AP1000 design certification rulemaking would have been required if they were found to be necessary to ensure adequate protection of public health and safety, and it would have been unlawful to apply cost-benefit analysis to those measures. *Union of Concerned Scientists v. NRC*, 824 F.2d 108, 120 (D.C. Cir. 1987).

Therefore, the NRC's current regulatory scheme requires significant re-evaluation and revision in order to expand or upgrade the design basis for reactor safety as recommended by the Task Force Report. The fact that this effort has been postponed for thirty years makes the scope of the required undertaking all the more massive and urgent.

The National Environmental Policy Act requires a “hard look.”

The contention is also based on NEPA, “our basic national charter for protection of the environment.” 40 C.F.R § 1500.1(a). NEPA requires a federal agency to prepare an EIS for any “major Federal action significantly affecting the quality of the human environment.” 42 U.S.C. § 4332(2)(C)(i). This duty to carefully consider information regarding a project’s environmental impacts is non-discretionary. *Silva v. Romney*, 473 F.2d 287, 292 (1st Cir. 1973). Federal agencies are held to a “strict standard of compliance” with the Act’s requirements. *Calvert Cliff’s Coordinating Commission v. AEC*, 449 F.2d 1109, 1112 (D.C. Cir. 1971).

NEPA and the Council on Environmental Quality (“CEQ”) regulations implementing NEPA are intended to ensure that environmental considerations are “infused into the ongoing programs and actions of the Federal Government.” *Marsh v. Oregon Natural Res. Council*, 490 U.S. 360, 371 n.14 (1989). Thus, NEPA imposes on agencies a continuing obligation to gather and evaluate new information relevant to the environmental impact of its actions. *Warm Springs Dam Task Force v. Gribble*, 621 F.2d 1017, 1023-24 (9th Cir. 1980) (citing 42 U.S.C. 4332(2)(A), (B); *Essex County Preservation Ass’n v. Campbell*, 536 F.2d 956, 960-61 (1st Cir. 1976); *Society for Animal Rights, Inc. v. Schlesinger*, 512 F.2d 915, 917-18 (D.C. Cir. 1975)). “An agency that has prepared an EIS cannot simply rest on the original document. The agency must be alert to new information that may alter the results of its original environmental analysis, and continue to take a “hard look” at the environmental effects of [its] planned action, even after a proposal has received initial approval.” *Friends of the Clearwater v. Dombeck*, 222 F.3d 552, 557-58 (9th Cir. 2000) (quoting *Marsh*, 490 U.S. at 373-74).

The NRC regulations for the implementation also require supplementation of an EIS where “[t]here are new and significant circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts.” 10 C.F.R. 51.92 (a)(2). In addition, license applicants must supplement their environmental reports to address any new and significant information. *See* 10 C.F.R. §§ 51.50(c)(iii), 51.53(b), 51.53(c)(3)(iv).

Task Force Report Meets Standard for New and Significant Information.

The conclusions and recommendations presented in the Task Force Report fully satisfy the two-pronged test under NEPA regulations and case law for “new and significant information” whose environmental implications must be considered before the NRC may make a decision that approves operation of Vogtle Units 3 and 4. 10 C.F.R. § 51.92(a)(2), 40 C.F.R. § 1502.9. First, the information is “new” because it stems directly from the Fukushima accident, which occurred only five months ago and for which the special study commissioned by the Commission has only just been issued.

Second, the information is “significant” because it raises an extraordinary level of concern regarding the manner in which the proposed operation of Votle Units 3 and 4 “impacts public health and safety.” 40 C.F.R. § 1508.27(b)(2). For the first time since the Three Mile Island accident occurred in 1979, a highly respected group of scientists and engineers within the NRC Staff has fundamentally questioned the adequacy of the current level of safety provided by the NRC’s program for nuclear reactor regulation. As a result, the NRC must revisit any conclusions in the Vogtle EIS based on the assumption

that compliance with NRC safety regulations is sufficient to ensure that environmental impacts of accidents are acceptable.

For example, in Section 5.10 the EIS concludes that the radiological impacts of a design basis accident would be “SMALL.” This conclusion is based on the presumption that the new reactors would be built to a certified design that has been approved by NRC under its safety standards. If the design basis for the reactor does not incorporate accidents that should be considered in order to satisfy the adequate protection standard, then it is not possible to reach a conclusion that the design of the reactor adequately protects against accident risks. *See* Makhijani Declaration.

Moreover, by recommending the incorporation of accidents formerly classified as “severe” or “beyond design basis” into the design basis, the Task Force effectively recommends a complete overhaul of the NRC’s system for mitigating severe accidents through consideration of SAMAs. *See* 10 C.F.R. § 51.45(c). As the Task Force recognizes, currently the NRC does not impose measures for the mitigation of severe accidents unless they are shown to be cost-beneficial or unless they are adopted voluntarily. Task Force Report at 15. *See also* 10 C.F.R. §§ 51.71(d); 51.75(c)(2) (allowing EISs for combined license applications that rely on certified standardized designs to reference the severe accident mitigation analyses for those designs).³ But the Task Force recommends that severe accident mitigation measures should be adopted into the design basis, *i.e.*, the set of regulations adopted *without regard to their cost* as

³ *See also* Memorandum from NRC Staff to AP1000 and ESBWR design-Centered Working Groups re: Summary of the March 22 and 23, 2007, Meeting to Discuss pre-Combined License Application Issues (April 23, 2007) (suggesting that some SAMAs for proposed reactors with standardized designs should be included in the design application and some should be included in COLAs).

fundamentally required for all NRC standards that set requirements for adequate protection of health and safety. *Union of Concerned Scientists v. NRC*, 824 F.2d 108, 120 (D.C. Cir. 1987). Thus, the values assigned to the cost-benefit analysis for Vogtle-related SAMAs, as described in Section 5.10.3 of the EIS, must be re-evaluated in light of the Task Force’s conclusion that the value of SAMAs is so high that they should be elected as a matter of course.

Were SAMAs imposed as mandatory measures, the outcome of the environmental analysis for the proposed Vogtle reactors could be affected significantly in two major respects. First, severe accident mitigative measures now rejected as too costly may be required, thus substantially improving the safety of the plant’s operation if it is licensed. Second, consideration of the costs of mandatory mitigative measures could affect the overall cost-benefit analysis for the reactor.⁴ As discussed in Dr. Makhijani’s declaration, these costs may be significant, showing that other alternatives such as the no-action alternative and other alternative electricity production sources may be more attractive.⁵ As the fundamental purposes of NEPA are: (1) to guarantee that the

⁴ See 10 C.F.R. § 51.45 (c) (explaining that environmental reports should also include consideration of the economic, technical, and other benefits and costs of the proposed action and its alternatives).

⁵ NEPA requires the NRC to include in its EIS a “detailed statement . . . on . . . alternatives to the proposed action.” 42 U.S.C. § 4332(C)(iii). The alternatives analysis should address “the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for the choice among options by the decisionmaker and the public.” 40 C.F.R. § 1502.14. This analysis must “rigorously explore and objectively evaluate all reasonable alternatives.” 40 C.F.R. § 1502.14(a). Agencies must consider three types of alternatives, which include a no action alternative, other reasonable courses of actions, and mitigation measures not in the proposed action. 40 C.F.R. § 1508.25. The purpose of this section is “to insist that no major federal project should be undertaken without intense consideration of other more ecologically sound courses of action, including shelving the entire project, or of

government takes a “hard look” at all of the environmental consequences of proposed federal actions before the actions occur, *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350 (1989); and (2) to “guarantee that the relevant information will be made available to the larger audience that may also play a role in both the decisionmaking process and the implementation of that decision,” *id.* at 349, the NRC cannot meet the fundamental purposes of NEPA if it does not include all of the costs associated with required mitigative measures. *See Sierra Club v. Sigler*, 695 F.2d 957, 979 (5th Cir. 1983) (“There can be no ‘hard look’ at the costs and benefits unless all costs are disclosed.”).

The ER Must Be Supplemented to Include a Discussion of the Task Force Report’s Recommended Measures to Ensure the Plant’s Protection From Seismic and Flooding Events.

Following the devastating events in Japan, the Task Force Report explained the importance of protecting structures, systems and components (SSCs) of nuclear reactors from natural phenomena, including seismic and flooding hazards:

Protection from natural phenomena such seismic and flooding is critical for safe operation of nuclear power plants due to potential common-cause failures and significant contribution to core damage frequency from external events. Failure to adequately protect SSC’s important to safety from appropriate design-basis natural phenomena with appropriate safety margins has the potential for common-cause failures and significant consequences as demonstrated at Fukushima. Task Force Report at 30.

accomplishing the same result by entirely different means.” *Environmental Defense Fund v. Corps of Engineers*, 492 F.2d 1123, 1135 (5th Cir. 1974). “The existence of a viable but unexamined alternative renders an [EIS] inadequate.” *Natural Resources Defense Council v. U.S. Forest Service*, 421 F.3d 797, 813 (9th Cir. 2005) (quoting *Citizens for a Better Henderson v. Hodel*, 768 F.2d 1051, 1057 (9th Cir. 1985)).

Yet, the Task Force found that significant differences may exist between plants in the way they protect against design-basis natural phenomena (including seismic and flooding hazards) and the safety margin provided. Task Force Report at 29. For instance, while tsunami hazards have been considered in the design basis for operating plants sited on the Pacific Ocean, the same cannot be said for those sited on the Atlantic Ocean and Gulf of Mexico. *Id.* Further, as detailed by Dr. Ross McCluney, seismic seiches—standing waves on rivers, reservoirs and lakes caused by disturbances from tectonic activity and earthquakes—may occur at great distances from the epicenter of the initiating seismic event; they are continental and even global in their effect on bodies of water. For example, the Alaska earthquake of March 1964 caused seismic seiches in water bodies across North America. The locus of the greatest density of seiches caused by the Alaska Earthquake was the southeastern United States, with the greatest number in the states bordering the Gulf of Mexico. According to a US Geological Survey report, seiches as high as 1.8 meters were registered on the Gulf Coast, and hundreds of smaller seiches were recorded in the coterminous states. See McCluney Declaration.

In addition to environmental considerations, there are additional safety requirements which the NRC will need to address. General Design Criteria 2 requires *inter alia* that structures, systems and components be designed to withstand the effects of natural phenomena such as floods, tsunami, and seiches and still perform their safety functions. Appendix A of 10 CFR Part 100, “Seismic and Geologic Siting Criteria for Nuclear Power Plants,” was established to provide detailed criteria to evaluate the suitability of proposed sites.

The Task Force recommended that licensees reevaluate the seismic and flooding hazards at their sites and if necessary update the design basis and SSCs important to safety to protect against the updated hazards. Task Force Report at 30. The ER must be supplemented in light of this new and significant information. The Task Force’s findings and recommendations are directly relevant to environmental concerns and have a bearing on the proposed action and its impacts as they point to the need for a reevaluation of the seismic and flooding hazards at the Vogtle site, a “hard look” at the environmental consequences such hazards could pose, and an examination of what, if any, design measures could be implemented (i.e. through NEPA’s requisite “alternatives” analysis) to ensure that the public is adequately protected from these risks.

The ER Must Comply with Environmental Justice Requirements of Executive Order 12898.

The NRC must take steps to avoid disproportionate, adverse environmental impacts on low income and minority populations and impacts on important religious, subsistence, or social practices. The Final EIS for an early site permit for Plant Vogtle’s Units 3 and 4 concluded: “[T]he impacts of plant operations on environmental justice would be SMALL because no environmental pathways, health characteristics, or other preconditions of the minority and low-income population were found that would lead to adverse and disproportionate impacts.”⁶ Subsequent to the Vogtle COLA and ESP-FEIS, a nuclear power siting study was published which suggests that there is a “reactor-related environmental injustice” at Plant Vogtle. *See Rev. Utley declaration.* Southern Nuclear Operating Company and the NRC apparently disregarded this new information because

⁶ NUREG-1872, published August 2008

the Final Supplemental EIS for Plant Vogtle’s combined licenses states that the conclusions presented in the ESP EIS “remain bounding and valid.”⁷ The summary conclusions of the Final EIS are plainly wrong. Unless and until the NRC fully implements Executive Order 12898, environmental injustice will continue at Plant Vogtle and elsewhere. *Id.*

The ER Must Be Supplemented to Include a Discussion of the Additional Mitigation Measures Recommended by the Task Force Report.

“The discussion of steps that can be taken to mitigate adverse environmental consequences plays an important role in the environmental analysis under NEPA.” *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 351 (1989); *see also* 1502.16(h) (stating that an EIS must contain “means to mitigate adverse environmental impacts”). There must be a “reasonably complete discussion of possible mitigation measures.” *Robertson*, 490 U.S. at 352. Mitigation measures may be found insufficient when the agency fails to study the efficacy of the proposed mitigation, fails to take certain steps to ensure the efficacy of the proposed mitigation (such as including mandatory conditions in permits), or fails to consider alternatives in the event that the mitigation measures fail. *Id.*

The Task Force Report makes several significant findings when it comes to increasing and improving mitigation measures at new reactors and recommends a number of specific steps licensees could take in this regard. These recommendations include strengthening SBO mitigation capability at all operating and new reactors for design-basis and beyond-design-basis external events, (Section 4.2.1), requiring reliable

⁷ NUREG-1947, Section 5.7 Environmental Justice, March 2011

hardened vent designs in BWR facilities with Mark I and Mark II containments (Section 4.2.2), enhancing spent fuel pool makeup capability and instrumentation for the spent fuel pool (Section 4.2.4) and strengthening and integrating onsite emergency response capabilities such as EOPs, SAMGs, and EDMGs. Section 4.2.5. *See also Makhijani Declaration.* Accordingly, the ER must be supplemented to consider the use of these additional mitigation measures to reduce the project’s environmental impacts. *See* 40 C.F.R. §§ 1502.14 (f), 1502.16).

Task Force Urges Prior Consideration of Environmental Impacts.

The Task Force urges that some of its recommendations be considered before certain licensing decisions are made. For instance, the Task Force concludes that Recommendation 4 (proposing new requirements for prolonged station blackout (“SBO”) mitigation) and Recommendation 7 (proposing measures for spent fuel pool makeup capability and instrumentation) should apply to all design certifications or to COL applicants if the recommended requirements are not addressed in the referenced certified design. Task Force Report at 71. The Task Force recommends that design certifications and COLs under active staff review address this recommendation “before licensing.” *Id.* at 72.

Intervenors respectfully submit that this is the appropriate *and required* approach for NEPA consideration of Recommendations 4 and 7 and all of the Task Force’s remaining conclusions and recommendations. Before issuing a license for Vogtle, for example, the NRC must evaluate the relative costs and benefits of adopting Recommendations 4 and 7 in light of the NRC’s increased understanding regarding accident risks and the strength of its regulatory program to prevent or mitigate them. And the NRC must apply the same analysis to all of the recommendations, not just Recommendations 4 and 7. NEPA requires the NRC to address the environmental implications of the Task Force’s analysis *before* making a licensing

decision for Vogtle, in order to ensure that “important effects [of the licensing decision] will not be overlooked or underestimated only to be discovered after resources have been committed or the die otherwise cast.” *Robertson*, 490 U.S. at 349. *See also* 40 C.F.R. §§ 1500.1(c), 1502.1, 1502.14. The NRC’s obligation to comply with NEPA in this respect is independent of and in addition to the NRC’s responsibilities under the AEA, and must be enforced to the “fullest extent possible.” *Calvert Cliffs Coordinating Committee*, 449 F.2d at 1115. *See also Limerick Ecology Action v. NRC*, 869 F.2d 719, 729 (3rd Cir. 1989) (citing *Public Service Co. of New Hampshire v. NRC*, 582 F.2d 77, 86 (1st Cir. 1978)). Under NEPA, therefore, the Commission is required to address the Task Force’s findings and recommendations as they pertain to Vogtle Units 3 and 4 before making a licensing decision, regardless of whether it does or does not choose to do so in the context of its AEA-based regulations.

Although the EIS and other environmental documents would still need to be supplement, the Commission could moot the contention by adopting all of the Task Force’s recommendations. *See Citizens for Safe Power v. NRC*, 524 F.2d 1291, 1299 (D.C. Cir. 1975). However, a majority of the Commissioners has voted not to do so immediately. *See* Notation Vote Response Sheets re: SECY-11-0093, Near-Term Report and Recommendations for Agency Actions Following the Events in Japan, posted on the NRC’s website at <http://www.nrc.gov/reading-rm/doc-collections/commission/cvr/2011/>. Thus, while the NRC may eventually address the Task Force’s recommendations in the context of its AEA-based regulatory scheme, the Commission has given no indication that it intends to address any of the Task Force’s conclusions in its prospective licensing decisions. In the absence of any AEA-based review of the Task Force’s conclusions, the

Vogtle EIS must be supplemented in order to meet NEPA's goal that the NRC's licensing decision for Vogtle Units 3 and 4 will be "based on an accurate understanding of the environmental consequences of [its] actions." *Entergy Nuclear Operations, Inc.* (Indian Point Nuclear Generating Station, Units 2 and 3), LBP-11-17, slip op. at 17 (July 14, 2011).

C. Demonstration that the Contention is Within the Scope of the Proceeding.

The contention is within the scope of the proceeding because it seeks compliance with NEPA and NRC-implementing regulations, which must be complied with before Vogtle Units 3 and 4 may be licensed.

D. Demonstration that the Contention is Material to the Findings NRC Must Make to License Vogtle Units 3 and 4.

As demonstrated above in Section B, this contention challenges the NRC's failure to fully comply with NEPA and federal regulations for the implementation of NEPA in its EIS for the proposed Vogtle reactors, Units 3 and 4. Unless the NRC complies with the procedural requirements of NEPA that are discussed in the contention, it cannot make a valid finding that a COL for Vogtle Units 3 and 4 should be issued. Therefore the contention is material to the findings the NRC must make in order to license this facility.

The determination of whether it is appropriate to address the issues raised in this contention generically or on a case-specific basis is a discretionary matter for the NRC to decide. *Baltimore Gas & Electric Co. v. Natural Resources Defense Council*, 462 U.S. at 100s. Nevertheless, any generic resolution of the issues must be reached *before* the

licensing decision in this case is made, and must be applied to this licensing decision.

Robertson, 490 U.S. at 350.

E. Concise Statement of the Facts or Expert Opinion Supporting the Contention, Along With Appropriate Citations to Supporting Scientific or Factual Materials.

BREDL relies on the facts and opinions of the Task Force members as set forth in their Task Force Report and as summarized above in Section B. The high level of technical qualifications of the Task Force members has been recognized by the Commission. *See* Transcript of May 12, 2011, briefing at 5, in which Commissioner Magwood refers to the Task force as the NRC's "A-team."

Additional technical support is provided by: 1) the attached Declaration of Dr. Arjun Makhijani, which confirms the environmental significance of the Task Force's findings and recommendations with respect to the environmental analyses for all pending nuclear reactor licensing cases and design certification applications including the instant case; 2) the attached declaration of Dr. Ross McCluney which confirms the need for a hard look at the impact of seismic seiches on Plant Vogtle and that structures, systems and components be designed to withstand the effects of such natural phenomena and; 3) the attached declaration of Rev. Charles Utley which confirms the need for NRC to implement the Interim Task Force recommendations on emergency preparedness and public education and to comply with Executive Order 12898.

F. Sufficient Information to Show the Existence of a Genuine Dispute With the Applicant and the NRC.

Based on the complete failure of the NRC to address the environmental implications of the Task Force Report for the proposed licensing of Vogtle Units 3 and 4, it appears that the parties have a dispute as to whether the EIS for the facility must be revised to address those implications. As demonstrated above in Section B, the Task Force Report and Dr. Makhijani's Declaration provide sufficient information to show the genuineness and materiality of the dispute.

III. CONCLUSION

For the foregoing reasons, the contention is admissible and should be admitted for a hearing.

Respectfully submitted this the 11th day of August 2011.

/signed electronically by/
John D. Runkle
Attorney at Law
Post Office Box 3793
Chapel Hill, North Carolina 27515
919-942-0600
jrunkle@pricecreek.com

Notification of Counsel

Pursuant to 10 CFR § 2.323(b), BREDL has consulted with counsel for the NRC, Ann P. Hodgdon, and Southern Nuclear Operating Company, Stan Blanton, regarding the Motion to re-open the record. Mr. Blanton said that the applicant would oppose the motion. Ms. Hodgdon said that, while the NRC staff does not object to the Motion per se, they have insufficient information to determine whether they agree or disagree with its substance.

/signed electronically by/
John D. Runkle
Attorney at Law
Post Office Box 3793
Chapel Hill, North Carolina 27515
919-942-0600
jrunkle@pricecreek.com

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE SECRETARY

In the Matter of
Southern Nuclear Operating Company's
Combined License Application for
Vogtle Electric Generating Plant Units 3 and 4
Dockets No. 52-025 and 52-026

DECLARATION OF STANDING

Under penalty of perjury, _____ declares as follows:

1. My name is Queen Glover. I am a member of Blue Ridge Environmental Defense League.
2. I live at 2321 Kebek Rd Augusta, Ga 30906

My home lies within 50 miles of the site in Burke County, Georgia, jointly owned by Georgia Power Company, Oglethorpe Power Corporation, Municipal Electric Authority of Georgia and the City of Dalton for which Southern Nuclear Operating Company has applied to the U.S. Nuclear Regulatory Commission for a combined license for the construction and operation of two new nuclear power plants.

3. Based on the impacts of the recent nuclear power plant accident in Japan, I believe that these facilities are inherently dangerous. Therefore, construction of these new nuclear reactors so close to my home could pose a grave risk to my health and safety. In particular, I am concerned about releases of radioactive substances to the air and water, an accident involving the release of radioactive materials, and my ability to protect myself and my family if a radioactive accident were to occur.
4. Therefore, I have authorized Blue Ridge Environmental Defense League to represent my interests in this proceeding by filing new arguments opposing the issuance of a combined license to Southern Nuclear Operating Company.

Queen Glover
Signature

Dated: _____

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE SECRETARY

In the Matter of
Southern Nuclear Operating Company's
Combined License Application for
Vogtle Electric Generating Plant Units 3 and 4
Dockets No. 52-025 and 52-026

DECLARATION OF STANDING

Under penalty of perjury, I declares as follows:

1. My name is Hollee McClain; I am a member of Blue Ridge Environmental Defense League.
2. I live at 3511 Apt C Oakview Place Apartment 5

My home lies within 50 miles of the site in Burke County, Georgia, jointly owned by Georgia Power Company, Oglethorpe Power Corporation, Municipal Electric Authority of Georgia and the City of Dalton for which Southern Nuclear Operating Company has applied to the U.S. Nuclear Regulatory Commission for a combined license for the construction and operation of two new nuclear power plants.

3. Based on the impacts of the recent nuclear power plant accident in Japan, I believe that these facilities are inherently dangerous. Therefore, construction of these new nuclear reactors so close to my home could pose a grave risk to my health and safety. In particular, I am concerned about releases of radioactive substances to the air and water, an accident involving the release of radioactive materials, and my ability to protect myself and my family if a radioactive accident were to occur.
4. Therefore, I have authorized Blue Ridge Environmental Defense League to represent my interests in this proceeding by filing new arguments opposing the issuance of a combined license to Southern Nuclear Operating Company.

Hollee C. McClain
Signature

Dated: 8-10-11

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE SECRETARY

In the Matter of
Southern Nuclear Operating Company's
Combined License Application for
Vogtle Electric Generating Plant Units 3 and 4
Dockets No. 52-025 and 52-026

DECLARATION OF STANDING

Under penalty of perjury, Charles N. Utley declares as follows:

1. My name is Charles N. Utley. I am a member of Blue Ridge Environmental Defense League.

2. I live at 3417 Sutton Pl, Augusta, GA 30906

My home lies within 50 miles of the site in Burke County, Georgia, jointly owned by Georgia Power Company, Oglethorpe Power Corporation, Municipal Electric Authority of Georgia and the City of Dalton for which Southern Nuclear Operating Company has applied to the U.S. Nuclear Regulatory Commission for a combined license for the construction and operation of two new nuclear power plants.

3. Based on the impacts of the recent nuclear power plant accident in Japan, I believe that these facilities are inherently dangerous. Therefore, construction of these new nuclear reactors so close to my home could pose a grave risk to my health and safety. In particular, I am concerned about releases of radioactive substances to the air and water, an accident involving the release of radioactive materials, and my ability to protect myself and my family if a radioactive accident were to occur.

4. Therefore, I have authorized Blue Ridge Environmental Defense League to represent my interests in this proceeding by filing new arguments opposing the issuance of a combined license to Southern Nuclear Operating Company.


Signature

Dated: 8-8-2011

110811

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE SECRETARY

In the Matter of
Southern Nuclear Operating Company's
Combined License Application for
Vogtle Electric Generating Plant Units 3 and 4
Dockets No. 52-025 and 52-026

DECLARATION OF STANDING

Under penalty of perjury, _____ declares as follows:

1. My name is Brenda Antley. I am a member of Blue Ridge Environmental Defense League.
2. I live at 3417 Sutton Place Augusta, GA 30906
My home lies within 50 miles of the site in Burke County, Georgia, jointly owned by Georgia Power Company, Oglethorpe Power Corporation, Municipal Electric Authority of Georgia and the City of Dalton for which Southern Nuclear Operating Company has applied to the U.S. Nuclear Regulatory Commission for a combined license for the construction and operation of two new nuclear power plants.
3. Based on the impacts of the recent nuclear power plant accident in Japan, I believe that these facilities are inherently dangerous. Therefore, construction of these new nuclear reactors so close to my home could pose a grave risk to my health and safety. In particular, I am concerned about releases of radioactive substances to the air and water, an accident involving the release of radioactive materials, and my ability to protect myself and my family if a radioactive accident were to occur.
4. Therefore, I have authorized Blue Ridge Environmental Defense League to represent my interests in this proceeding by filing new arguments opposing the issuance of a combined license to Southern Nuclear Operating Company.

Brenda Antley
Signature

Dated: Aug. 7, 2011

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE SECRETARY

In the Matter of
Southern Nuclear Operating Company's
Combined License Application for
Vogtle Electric Generating Plant Units 3 and 4
Dockets No. 52-025 and 52-026

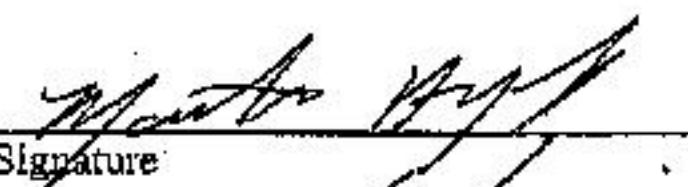
DECLARATION OF STANDING

Under penalty of perjury, _____ declares as follows:

1. My name is Martie Argyle. I am a member of Blue Ridge Environmental Defense League.
2. I live at 1127 Fox Den Rd.

My home lies within 50 miles of the site in Burke County, Georgia, jointly owned by Georgia Power Company, Oglethorpe Power Corporation, Municipal Electric Authority of Georgia and the City of Dalton for which Southern Nuclear Operating Company has applied to the U.S. Nuclear Regulatory Commission for a combined license for the construction and operation of two new nuclear power plants.

3. Based on the impacts of the recent nuclear power plant accident in Japan, I believe that these facilities are inherently dangerous. Therefore, construction of these new nuclear reactors so close to my home could pose a grave risk to my health and safety. In particular, I am concerned about releases of radioactive substances to the air and water, an accident involving the release of radioactive materials, and my ability to protect myself and my family if a radioactive accident were to occur.
4. Therefore, I have authorized Blue Ridge Environmental Defense League to represent my interests in this proceeding by filing new arguments opposing the issuance of a combined license to Southern Nuclear Operating Company.


Signature

Dated: 8/9/11

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE SECRETARY

In the Matter of
Southern Nuclear Operating Company's
Combined License Application for
Vogtle Electric Generating Plant Units 3 and 4
Dockets No. 52-025 and 52-026

DECLARATION OF STANDING

Under penalty of perjury, Cynthia B. Johnson declares as follows:

1. My name is Cynthia B. Johnson. I am a member of Blue Ridge Environmental Defense League.

2. I live at 2031 Country Place Dr. Augusta, GA 30906.

My home lies within 50 miles of the site in Burke County, Georgia, jointly owned by Georgia Power Company, Oglethorpe Power Corporation, Municipal Electric Authority of Georgia and the City of Dalton for which Southern Nuclear Operating Company has applied to the U.S. Nuclear Regulatory Commission for a combined license for the construction and operation of two new nuclear power plants.

3. Based on the impacts of the recent nuclear power plant accident in Japan, I believe that these facilities are inherently dangerous. Therefore, construction of these new nuclear reactors so close to my home could pose a grave risk to my health and safety. In particular, I am concerned about releases of radioactive substances to the air and water, an accident involving the release of radioactive materials, and my ability to protect myself and my family if a radioactive accident were to occur.
4. Therefore, I have authorized Blue Ridge Environmental Defense League to represent my interests in this proceeding by filing new arguments opposing the issuance of a combined license to Southern Nuclear Operating Company.

Signature

Dated: _____

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE SECRETARY

In the Matter of
Southern Nuclear Operating Company's
Combined License Application for
Vogtle Electric Generating Plant Units 3 and 4
Dockets No. 52-025 and 52-026

DECLARATION OF STANDING

Under penalty of perjury, Bernice Johnson declares as follows:

1. My name is Bernice Johnson. I am a member of Blue Ridge Environmental Defense League.

2. I live at 2051 Country Place Drive Augusta, Ga.

My home lies within 50 miles of the site in Burke County, Georgia, jointly owned by Georgia Power Company, Oglethorpe Power Corporation, Municipal Electric Authority of Georgia and the City of Dalton for which Southern Nuclear Operating Company has applied to the U.S. Nuclear Regulatory Commission for a combined license for the construction and operation of two new nuclear power plants.

3. Based on the impacts of the recent nuclear power plant accident in Japan, I believe that these facilities are inherently dangerous. Therefore, construction of these new nuclear reactors so close to my home could pose a grave risk to my health and safety. In particular, I am concerned about releases of radioactive substances to the air and water, an accident involving the release of radioactive materials, and my ability to protect myself and my family if a radioactive accident were to occur.

4. Therefore, I have authorized Blue Ridge Environmental Defense League to represent my interests in this proceeding by filing new arguments opposing the issuance of a combined license to Southern Nuclear Operating Company.

Bernice Johnson
Signature
Dated: 8/9/11

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE SECRETARY

In the Matter of
Southern Nuclear Operating Company's
Combined License Application for
Vogtle Electric Generating Plant Units 3 and 4
Dockets No. 52-025 and 52-026

DECLARATION OF STANDING

Under penalty of perjury, _____ declares as follows:

1. My name is Cicero Luke. I am a member of Blue Ridge Environmental Defense League.
2. I live at 4338 Woodvalley Place Augusta, Ga 30906

My home lies within 50 miles of the site in Burke County, Georgia, jointly owned by Georgia Power Company, Oglethorpe Power Corporation, Municipal Electric Authority of Georgia and the City of Dalton for which Southern Nuclear Operating Company has applied to the U.S. Nuclear Regulatory Commission for a combined license for the construction and operation of two new nuclear power plants.

3. Based on the impacts of the recent nuclear power plant accident in Japan, I believe that these facilities are inherently dangerous. Therefore, construction of these new nuclear reactors so close to my home could pose a grave risk to my health and safety. In particular, I am concerned about releases of radioactive substances to the air and water, an accident involving the release of radioactive materials, and my ability to protect myself and my family if a radioactive accident were to occur.
4. Therefore, I have authorized Blue Ridge Environmental Defense League to represent my interests in this proceeding by filing new arguments opposing the issuance of a combined license to Southern Nuclear Operating Company.

Cicero Luke
Signature

Dated: 08/09/11

110811

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE SECRETARY

In the Matter of
Southern Nuclear Operating Company's
Combined License Application for
Vogtle Electric Generating Plant Units 3 and 4
Dockets No. 52-025 and 52-026

DECLARATION OF STANDING

Under penalty of perjury, M declares as follows:

1. My name is Mildred Walker. I am a member of Blue Ridge Environmental Defense League.
2. I live at 1730 Sibley Rd, Augusta, GA 30907.

My home lies within 50 miles of the site in Burke County, Georgia, jointly owned by Georgia Power Company, Oglethorpe Power Corporation, Municipal Electric Authority of Georgia and the City of Dalton for which Southern Nuclear Operating Company has applied to the U.S. Nuclear Regulatory Commission for a combined license for the construction and operation of two new nuclear power plants.

3. Based on the impacts of the recent nuclear power plant accident in Japan, I believe that these facilities are inherently dangerous. Therefore, construction of these new nuclear reactors so close to my home could pose a grave risk to my health and safety. In particular, I am concerned about releases of radioactive substances to the air and water, an accident involving the release of radioactive materials, and my ability to protect myself and my family if a radioactive accident were to occur.
4. Therefore, I have authorized Blue Ridge Environmental Defense League to represent my interests in this proceeding by filing new arguments opposing the issuance of a combined license to Southern Nuclear Operating Company.

Mildred Walker
Signature

Dated: _____

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE SECRETARY

In the Matter of
Southern Nuclear Operating Company's
Combined License Application for
Vogtle Electric Generating Plant Units 3 and 4
Dockets No. 52-025 and 52-026

DECLARATION OF STANDING

Under penalty of perjury, Katrina D. Moore declares as follows:

1. My name is Katrina D. Moore. I am a member of Blue Ridge Environmental Defense League.

2. I live at 2185 Cross Creek Rd. Neohijah Ga 30815.

My home lies within 50 miles of the site in Burke County, Georgia, jointly owned by Georgia Power Company, Oglethorpe Power Corporation, Municipal Electric Authority of Georgia and the City of Dalton for which Southern Nuclear Operating Company has applied to the U.S. Nuclear Regulatory Commission for a combined license for the construction and operation of two new nuclear power plants.

3. Based on the impacts of the recent nuclear power plant accident in Japan, I believe that these facilities are inherently dangerous. Therefore, construction of these new nuclear reactors so close to my home could pose a grave risk to my health and safety. In particular, I am concerned about releases of radioactive substances to the air and water, an accident involving the release of radioactive materials, and my ability to protect myself and my family if a radioactive accident were to occur.

4. Therefore, I have authorized Blue Ridge Environmental Defense League to represent my interests in this proceeding by filing new arguments opposing the issuance of a combined license to Southern Nuclear Operating Company.

Katrina D. Moore
Signature

Dated: 8/8/2011

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE SECRETARY

In the Matter of
Southern Nuclear Operating Company's
Combined License Application for
Vogtle Electric Generating Plant Units 3 and 4
Dockets No. 52-025 and 52-026

DECLARATION OF STANDING

Under penalty of perjury, _____ declares as follows:

1. My name is Carey K. Barker. I am a member of Blue Ridge Environmental Defense League.
2. I live at 24089 Teakwood Dr. Heph. GA 30815.
My home lies within 50 miles of the site in Burke County, Georgia, jointly owned by Georgia Power Company, Oglethorpe Power Corporation, Municipal Electric Authority of Georgia and the City of Dalton for which Southern Nuclear Operating Company has applied to the U.S. Nuclear Regulatory Commission for a combined license for the construction and operation of two new nuclear power plants.
3. Based on the impacts of the recent nuclear power plant accident in Japan, I believe that these facilities are inherently dangerous. Therefore, construction of these new nuclear reactors so close to my home could pose a grave risk to my health and safety. In particular, I am concerned about releases of radioactive substances to the air and water, an accident involving the release of radioactive materials, and my ability to protect myself and my family if a radioactive accident were to occur.
4. Therefore, I have authorized Blue Ridge Environmental Defense League to represent my interests in this proceeding by filing new arguments opposing the issuance of a combined license to Southern Nuclear Operating Company.

Carey K. Barker
Signature

Dated: 8/10/11

110811

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE SECRETARY

In the Matter of
Southern Nuclear Operating Company's
Combined License Application for
Vogtle Electric Generating Plant Units 3 and 4
Dockets No. 52-025 and 52-026

DECLARATION OF STANDING

Under penalty of perjury, _____ declares as follows:

1. My name is Charles W. Barber Sr., I am a member of Blue Ridge Environmental Defense League.

2. I live at 2489 Teakwood Dr Heph, GA 30815.

My home lies within 50 miles of the site in Burke County, Georgia, jointly owned by Georgia Power Company, Oglethorpe Power Corporation, Municipal Electric Authority of Georgia and the City of Dalton for which Southern Nuclear Operating Company has applied to the U.S. Nuclear Regulatory Commission for a combined license for the construction and operation of two new nuclear power plants.

3. Based on the impacts of the recent nuclear power plant accident in Japan, I believe that these facilities are inherently dangerous. Therefore, construction of these new nuclear reactors so close to my home could pose a grave risk to my health and safety. In particular, I am concerned about releases of radioactive substances to the air and water, an accident involving the release of radioactive materials, and my ability to protect myself and my family if a radioactive accident were to occur.

4. Therefore, I have authorized Blue Ridge Environmental Defense League to represent my interests in this proceeding by filing new arguments opposing the issuance of a combined license to Southern Nuclear Operating Company.



Signature

Dated: 8/10/11

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE SECRETARY

In the Matter of
Southern Nuclear Operating Company's
Combined License Application for
Vogtle Electric Generating Plant Units 3 and 4
Dockets No. 52-025 and 52-026

DECLARATION OF STANDING

Under penalty of perjury, I declares as follows:

1. My name is VICTORIA DAVIS, I am a member of Blue Ridge Environmental Defense League.

2. I live at 3240 PENINSULA DR

My home lies within 50 miles of the site in Burke County, Georgia, jointly owned by Georgia Power Company, Oglethorpe Power Corporation, Municipal Electric Authority of Georgia and the City of Dalton for which Southern Nuclear Operating Company has applied to the U.S. Nuclear Regulatory Commission for a combined license for the construction and operation of two new nuclear power plants.

3. Based on the impacts of the recent nuclear power plant accident in Japan, I believe that these facilities are inherently dangerous. Therefore, construction of these new nuclear reactors so close to my home could pose a grave risk to my health and safety. In particular, I am concerned about releases of radioactive substances to the air and water, an accident involving the release of radioactive materials, and my ability to protect myself and my family if a radioactive accident were to occur.

4. Therefore, I have authorized Blue Ridge Environmental Defense League to represent my interests in this proceeding by filing new arguments opposing the issuance of a combined license to Southern Nuclear Operating Company.

Victoria M. Davis
Signature

Dated: 8-10-11

110811

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE SECRETARY

In the Matter of
Southern Nuclear Operating Company's
Combined License Application for
Vogtle Electric Generating Plant Units 3 and 4
Dockets No. 52-025 and 52-026

DECLARATION OF STANDING

Under penalty of perjury, I declares as follows:

1. My name is Shahid Abdul-Jabbar. I am a member of Blue Ridge Environmental Defense League.
2. I live at 208 Cathedral Ave. Dr. Aiken, SC 29801. My home lies within 50 miles of the site in Burke County, Georgia, jointly owned by Georgia Power Company, Oglethorpe Power Corporation, Municipal Electric Authority of Georgia and the City of Dalton for which Southern Nuclear Operating Company has applied to the U.S. Nuclear Regulatory Commission for a combined license for the construction and operation of two new nuclear power plants.
3. Based on the impacts of the recent nuclear power plant accident in Japan, I believe that these facilities are inherently dangerous. Therefore, construction of these new nuclear reactors so close to my home could pose a grave risk to my health and safety. In particular, I am concerned about releases of radioactive substances to the air and water, an accident involving the release of radioactive materials, and my ability to protect myself and my family if a radioactive accident were to occur.
4. Therefore, I have authorized Blue Ridge Environmental Defense League to represent my interests in this proceeding by filing new arguments opposing the issuance of a combined license to Southern Nuclear Operating Company.

Shahid Abdul-Jabbar
Signature

Dated: 8/10/11

110811

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE SECRETARY

In the Matter of
Southern Nuclear Operating Company's
Combined License Application for
Vogtle Electric Generating Plant Units 3 and 4
Dockets No. 52-025 and 52-026

DECLARATION OF STANDING

Under penalty of perjury, Tankie Dunbar declares as follows:

1. My name is Tankie Dunbar. I am a member of Blue Ridge Environmental Defense League.

2. I live at 1033 Patriot Dr Hephzibah GA 30815.

My home lies within 50 miles of the site in Burke County, Georgia, jointly owned by Georgia Power Company, Oglethorpe Power Corporation, Municipal Electric Authority of Georgia and the City of Dalton for which Southern Nuclear Operating Company has applied to the U.S. Nuclear Regulatory Commission for a combined license for the construction and operation of two new nuclear power plants.

3. Based on the impacts of the recent nuclear power plant accident in Japan, I believe that these facilities are inherently dangerous. Therefore, construction of these new nuclear reactors so close to my home could pose a grave risk to my health and safety. In particular, I am concerned about releases of radioactive substances to the air and water, an accident involving the release of radioactive materials, and my ability to protect myself and my family if a radioactive accident were to occur.

4. Therefore, I have authorized Blue Ridge Environmental Defense League to represent my interests in this proceeding by filing new arguments opposing the issuance of a combined license to Southern Nuclear Operating Company.

Tankie Dunbar
Signature

Dated: 10 Aug 2011

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
BEFORE THE SECRETARY

In the Matter of
Southern Nuclear Operating Company's
Combined License Application for
Vogtle Electric Generating Plant Units 3 and 4
Dockets No. 52-025 and 52-026

DECLARATION OF STANDING

Under penalty of perjury, _____ declares as follows:

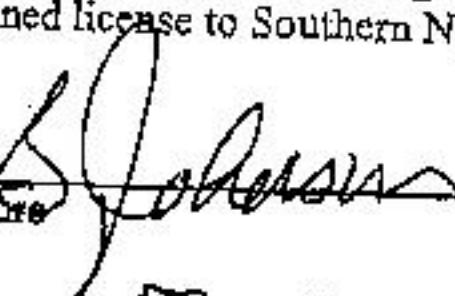
1. My name is Bernard Johnson. I am a member of Blue Ridge Environmental Defense League.

2. I live at 3522 Andover Dr Hephz, Ga 30815.

My home lies within 50 miles of the site in Burke County, Georgia, jointly owned by Georgia Power Company, Oglethorpe Power Corporation, Municipal Electric Authority of Georgia and the City of Dalton for which Southern Nuclear Operating Company has applied to the U.S. Nuclear Regulatory Commission for a combined license for the construction and operation of two new nuclear power plants.

3. Based on the impacts of the recent nuclear power plant accident in Japan, I believe that these facilities are inherently dangerous. Therefore, construction of these new nuclear reactors so close to my home could pose a grave risk to my health and safety. In particular, I am concerned about releases of radioactive substances to the air and water, an accident involving the release of radioactive materials, and my ability to protect myself and my family if a radioactive accident were to occur.

4. Therefore, I have authorized Blue Ridge Environmental Defense League to represent my interests in this proceeding by filing new arguments opposing the issuance of a combined license to Southern Nuclear Operating Company.

Signature: 

Dated: 08-10-11

110811

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE SECRETARY

In the Matter of
Southern Nuclear Operating Company's
Combined License Application for
Vogtle Electric Generating Plant Units 3 and 4
Dockets No. 52-025 and 52-026

DECLARATION OF STANDING

Under penalty of perjury, I declares as follows:

1. My name is Narvie Dixon. I am a member of Blue Ridge Environmental Defense League.
2. I live at P.O. Box 126, Blythe, Ga. 30805.

My home lies within 50 miles of the site in Burke County, Georgia, jointly owned by Georgia Power Company, Oglethorpe Power Corporation, Municipal Electric Authority of Georgia and the City of Dalton for which Southern Nuclear Operating Company has applied to the U.S. Nuclear Regulatory Commission for a combined license for the construction and operation of two new nuclear power plants.

3. Based on the impacts of the recent nuclear power plant accident in Japan, I believe that these facilities are inherently dangerous. Therefore, construction of these new nuclear reactors so close to my home could pose a grave risk to my health and safety. In particular, I am concerned about releases of radioactive substances to the air and water, an accident involving the release of radioactive materials, and my ability to protect myself and my family if a radioactive accident were to occur.
4. Therefore, I have authorized Blue Ridge Environmental Defense League to represent my interests in this proceeding by filing new arguments opposing the issuance of a combined license to Southern Nuclear Operating Company.

Narvie Dixon

Signature

Dated: 8-10-11

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE SECRETARY

In the Matter of
Southern Nuclear Operating Company's
Combined License Application for
Vogtle Electric Generating Plant Units 3 and 4
Dockets No. 52-025 and 52-026

DECLARATION OF STANDING

Under penalty of perjury, I declares as follows:

1. My name is Sheray Dixon. I am a member of Blue Ridge Environmental Defense League.
2. I live at 277 Nellie P.O. Box 126, Hwy 44, Ga. 30805.

My home lies within 50 miles of the site in Burke County, Georgia, jointly owned by Georgia Power Company, Oglethorpe Power Corporation, Municipal Electric Authority of Georgia and the City of Dalton for which Southern Nuclear Operating Company has applied to the U.S. Nuclear Regulatory Commission for a combined license for the construction and operation of two new nuclear power plants.

3. Based on the impacts of the recent nuclear power plant accident in Japan, I believe that these facilities are inherently dangerous. Therefore, construction of these new nuclear reactors so close to my home could pose a grave risk to my health and safety. In particular, I am concerned about releases of radioactive substances to the air and water, an accident involving the release of radioactive materials, and my ability to protect myself and my family if a radioactive accident were to occur.
4. Therefore, I have authorized Blue Ridge Environmental Defense League to represent my interests in this proceeding by filing new arguments opposing the issuance of a combined license to Southern Nuclear Operating Company.

Sheray Dixon
Signature

Dated: 8-10-11

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE SECRETARY

In the Matter of
Southern Nuclear Operating Company's
Combined License Application for
Vogtle Electric Generating Plant Units 3 and 4
Dockets No. 52-025 and 52-026

DECLARATION OF STANDING

Under penalty of perjury, _____ declares as follows:

1. My name is Juellyn Fulton. I am a member of Blue Ridge Environmental Defense League.
2. I live at 3930 Bowen Dr. Dalton Ga 30815.

My home lies within 50 miles of the site in Burke County, Georgia, jointly owned by Georgia Power Company, Oglethorpe Power Corporation, Municipal Electric Authority of Georgia and the City of Dalton for which Southern Nuclear Operating Company has applied to the U.S. Nuclear Regulatory Commission for a combined license for the construction and operation of two new nuclear power plants.

3. Based on the impacts of the recent nuclear power plant accident in Japan, I believe that these facilities are inherently dangerous. Therefore, construction of these new nuclear reactors so close to my home could pose a grave risk to my health and safety. In particular, I am concerned about releases of radioactive substances to the air and water, an accident involving the release of radioactive materials, and my ability to protect myself and my family if a radioactive accident were to occur.
4. Therefore, I have authorized Blue Ridge Environmental Defense League to represent my interests in this proceeding by filing new arguments opposing the issuance of a combined license to Southern Nuclear Operating Company.

Juellyn Fulton
Signature

Dated: 8/10/2011

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE SECRETARY

In the Matter of
Southern Nuclear Operating Company's
Combined License Application for
Vogtle Electric Generating Plant Units 3 and 4
Dockets No. 52-025 and 52-026

DECLARATION OF STANDING

Under penalty of perjury, _____ declares as follows:

1. My name is Kevin B. Moore. I am a member of Blue Ridge Environmental Defense League.

2. I live at 217 Dry Creek Rd. Suwan GA 30807.

My home lies within 50 miles of the site in Burke County, Georgia, jointly owned by Georgia Power Company, Oglethorpe Power Corporation, Municipal Electric Authority of Georgia and the City of Dalton for which Southern Nuclear Operating Company has applied to the U.S. Nuclear Regulatory Commission for a combined license for the construction and operation of two new nuclear power plants.

3. Based on the impacts of the recent nuclear power plant accident in Japan, I believe that these facilities are inherently dangerous. Therefore, construction of these new nuclear reactors so close to my home could pose a grave risk to my health and safety. In particular, I am concerned about releases of radioactive substances to the air and water, an accident involving the release of radioactive materials, and my ability to protect myself and my family if a radioactive accident were to occur.

4. Therefore, I have authorized Blue Ridge Environmental Defense League to represent my interests in this proceeding by filing new arguments opposing the issuance of a combined license to Southern Nuclear Operating Company.


Signature

Dated: 08-10 - 2011

I10811

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE SECRETARY

In the Matter of
Southern Nuclear Operating Company's
Combined License Application for
Vogtle Electric Generating Plant Units 3 and 4
Dockets No. 52-025 and 52-026

DECLARATION OF STANDING

Under penalty of perjury, _____ declares as follows:

1. My name is Daphne Carter. I am a member of Blue Ridge Environmental Defense League.
2. I live at 2531 Smoketree Rd.

My home lies within 50 miles of the site in Burke County, Georgia, jointly owned by Georgia Power Company, Oglethorpe Power Corporation, Municipal Electric Authority of Georgia and the City of Dalton for which Southern Nuclear Operating Company has applied to the U.S. Nuclear Regulatory Commission for a combined license for the construction and operation of two new nuclear power plants.

3. Based on the impacts of the recent nuclear power plant accident in Japan, I believe that these facilities are inherently dangerous. Therefore, construction of these new nuclear reactors so close to my home could pose a grave risk to my health and safety. In particular, I am concerned about releases of radioactive substances to the air and water, an accident involving the release of radioactive materials, and my ability to protect myself and my family if a radioactive accident were to occur.
4. Therefore, I have authorized Blue Ridge Environmental Defense League to represent my interests in this proceeding by filing new arguments opposing the issuance of a combined license to Southern Nuclear Operating Company.


Signature

Dated: 8/10/11

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE SECRETARY

In the Matter of
Southern Nuclear Operating Company's
Combined License Application for
Vogtle Electric Generating Plant Units 3 and 4
Dockets No. 52-025 and 52-026

DECLARATION OF STANDING

Under penalty of perjury, _____ declares as follows:

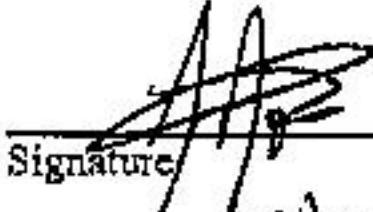
1. My name is Terry Michael Jones. I am a member of Blue Ridge Environmental Defense League.

2. I live at 1532 Georgia Ave.

My home lies within 50 miles of the site in Burke County, Georgia, jointly owned by Georgia Power Company, Oglethorpe Power Corporation, Municipal Electric Authority of Georgia and the City of Dalton for which Southern Nuclear Operating Company has applied to the U.S. Nuclear Regulatory Commission for a combined license for the construction and operation of two new nuclear power plants.

3. Based on the impacts of the recent nuclear power plant accident in Japan, I believe that these facilities are inherently dangerous. Therefore, construction of these new nuclear reactors so close to my home could pose a grave risk to my health and safety. In particular, I am concerned about releases of radioactive substances to the air and water, an accident involving the release of radioactive materials, and my ability to protect myself and my family if a radioactive accident were to occur.

4. Therefore, I have authorized Blue Ridge Environmental Defense League to represent my interests in this proceeding by filing new arguments opposing the issuance of a combined license to Southern Nuclear Operating Company.


Signature

Dated: 9/10

6935 Laurel Avenue, Suite 201
Takoma Park, MD 20912

Phone: (301) 270-5500
FAX: (301) 270-3029
e-mail: ieer@ieer.org
<http://www.ieer.org>

**DECLARATION OF DR. ARJUN MAKHIJANI
REGARDING SAFETY AND ENVIRONMENTAL SIGNIFICANCE OF
NRC TASK FORCE REPORT REGARDING LESSONS LEARNED FROM
FUKUSHIMA DAIICHI NUCLEAR POWER STATION ACCIDENT¹**

I, Arjun Makhijani, declare as follows:

Introduction and Statement of Qualifications

1. I am President of the Institute for Energy and Environmental Research ("IEER") in Takoma Park, Maryland. Under my direction, IEER produces technical studies on a wide range of energy and environmental issues to provide advocacy groups and policy makers with sound scientific information and analyses as applied to environmental and health protection and for the purpose of promoting the understanding and democratization of science. A copy of my curriculum vita is attached.
2. I am qualified by training and experience as an expert in the fields of plasma physics, electrical engineering, nuclear engineering, the health effects of radiation, radioactive waste management and disposal (including spent fuel), estimation of source terms from nuclear facilities, risk assessment, energy-related technology and policy issues, and the relative costs and benefits of nuclear energy and other energy sources. I am the principal author of a report on the 1959 accident at the Sodium Reactor Experiment facility near Simi Valley in California, prepared as an expert report for litigation involving radioactivity emissions from that site. I am also the principal author of a book, *The Nuclear Power Deception: U.S. Nuclear Mythology from Electricity "Too Cheap to Meter" to "Inherently Safe" Reactors* (Apex Press, New York, 1999, co-author, Scott Saleska), which examines, among other things, the safety of various designs of nuclear reactors.
3. I have written or co-written a number of other books, reports, and publications analyzing the safety, economics, and efficiency of various energy sources, including nuclear power. I am also the author of *Securing the Energy Future of the United States: Oil, Nuclear and Electricity*

¹ Task Force Review (*Recommendations for Enhancing Reactor Safety in the 21st Century: The Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident*, Nuclear Regulatory Commission, July 12, 2011, at <http://pbadupws.nrc.gov/docs/ML1118/ML111861807.pdf>)

Vulnerabilities and a Post-September 11, 2001 Roadmap for Action (Institute for Energy and Environmental Research, Takoma Park, Maryland, December 2001). In 2004, I wrote “Atomic Myths, Radioactive Realities: Why nuclear power is a poor way to meet energy needs,” *Journal of Land, Resources, & Environmental Law*, v. 24, no. 1 at 61-72 (2004). The article was adapted from an oral presentation given on April 18, 2003, at the Eighth Annual Wallace Stegner Center Symposium entitled, “Nuclear West: Legacy and Future,” held at the University of Utah S.J. Quinney College of Law. In 2008, I prepared a report for the Sustainable Energy & Economic Development (SEED) Coalition entitled *Assessing Nuclear Plant Capital Costs for the Two Proposed NRG Reactors at the South Texas Project Site*.

4. I am generally familiar with the basic design and operation of U.S. nuclear reactors and with the safety and environmental risks they pose. I am also generally familiar with materials from the press, the Japanese government, the Tokyo Electric Power Company, the French government safety authorities, and the U.S. Nuclear Regulatory Commission (“NRC”) regarding the Fukushima Daiichi (hereafter Fukushima) accident and its potential implications for the safety and environmental protection of U.S. reactors. I have also read *Recommendations for Enhancing Reactor Safety in the 21st Century: The Near-Term Task Force Review of Insights from the Fukushima Dai-chi Accident*, July 12, 2011 (hereafter the “Task Force Review”), published by the NRC.

5. On April 19, 2011, I prepared a declaration stating my opinion that although the causes, evolution, and consequences of the Fukushima accident were not yet fully clear a month after the accident began, it was already presenting new and significant information regarding the risks to public health and safety and the environment posed by the operation of nuclear reactors. My declaration was submitted to the NRC by numerous individuals and environmental organizations in support of a legal petition to suspend licensing decisions while the NRC investigated the regulatory implications of the Fukushima accident. Emergency Petition to Suspend All Pending Reactor Licensing Decisions and Related Rulemaking Decisions Pending Investigation of Lessons learned From Fukushima Daiichi Nuclear Power Station Accident (April 14-18, 2011). In my declaration I also stated my belief that the integration of new information from the Fukushima accident into the NRC’s licensing process could affect the outcome of safety and environmental analyses for reactor licensing and relicensing decisions by resulting in the denial of licenses or license extensions or the imposition of new conditions and/or new regulatory requirements. I also expressed the opinion that the new information could also affect the NRC’s evaluation of the fitness of new reactor designs for certification. *Id.*, par. 5.

Purpose

6. The purpose of my declaration is to explain why the Task Force Review provides further support for my opinions that the Fukushima accident presents new and significant information regarding the risks to public health and safety and the environment posed by the operation of nuclear reactors and that the integration of this new information into the NRC’s licensing process could affect the outcome of safety and environmental analyses for reactor licensing and relicensing decisions and the NRC’s evaluation of the fitness of new reactor designs for certification.

Agreement With Task Force Review's Conclusions Regarding Need to Expand Design Basis

7. In my opinion, the Task Force reasonably concludes that substantial revisions to the very framework of NRC regulations are needed to adequately protect public health and the environment. I also agree that a major overarching step that needs to be taken is to integrate into the design basis for NRC safety requirements an expanded list of severe accidents and events, based on current scientific understanding and evaluations. This would ensure that potential mitigation measures are evaluated on the basis of whether they are needed for safety and not whether they are merely desirable. Should the NRC fail to incorporate an expanded list of severe accident requirements in the design basis of reactors, then a conclusion that the design provides for adequate protection to the public against severe accident risks could not be justified. The necessity for an expanded list of design basis requirements should be viewed in light of the Fukushima experience and the nuclear accident experience which preceded Fukushima, including Three Mile Island and Chernobyl accidents. Specifically, adequate protection of the public is incompatible with the NRC's continued reliance on voluntary evaluation of severe external and internal events, voluntary adoption of mitigation measures, or the use of cost-benefit analysis to evaluate their desirability.

8. I believe my opinion is consistent with the Task Force's statement that:

Adequate protection has been, and should continue to be, an evolving safety standard supported by new scientific information, technologies, methods, and operating experience. This was the case when new information about the security environment was revealed through the events of September 11, 2001. Licensing or operating a nuclear power plant with no emergency core cooling system or without robust security protections, while done in the past, would not occur under the current regulations. As new information and new analytical techniques are developed, safety standards need to be *reviewed, evaluated, and changed, as necessary, to insure that they continue to address the NRC's requirements to provide reasonable assurance of adequate protection of public health and safety.* *The Task Force believes, based on its review of the information currently available from Japan and the current regulations, that the time has come for such change.* [p. 18, italics added]

9. I am concerned that over the past three decades or more, the NRC has not conducted the type of review of the adequacy of its safety regulations that is necessary to update its requirements so as to ensure that NRC safety requirements will provide the minimum level of protection required by the Atomic Energy Act. For instance, the Task Force Review points out that, over 30 years ago, the Rogovin Commission recommended that the scope of the design basis should be expanded to include a greater range of severe accidents. The Rogovin Commission explicitly stated that “[m]odification is definitely needed in the current philosophy that there are some accidents (“Class Nine accidents”)^[2] so unlikely that reactor designs need not

² Class Nine accidents are now called “severe accidents.” (Task Force Review p. 16)

provide for mitigating their consequences.”³. This recommendation was effectively disregarded by the NRC. Instead of imposing and enforcing mandatory requirements for prevention and mitigation of severe accidents, the NRC accepted voluntary measures and the use of cost-benefit assessments by licensees to exclude requirements for a range of preventive or mitigative measures. As a result the Task Force Review concluded that despite including some requirements for beyond-design-basis accidents, “the NRC *has not made fundamental changes to the regulatory approach for beyond-design-basis events and severe accidents* for operating reactors.” (p. 17, italics added). Even the installation of hardened vents on Mark I and Mark II BWRs was left to the voluntary discretion of the licensees. Given the NRC’s failure to make the needed changes in its basic regulatory requirements for safety since the Rogovin Commission report was issued over thirty years ago, and in light of the disastrous consequences of the Fukushima accident, which continues nearly five months after it started, I consider the current inadequacies in the NRC’s program for regulation of basic reactor safety to be extraordinarily grave problems.

Potential Effects of Task Force Review on Environmental Analyses for New Reactors, Existing Reactor License Renewal, and Standardized Design Certification

10. If the Task Force’s recommendation to incorporate severe accidents into the design basis for NRC safety requirements is considered in environmental analyses for reactor licensing decisions or standardized design certifications, I think it would have very significant effects on the outcome of those analyses, in three key respects. First, the environmental analysis would have to consider the implication of the Task Force Review that compliance with current NRC safety requirements does not adequately protect public health and safety from severe accidents and their environmental effects. Second, for reactors that are unable to comply with new mandatory requirements, it could result in the denial of licenses. Third, the cost of adopting mandatory measures necessary to significantly improve the safety of currently operating reactors and proposed new reactors is likely to be significant.

Change to Estimate of Environmental Risk

11. An analysis of the environmental implications of the Task Force Review would have to consider the ramifications of the Task Force’s implicit conclusion that compliance with current NRC safety standards does not adequately protect public health and safety from severe accidents and their environmental effects. For instance, the Task Force Review indicates that seismic and flooding risks as well as risks of seismically-induced fires and floods may be greater than previously understood by the NRC in some cases. Therefore in its environmental analyses, the NRC would have to revise its analysis to reflect the new understanding that the risks and radiological impacts of accidents are greater than previously thought.

Potential Denial of License Applications Based on Environmental Risk Analyses

12. The Task Force Review implicitly raises the potential that some reactors will be unable to

³ Rogovin Commission report (*Three Mile Island: A Report to the Commissioners and to the Public*, by Mitchell Rogovin and George T. Frampton, et al. NUREG/CR-1250 1980. (Rogovin, Stern & Huge, Washington, DC, January 1980), v. 1, p. 151

comply with new mandatory requirements, thus resulting in the denial of licenses. For instance, this would be the case if a reactor cannot be adequately backfitted to comply with present-day assessment of ground shaking induced by earthquakes. Similarly, multi-unit siting may not be allowed in certain cases due to the impracticality of meeting upgraded emergency management requirements.

Significant Changes to Cost-Benefit Analyses

13. The cost of adopting mandatory measures necessary to significantly improve the safety of currently operating reactors and proposed new reactors is likely to be significant. Adoption of a coherent regulatory framework as recommended by the Task Force, including periodic reassessments of whether the design basis is up to date with scientific assessments of flooding and seismic threats, is likely to result in significantly increased costs for nuclear reactors.

14. The Task Force Review contains numerous recommendations for consideration of new mandatory requirements for increasing the capability of the reactors, equipment, and personnel to handle and to respond to a range of severe accidents. Adoption of such measures could have high costs. This, in turn, will affect the overall cost-benefit analysis for reactors, especially the comparisons of nuclear power with alternative sources of electricity. Examples of potentially significant costs if severe accident mitigation measures are adopted follow in paragraphs 15 through 24 below:

15. If the Task Force recommendations are adopted, all existing reactors will be required to make changes to extend their capacity to handle station blackouts. This design upgrade is likely to have significant costs.

16. Similar considerations apply to new reactor combined construction and operating license applications. For instance, the Task Force recommends adding station blackout requirements to the Advanced Boiling Water Reactor, which would also likely result in increased costs. (p. 72).

17. Even where the Task Force deems some narrow issues to be already resolved by COL (combined license) applications and/or design certification applications, the interplay of other Task Force recommendations may raise environmental issues and cost concerns. For instance, while the Task Force found that the AP1000 and ESBWR designs already have a 72-hour provision for passive emergency core cooling, thereby satisfying the design requirement recommendations for station blackouts (pp. 71-72), other statements in the Task Force Review indicate the existence of environmental concerns that should be addressed in an EIS. For instance, the Task Force recommendations relating to the provision of backup power during the time beyond 72 hours relate mainly to prepositioning equipment offsite (Recommendation 4.1, p. 38) and therefore were regarded as not relevant to AP1000 and ESBWR design certifications but only to the COL process (p. 72). However, in the context of emergency preparedness, the Task Force Review notes that “[i]n the case of large natural disasters such as earthquakes, hurricanes, and floods, the phenomena challenging the plant will also have affected the local community. In these cases, *prearranged resources may not be available because of their inability to reach the plant site....*” (p. 60, italics added). Therefore the designs of the AP1000 and the ESBWR need to be reviewed in the context of their ability to mitigate the environmental impacts of station

blackout lasting more than 72 hours. The potential for destruction of infrastructure that would prevent prestaged offsite equipment from reaching the site would also need to be taken into account in environmental analyses for COLs and license extension applications.

18. Similarly, while the Task Force concludes that COL and Early Site Permit (ESP) applications already satisfy Recommendation 2.1 with respect to analysis of seismic and flooding risks (p. 71), it does not appear that all of the seismic and flooding-related implications of the Review have been addressed. Specifically, the flooding and fires that may be induced by earthquakes was closed by the NRC without imposing new requirements; the Task Force Review recommends reopening this issue (p. 32). These are issues that combine site characteristics and reactor design. For instance, the passive cooling features of AP1000s and ESBWRs involve pools of water located above the reactors. In addition, the ESBWR design has a buffer spent fuel pool in roughly the same position relative to the reactor as the Mark I design reactors (i.e., above the reactor vessel). Hence it is important to revisit this issue for these two reactor designs since they may be built at seismically active sites, including in the central and eastern United States (see paragraph 22 below), where there are active COL applications pending.

19. In the context of existing reactors, the Task Force Review recommends incorporating the latest understanding of seismic impacts and flooding (Recommendation 2, p. 30), and reopening the issue seismically induced flooding and fires (Recommendation 3, p. 32). This reassessment may also involve increased costs due to required backfits.

20. Taken as a whole, the Task Force Review's recommendations implicitly call for a review of all new reactor design certifications regarding station blackout (SBO) arrangements, including mitigation measures for SBO events that extend beyond 72 hours and spent fuel pool instrumentation and make up water supply capability. The effects of seismically induced flooding and fires on spent fuel pool arrangements should also be reviewed. All of these reviews could result in the imposition of costly prevention or mitigation measures, affecting comparisons with the alternatives.

21.. In view of the events leading to the hydrogen explosions in Units 1, 3, and 4 at Fukushima, the reliability of the existing hardened vent system in Mark I and Mark II reactors has been thrown into question. The Task Force Review recommends installation of *reliable* hardened vents in all Mark I and Mark II BWRs (Recommendation 5, p. 41). Because such vents have not yet been designed and tested, their costs are unknown. However, they are likely to be substantial. These costs must be determined and evaluated for NEPA purposes for all 23 Mark I reactors and all eight Mark II reactors.

22. The recommended mandatory review of the flooding and seismic design basis of existing reactors to evaluate whether they meet the design basis safety requirements could result in greatly increased costs in some or many cases. The establishment of the Shoreline Fault just offshore the Diablo Canyon Power Plant and the Oceanside thrust in the area of the San Onofre Nuclear Generating Station provides examples of recent developments that could lead to large expenditures for restoring the design basis safety margins for these reactors. As a reflection of the uncertainty, Pacific Gas & Electric (PG&E), which owns Diablo Canyon has itself requested and obtained a delay of 52 months in its license extension application so that the necessary

seismic studies can be completed. Another example relates to seismic hazard assessments in the central and eastern United States. In that case, the NRC has concluded that “[u]pdates to seismic data and models indicate that estimates of the seismic hazard, at some operating nuclear power plant sites in the Central and Eastern United States, have increased.”⁴ The NRC does not have enough data at present to determine what, if any, backfits may be called for, but intends to use a cost-benefit approach in deciding whether they should be implemented. It specifically states that “[i]n order to progress with the Regulatory Analysis Stage, a comprehensive list of candidate plant backfits must be identified for subsequent value-impact analysis.”⁵ “Value-impact analysis” is the NRC’s terminology for a cost-benefit analysis.⁶ However, if backfitting for more severe earthquakes than were incorporated into the original design were *required* for safety rather than left to a cost-benefit analysis, the implications for comparison with the alternatives could be considerable for existing reactors in the Central and Eastern United States.

23. The Task Force noted that the same concern applies to flooding hazards, where “the assumptions and factors that were considered in flood protection at operating plants vary. In some cases, the design basis does not consider the probable maximum flood (PMF).” (p. 29) Again, protection of reactors against updated flood hazards could involve significant costs, depending on the outcome of the updated evaluations.

24. Finally, the Task Force Review points out the importance of considering mitigation measures associated with multi-unit events. Such events had not been considered before and therefore were assigned zero probability for all intents and purposes. The Task Force review recommends a revision of regulations to cover multi-unit events, for instance, to ensure adequate emergency core and spent fuel cooling for more than one unit at a time:

As part of the revision to 10 CFR 50.63, the NRC should require that the *equipment* and personnel necessary to implement the minimum and extended coping strategies shall include *sufficient capacity to provide core and spent fuel pool cooling, and reactor cooling system and primary containment integrity for all units at a multiunit facility*. The staff should also make the appropriate revisions to the definitions of “station blackout” and “alternate ac source” in 10 CFR 50.2. [p. 39, italics added]

Because most new applicants for COLs, such as Vogtle 3 and 4, propose to locate the new units at sites that already have reactors, the entire basis of emergency response adequacy, station-blackout related requirements, and emergency core and spent fuel pool cooling needs to be

⁴ *Implications of Updated Probabilistic Seismic Hazard Estimates in Central and Eastern United States on Existing Plants Safety/Risk Assessments*, Generic Issue 199 (GI-199), Nuclear Regulatory Commission, August 2010, at <http://pbadupws.nrc.gov/docs/ML1002/ML100270639.pdf>, p. 30

⁵ GI-199 p. 30

⁶ NRC guidelines require “that the value-impact of an alternative be quantified as the “net value” (or “net benefit”). To the extent possible, all attributes, whether values or impacts, are quantified in monetary terms and added together (with the appropriate algebraic signs) to obtain the net value in dollars. The net value calculation is generally favored over other measures, such as a value-impact ratio or internal rate of return (RWG 1996, Section III.A.2).” (*Regulatory Analysis Technical Evaluation Handbook: Final Report*, NUREG/BR-0184, Nuclear Regulatory Commission, Office of Nuclear Regulatory Research, January 1997, p. 5.2. Link at http://www.osti.gov/energycitations/product.biblio.jsp?osti_id=446391.

reconsidered for the total number of units proposed at the site. The design and cost implications could be significant and must be reconsidered and reevaluated.

Conclusions

25. I agree with the conclusions of the Task Force that significant changes to the NRC's regulatory system are needed in order to ensure that the operation of new reactors and re-licensed existing reactors does not pose unacceptable safety and environmental risks to the public. In light of the disastrous and ongoing events at Fukushima since March 11, 2011, it is clear that the issues of public safety raised by the Task Force are exceptionally grave. I also believe that it is highly likely that consideration of the Task Force's conclusions and recommendations in environmental analyses for new reactor licensing, existing reactor re-licensing, and design certification rulemakings, would materially affect the outcome of many and possibly all those studies.

The facts presented above are true and correct to the best of my knowledge, and the opinions expressed therein are based on my best professional judgment.



Dr. Arjun Makhijani

Date: 8 August 2011

6935 Laurel Avenue, Suite 201
Takoma Park, MD 20912

Phone: (301) 270-5500
FAX: (301) 270-3029
e-mail: ieer@ieer.org
<http://www.ieer.org>

Curriculum Vita of Arjun Makhijani

Address and Phone:

Institute for Energy and Environmental Research
6935 Laurel Ave., Suite 201
Takoma Park, MD 20912
Phone: 301-270-5500
e-mail: arjun@ieer.org
Website: www.ieer.org

A recognized authority on energy issues, Dr. Makhijani is the author and co-author of numerous reports and books on energy and environment related issues, including two published by MIT Press. He was the principal author of the first study of the energy efficiency potential of the US economy published in 1971. He is the author of *Carbon-Free and Nuclear-Free: A Roadmap for U.S. Energy Policy* (2007).

In 2007, he was elected Fellow of the American Physical Society. He was named a Ploughshares Hero, by the Ploughshares Fund (2006); was awarded the Jane Bagley Lehman Award of the Tides Foundation in 2008 and the Josephine Butler Nuclear Free Future Award in 2001; and in 1989 he received The John Bartlow Martin Award for Public Interest Magazine Journalism of the Medill School of Journalism, Northwestern University, with Robert Alvarez. He has many published articles in journals and magazines as varied as *The Bulletin of the Atomic Scientists*, *Environment*, *The Physics of Fluids*, *The Journal of the American Medical Association*, and *The Progressive*, as well as in newspapers, including the *Washington Post*.

Dr. Makhijani has testified before Congress, and has appeared on ABC World News Tonight, the CBS Evening News, CBS 60 Minutes, NPR, CNN, and BBC, among others. He has served as a consultant on energy issues to utilities, including the Tennessee Valley Authority, the Edison Electric Institute, the Lawrence Berkeley Laboratory, and several agencies of the United Nations.

Education:

- Ph.D. University of California, Berkeley, 1972, from the Department of Electrical Engineering. Area of specialization: plasma physics as applied to controlled nuclear fusion. Dissertation topic: multiple mirror confinement of plasmas. Minor fields of doctoral study: statistics and physics.
- M.S. (Electrical Engineering) Washington State University, Pullman, Washington, 1967. Thesis topic: electromagnetic wave propagation in the ionosphere.
- Bachelor of Engineering (Electrical), University of Bombay, Bombay, India, 1965.

Current Employment:

- 1987-present: President and Senior Engineer, Institute for Energy and Environmental Research, Takoma Park, Maryland. (part-time in 1987).
- February 3, 2004-present, Associate, SC&A, Inc., one of the principal investigators in the audit of the reconstruction of worker radiation doses under the Energy Employees Occupational Illness Compensation Program Act under contract to the Centers for Disease Control and Prevention, U.S. Department of Health and Human Services.

Other Long-term Employment

- 1984-88: Associate Professor, Capitol College, Laurel, Maryland (part-time in 1988).
- 1983-84: Assistant Professor, Capitol College, Laurel, Maryland.
- 1977-79: Visiting Professor, National Institute of Bank Management, Bombay, India. Principal responsibility: evaluation of the Institute's extensive pilot rural development program.
- 1975-87: Independent consultant (see page 2 for details)
- 1972-74: Project Specialist, Ford Foundation Energy Policy Project. Responsibilities included research and writing on the technical and economic aspects of energy conservation and supply in the U.S.; analysis of Third World rural energy problems; preparation of requests for proposals; evaluation of proposals; and the management of grants made by the Project to other institutions.
- 1969-70: Assistant Electrical Engineer, Kaiser Engineers, Oakland California. Responsibilities included the design and checking of the electrical aspects of mineral industries such as cement plants, and plants for processing mineral ores such as lead and uranium ores. Pioneered the use of the desk-top computer at Kaiser Engineers for performing electrical design calculations.

Professional Societies:

- Institute of Electrical and Electronics Engineers and its Power Engineering Society
- American Physical Society (Fellow)
- Health Physics Society
- American Association for the Advancement of Science

Awards and Honors:

- The John Bartlow Martin Award for Public Interest Magazine Journalism of the Medill School of Journalism, Northwestern University, 1989, with Robert Alvarez
- The Josephine Butler Nuclear Free Future Award, 2001
- Ploughshares Hero, Ploughshares Fund, 2006
- Elected a Fellow of the American Physical Society, 2007, “*For his tireless efforts to provide the public with accurate and understandable information on energy and environmental issues*”
- Jane Bagley Lehman Award of the Tides Foundation, 2007/2008

Invited Faculty Member, Center for Health and the Global Environment, Harvard Medical School: Annual Congressional Course, *Environmental Change: The Science and Human Health Impacts*, April 18-19, 2006, Lecture Topic: An Update on Nuclear Power - Is it Safe?

Consulting Experience, 1975-1987

Consultant on a wide variety of issues relating to technical and economic analyses of alternative energy sources; electric utility rates and investment planning; energy conservation; analysis of energy use in agriculture; US energy policy; energy policy for the Third World; evaluations of portions of the nuclear fuel cycle.

Partial list of institutions to which I was a consultant in the 1975-87 period:

- Tennessee Valley Authority
- Lower Colorado River Authority
- Federation of Rocky Mountain States
- Environmental Policy Institute
- Lawrence Berkeley Laboratory
- Food and Agriculture Organization of the United Nations
- International Labour Office of the United Nations
- United Nations Environment Programme
- United Nations Center on Transnational Corporations
- The Ford Foundation
- Economic and Social Commission for Asia and the Pacific
- United Nations Development Programme

Languages: English, French, Hindi, Sindhi, and Marathi.

Reports, Books, and Articles (Partial list)

(Newsletter, newspaper articles, excerpts from publications reprinted in books and magazines or adapted therein, and other similar publications are not listed below)

Hower, G.L., and A. Makhijani, "Further Comparison of Spread-F and Backscatter Sounder Measurements," *Journal of Geophysical Research*, 74, p. 3723, 1969.

Makhijani, A., and A.J. Lichtenberg, *An Assessment of Energy and Materials Utilization in the U.S.A.*, University of California Electronics Research Laboratory, Berkeley, 1971.

Logan, B. G., A.J. Lichtenberg, M. Lieberman, and A. Makhijani, "Multiple-Mirror Confinement of Plasmas," *Physical Review Letters*, 28, 144, 1972.

Makhijani, A., and A.J. Lichtenberg, "Energy and Well-Being," *Environment*, 14, 10, June 1972.

Makhijani, A., A.J. Lichtenberg, M. Lieberman, and B. Logan, "Plasma Confinement in Multiple Mirror Systems. I. Theory," *Physics of Fluids*, 17, 1291, 1974.

A Time to Choose: America's Energy Future, final report of the Ford Foundation Energy Policy Project, Ballinger, Cambridge, 1974. One of many co-authors.

Makhijani, A., and A. Poole, *Energy and Agriculture in the Third World*, Ballinger, Cambridge, 1975.

Makhijani, A., *Energy Policy for the Rural Third World*, International Institute for Environment and Development, London, 1976.

Kahn, E., M. Davidson, A. Makhijani, P. Caeser, and S. Berman, *Investment Planning in the Energy Sector*, Lawrence Berkeley Laboratory, Berkeley, 1976.

Makhijani, A., "Solar Energy for the Rural Third World," *Bulletin of the Atomic Scientists*, May 1977.

Makhijani, A., "Energy Policy for Rural India," *Economic and Political Weekly*, 12, Bombay, 1977.

Makhijani, A., *Some Questions of Method in the Tennessee Valley Authority Rate Study*, Report to the Tennessee Valley Authority, Chattanooga, 1978.

Makhijani, A., *The Economics and Sociology of Alternative Energy Sources*, Economic and Social Commission for Asia and the Pacific, 1979.

Makhijani, A., *Energy Use in the Post-Harvest Component of the Food Systems in Ivory Coast and Nicaragua*, Food and Agriculture Organization of the United Nations, Rome, 1982.

Makhijani, A., *Oil Prices and the Crises of Debt and Unemployment: Methodological and Structural Aspects*, International Labour Office of the United Nations, Final Draft Report, Geneva, April 1983.

Makhijani, A., and D. Albright, *The Irradiation of Personnel at Operation Crossroads*, International Radiation Research and Training Institute, Washington, D.C., 1983.

Makhijani, A., K.M. Tucker, with Appendix by D. White, *Heat, High Water, and Rock Instability at Hanford*, Health and Energy Institute, Washington, D.C., 1985.

Makhijani, A., and J. Kelly, *Target: Japan - The Decision to Bomb Hiroshima and Nagasaki*, July 1985, a report published as a book in Japanese under the title, Why Japan?, Kyoikusha, Tokyo, 1985.

Makhijani, A., *Experimental Irradiation of Air Force Personnel During Operation Redwing - 1956*, Environmental Policy Institute, Washington, D.C., 1985.

Makhijani, A., and R.S. Browne, "Restructuring the International Monetary System," *World Policy Journal*, New York, Winter, 1985-86.

Makhijani, A., R. Alvarez, and B. Blackwelder, *Deadly Crop in the Tank Farm: An Assessment of Management of High-Level Radioactive Wastes in the Savannah River Plant Tank Farm*, Environmental Policy Institute, Washington, D.C., 1986.

Makhijani, A., "Relative Wages and Productivity in International Competition," *College Industry Conference Proceedings*, American Society for Engineering Education, Washington, D.C., 1987.

Makhijani, A., *An Assessment of the Energy Recovery Aspect of the Proposed Mass Burn Facility at Preston, Connecticut*, Institute for Energy and Environmental Research, Takoma Park, 1987.

Makhijani, A., R. Alvarez, and B. Blackwelder, *Evading the Deadly Issues: Corporate Mismanagement of America's Nuclear Weapons Production*, Environmental Policy Institute, Washington, D.C., 1987.

Franke, B. and A. Makhijani, *Avoidable Death: A Review of the Selection and Characterization of a Radioactive Waste Repository in West Germany*, Health & Energy Institute, Washington, DC; Institute for Energy and Environmental Research, Takoma Park, November 1987.

Makhijani, A., *Release Estimates of Radioactive and Non-Radioactive Materials to the Environment by the Feed Materials Production Center, 1951-85*, Institute for Energy and Environmental Research, Takoma Park, 1988.

Alvarez, R., and A. Makhijani, "The Hidden Nuclear Legacy," *Technology Review*, 91, 42, 1988.

Makhijani, A., Annie Makhijani, and A. Bickel, *Saving Our Skins: Technical Potential and Policies for the Elimination of Ozone-Depleting Chlorine Compounds*, Environmental Policy Institute and Institute for Energy and Environmental Research, Takoma Park, 1988.

Makhijani, A., Annie Makhijani, and A. Bickel, *Reducing Ozone-Depleting Chlorine and Bromine Accumulations in the Stratosphere: A Critique of the U.S. Environmental Protection Agency's Analysis and Recommendations*, Institute for Energy and Environmental Research and Environmental Policy Institute/Friends of the Earth, Takoma Park, 1989.

Makhijani, A., and B. Franke, *Addendum to Release Estimates of Radioactive and Non-Radioactive Materials to the Environment by the Feed Materials Production Center, 1951-85*, Institute for Energy and Environmental Research, Takoma Park, 1989.

Makhijani, A., *Global Warming and Ozone Depletion: An Action Program for States*, Institute for Energy and Environmental Research, Takoma Park, 1989.

Makhijani, A., *Managing Municipal Solid Wastes in Montgomery County*, Prepared for the Sugarloaf Citizens Association, Institute for Energy and Environmental Research, Takoma Park, 1990.

Saleska, S., and A. Makhijani, *To Reprocess or Not to Reprocess: The Purex Question - A Preliminary Assessment of Alternatives for the Management of N-Reactor Irradiated Fuel at the*

U.S. Department of Energy's Hanford Nuclear Weapons Production Facility, Institute for Energy and Environmental Research, Takoma Park, 1990.

Makhijani, A., "Common Security is Far Off," *Bulletin of the Atomic Scientists*, May 1990.

Makhijani, A., *Draft Power in South Asian Agriculture: Analysis of the Problem and Suggestions for Policy*, prepared for the Office of Technology Assessment, Institute for Energy and Environmental Research, Takoma Park, 1990.

Mehta, P.S., S.J. Mehta, A.S. Mehta, and A. Makhijani, "Bhopal Tragedy's Health Effects: A Review of Methyl Isocyanate Toxicity," *JAMA* 264, 2781, December 1990.

Special Commission of International Physicians for the Prevention of Nuclear War and the Institute for Energy and Environmental Research, *Radioactive Heaven and Earth: The Health and Environmental Effects of Nuclear Weapons Testing In, On, and Above the Earth*, Apex Press, New York, 1991. One of many co-authors.

Makhijani, A., and S. Saleska, *High Level Dollars Low-Level Sense: A Critique of Present Policy for the Management of Long-Lived Radioactive Waste and Discussion of an Alternative Approach*, Apex Press, New York, 1992.

Makhijani, A., *From Global Capitalism to Economic Justice: An Inquiry into the Elimination of Systemic Poverty, Violence and Environmental Destruction in the World Economy*, Apex Press, New York, 1992.

Special Commission of International Physicians for the Prevention of Nuclear War and the Institute for Energy and Environmental Research, *Plutonium: Deadly Gold of the Nuclear Age*, International Physicians Press, Cambridge, MA, 1992. One of several co-authors.

Makhijani, A., "Energy Enters Guilty Plea," *Bulletin of the Atomic Scientists*, March/April 1994.

Makhijani, A., "Open the Files," *Bulletin of the Atomic Scientists*, Jan./Feb. 1995.

Makhijani, A., "'Always' the Target?" *Bulletin of the Atomic Scientists*, May/June 1995.

Makhijani, A., and Annie Makhijani, *Fissile Materials in a Glass, Darkly: Technical and Policy Aspects of the Disposition of Plutonium and Highly Enriched Uranium*, IEER Press, Takoma Park, 1995.

Makhijani, A., and K. Gurney, *Mending the Ozone Hole: Science, Technology, and Policy*, MIT Press, Cambridge, MA, 1995.

Makhijani, A., H. Hu, K. Yih, eds., *Nuclear Wastelands: A Global Guide to Nuclear Weapons Production and the Health and Environmental Effects*, MIT Press, Cambridge, MA, 1995.

Zerriffi, H., and A. Makhijani, *The Nuclear Safety Smokescreen: Warhead Safety and Reliability and the Science Based Stockpile Stewardship Program*, Institute for Energy and Environmental Research, Takoma Park, May 1996.

Zerriffi, H., and A. Makhijani, "The Stewardship Smokescreen," *Bulletin of the Atomic Scientists*, September/October 1996.

Makhijani, A., *Energy Efficiency Investments as a Source of Foreign Exchange*, prepared for the International Energy Agency Conference in Chelyabinsk, Russia, 24-26 September 1996.

Makhijani, A., "India's Options," *Bulletin of the Atomic Scientists*, March/April 1997.

Ortmeyer, P. and A. Makhijani, "Worse than We Knew," *Bulletin of the Atomic Scientists*, November/December 1997.

Fioravanti, M., and A. Makhijani, *Containing the Cold War Mess: Restructuring the Environmental Management of the U.S. Nuclear Weapons Complex*, Institute for Energy and Environmental Research, Takoma Park, October 1997.

Principal author of three chapters in Schwartz, S., ed., *Atomic Audit: The Costs and Consequences of U.S. Nuclear Weapons Since 1940*, Brookings Institution, Washington, D.C., 1998.

Franke, B., and A. Makhijani, *Radiation Exposures in the Vicinity of the Uranium Facility in Apollo, Pennsylvania*, Institute for Energy and Environmental Research, Takoma Park, February 2, 1998.

Fioravanti, M., and A. Makhijani, *Supplement to Containing the Cold War Mess - IEER's Response to the Department of Energy's Review*, Institute for Energy and Environmental Research, Takoma Park, March 1998.

Makhijani, A., "A Legacy Lost," *Bulletin of the Atomic Scientists*, July/August 1998.

Makhijani, A., and Hisham Zerriffi, *Dangerous Thermonuclear Quest: The Potential of Explosive Fusion Research for the Development of Pure Fusion Weapons*, Institute for Energy and Environmental Research, Takoma Park, July 1998.

Makhijani, A., and Scott Saleska, *The Nuclear Power Deception - U.S. Nuclear Mythology from Electricity "Too Cheap to Meter" to "Inherently Safe" Reactors*, Apex Press, New York, 1999.

Makhijani, A., "Stepping Back from the Nuclear Cliff," *The Progressive*, vol. 63, no. 8, August 1999.

Makhijani, A., Bernd Franke, and Hisham Zerriffi, *Preliminary Partial Dose Estimates from the Processing of Nuclear Materials at Three Plants during the 1940s and 1950s*, Institute for Energy and Environmental Research, Takoma Park, September 2000. (Prepared under contract to the newspaper USA Today.)

Makhijani, A., and Bernd Franke, *Final Report of the Institute for Energy and Environmental Research on the Second Clean Air Act Audit of Los Alamos National Laboratory by the Independent Technical Audit Team*, Institute for Energy and Environmental Research, Takoma Park, December 13, 2000.

Makhijani, A., *Plutonium End Game: Managing Global Stocks of Separated Weapons-Usable Commercial and Surplus Nuclear Weapons Plutonium*, Institute for Energy and Environmental Research, Takoma Park, January 2001.

Makhijani, A., Hisham Zerriffi, and Annie Makhijani, "Magical Thinking: Another Go at Transmutation," *Bulletin of the Atomic Scientists*, March/April 2001.

Makhijani, A., *Ecology and Genetics: An Essay on the Nature of Life and the Problem of Genetic Engineering*. New York: Apex Press, 2001.

Makhijani, A., "Burden of Proof," *Bulletin of the Atomic Scientists*, July/August 2001.

Makhijani, A., "Reflections on September 11, 2001," in Kamla Bhasin, Smitu Kothari, and Bindia Thapar, eds., *Voices of Sanity: Reaching Out for Peace*, Lokayan, New Delhi, 2001, pp. 59-64.

Makhijani, A., and Michele Boyd, *Poison in the Vadose Zone: An examination of the threats to the Snake River Plain aquifer from the Idaho National Engineering and Environmental Laboratory*, Institute for Energy and Environmental Research, Takoma Park, October 2001.

Makhijani, A., *Securing the Energy Future of the United States: Securing the Energy Future of the United States: Oil, Nuclear, and Electricity Vulnerabilities and a post-September 11, 2001 Roadmap for Action*, Institute for Energy and Environmental Research, Takoma Park, November 2001.

Makhijani, A., and Sriram Gopal, *Setting Cleanup Standards to Protect Future Generations: The Scientific Basis of Subsistence Farmer Scenario and Its Application to the Estimation of Radionuclide Soil Action Levels (RSALs) for Rocky Flats*, Institute for Energy and Environmental Research, Takoma Park, December 2001.

Makhijani, A., "Some Factors in Assessing the Response to September 11, 2001," *Medicine and Global Survival*, International Physicians for the Prevention of Nuclear War, Cambridge, Mass., February 2002.

Makhijani, Annie, Linda Gunter, and A. Makhijani, *Cogema: Above the Law?: Concerns about the French Parent Company of a U.S. Corporation Set to Process Plutonium in South Carolina*. A report prepared by Institute for Energy and Environmental Research and Safe Energy Communication Council. Takoma Park, MD, May 7, 2002.

Deller, N., A. Makhijani, and J. Burroughs, eds., *Rule of Power or Rule of Law? An Assessment of U.S. Policies and Actions Regarding Security-Related Treaties*, Apex Press, New York, 2003.

Makhijani, A., "Nuclear targeting: The first 60 years," *Bulletin of the Atomic Scientists*, May/June 2003.

Makhijani, A., "Strontium," *Chemical & Engineering News*, September 8, 2003.

Makhijani, A., and Nicole Deller, *NATO and Nuclear Disarmament: An Analysis of the Obligations of the NATO Allies of the United States under the Nuclear Non-Proliferation Treaty and the Comprehensive Test Ban Treaty*, Institute for Energy and Environmental Research, Takoma Park, Maryland, October 2003.

Makhijani, A., *Manifesto for Global Democracy: Two Essays on Imperialism and the Struggle for Freedom*, Apex Press, New York, 2004.

Makhijani, A., "Atomic Myths, Radioactive Realities: Why nuclear power is a poor way to meet energy needs," *Journal of Land, Resources, & Environmental Law*, v. 24, no. 1, 2004, pp. 61-72. Adapted from an oral presentation given on April 18, 2003, at the Eighth Annual Wallace Stegner Center Symposium titled "Nuclear West: Legacy and Future," held at the University of Utah S.J. Quinney College of Law."

Makhijani, A., and Michele Boyd, *Nuclear Dumps by the Riverside: Threats to the Savannah River from Radioactive Contamination at the Savannah River Site*, Institute for Energy and Environmental Research, Takoma Park, Maryland, March 2004.

Makhijani, A., and Brice Smith, *The Role of E.I. du Pont de Nemours and Company (DuPont) and the General Electric Company in Plutonium Production and the Associated I-131 Emissions from the Hanford Works*, Institute for Energy and Environmental Research, Takoma Park, Maryland, March 30, 2004.

Makhijani, A., Peter Bickel, Aiyou Chen, and Brice Smith, *Cash Crop on the Wind Farm: A New Mexico Case Study of the Cost, Price, and Value of Wind-Generated Electricity*, Institute for Energy and Environmental Research, Takoma Park, Maryland, April 2004.

Makhijani, A., Lois Chalmers, and Brice Smith, *Uranium Enrichment: Just Plain Facts to Fuel an Informed Debate on Nuclear Proliferation and Nuclear Power*, Institute for Energy and Environmental Research, Takoma Park, Maryland, October 15, 2004.

Makhijani, A., and Brice Smith, *Costs and Risks of Management and Disposal of Depleted Uranium from the National Enrichment Facility Proposed to be Built in Lea County New Mexico by LES*, Institute for Energy and Environmental Research, Takoma Park, Maryland, November 24, 2004.

Makhijani, A., project director, *Examen critique du programme de recherche de l'ANDRA pour déterminer l'aptitude du site de Bure au confinement géologique des déchets à haute activité et à vie longue: Rapport final*, prepared for le Comité ocal d'Information et de Suivi; coordinator: Annie Makhijani; authors: Detlef Appel, Jaak Daemen, George Danko, Yuri Dublyansky, Rod Ewing, Gerhard Jentzsch, Horst Letz, Arjun Makhijani, Institute for Energy and Environmental Research, Takoma Park, Maryland, December 2004

Institute for Energy and Environmental Research, *Lower Bound for Cesium-137 Releases from the Sodium Burn Pit at the Santa Susana Field Laboratory*, IEER, Takoma Park, Maryland, January 13, 2005. (Authored by A. Makhijani and Brice Smith.)

Institute for Energy and Environmental Research, *Iodine-131 Releases from the July 1959 Accident at the Atomics International Sodium Reactor Experiment*, IEER, Takoma Park, Maryland, January 13, 2005. (Authored by A. Makhijani and Brice Smith.)

Makhijani, A., and Brice Smith. *Update to Costs and Risks of Management and Disposal of Depleted Uranium from the National Enrichment Facility Proposed to be Built in Lea County New Mexico by LES*. Institute for Energy and Environmental Research, Takoma Park, Maryland, July 5, 2005.

Makhijani, A., "A Readiness to Harm: The Health Effects of Nuclear Weapons Complexes," *Arms Control Today*, 35, July/August 2005.

Makhijani, A., *Bad to the Bone: Analysis of the Federal Maximum Contaminant Levels for Plutonium-239 and Other Alpha-Emitting Transuranic Radionuclides in Drinking Water*, Institute for Energy and Environmental Research, Takoma Park, Maryland, August 2005.

Makhijani, A., and Brice Smith, *Dangerous Discrepancies: Missing Weapons Plutonium in Los Alamos National Laboratory Waste Accounts*, Institute for Energy and Environmental Research, Takoma Park, Maryland, April 21, 2006.

Makhijani, Annie, and A. Makhijani, *Low-Carbon Diet without Nukes in France: An Energy Technology and Policy Case Study on Simultaneous Reduction of Climate Change and Proliferation Risks*, Institute for Energy and Environmental Research, Takoma Park, Maryland, May 4, 2006.

Makhijani, Annie, and A. Makhijani. *Shifting Radioactivity Risks: A Case Study of the K-65 Silos and Silo 3 Remediation and Waste Management at the Fernald Nuclear Weapons Site*, Institute for Energy and Environmental Research, Takoma Park, Maryland, August 2006.

Smith, Brice, and A. Makhijani, "Nuclear is Not the Way," *Wilson Quarterly*, v.30, p. 64, Autumn 2006.

Makhijani, A., Brice Smith, and Michael C. Thorne, *Science for the Vulnerable: Setting Radiation and Multiple Exposure Environmental Health Standards to Protect Those Most at Risk*, Institute for Energy and Environmental Research, Takoma Park, Maryland, October 19, 2006.

Makhijani, A., *Carbon-Free and Nuclear Free: A Roadmap for U.S. Energy Policy*, IEER Press, Takoma Park, Maryland; RDR Books, Muskegon, Michigan, 2007.

Makhijani, A., *Assessing Nuclear Plant Capital Costs for the Two Proposed NRG Reactors at the South Texas Project Site*, Institute for Energy and Environmental Research, Takoma Park, Maryland, March 24, 2008.

Makhijani, A., *Energy Efficiency Potential: San Antonio's Bright Energy Future*, Institute for Energy and Environmental Research, Takoma Park, Maryland, October 9, 2008.

Makhijani, A., *The Use of Reference Man in Radiation Protection Standards and Guidance with Recommendations for Change*, Institute for Energy and Environmental Research, Takoma Park, Maryland, December 2008.

Makhijani, A., *Comments of the Institute for Energy and Environmental Research on the U.S. Nuclear Regulatory Commission's Proposed Waste Confidence Rule Update and Proposed Rule Regarding Environmental Impacts of Temporary Spent Fuel Storage*, Institute for Energy and Environmental Research, Takoma Park, Maryland, February 6, 2009.

Makhijani, A., *Technical and Economic Feasibility of a Carbon-Free and Nuclear-Free Energy System in the United States*, Institute for Energy and Environmental Research, Takoma Park, Maryland, March 4, 2009.

Fundación Ideas para el Progreso, *A New Energy Model For Spain: Recommendations for a Sustainable Future* (originally: *Un nuevo modelo energético para España: Recomendaciones para un futuro sostenible*), by the Working Group of Foundation Ideas for Progress on Energy and Climate Change, Fundación Ideas , Madrid, May 20, 2009. Arjun Makhijani contributed Section 2.2. The cost of nuclear energy and the problem of waste.

Makhijani, A., *IEER Comments on the Nuclear Regulatory Commission's Rulemaking Regarding the "Safe Disposal of Unique Waste Streams Including Significant Quantities of Depleted Uranium,"* Institute for Energy and Environmental Research, Takoma Park, Maryland, October 30, 2009.

Makhijani, A., *The Mythology and Messy Reality of Nuclear Fuel Reprocessing*, Institute for Energy and Environmental Research, Takoma Park, Maryland, April 8, 2010.

CV updated October 11, 2010

SunPine Consulting

3517 Elderview Dr. Chattanooga, TN 37419 423-821-0981 rm@sunpine.us

**Declaration of Dr. Ross McCluney
Regarding Environmental and Safety Issues at Nuclear Power Plants
Based on Events at Fukushima and the Findings of the NRC Interim Task Force**

I, Ross McCluney, make the following declarations:

Brief Statement of Professional Qualifications

1. My scientific career has spanned three and a half decades and several disciplines. For my B. A. degree earned at Rhodes College in Memphis I studied physics, mathematics, economics, philosophy, English literature, and religion. As part of my undergraduate coursework, I also learned the rudiments of nuclear physics, operated a nuclear particle detector, and briefly studied the health effects of ionizing radiation. My M.S. thesis research at the University of Tennessee in Knoxville dealt with the diffraction of laser light by high frequency sound waves in water. I studied the new field of holography at the University of Rochester's Institute of Optics, then pioneered the use of holographic interferometry for diagnostic tests of optical systems. This work continued while I pursued a Ph.D. degree on both NASA and National Science Foundation fellowships at the University of Miami, developing a complex holographic interferometer for detecting minute changes in gas density inside a test cell made of optically imperfect clear acrylic plastic. I interrupted my physics studies for a year to do a graduate assistantship at the University's Center for Urban and Environmental Studies, working under noted ecologist Arthur Marshall. Upon return to my Ph.D. dissertation research, I studied optical oceanography and completed my Ph.D. dissertation on light scattering by marine phytoplankton.

2. Following receipt of my doctorate in physics, I worked for three years as an optical oceanographer in the Hydrology and Oceanography Branch at NASA's Goddard Space Flight Center in Greenbelt, MD, occasionally working with Jacques Cousteau on joint NASA/Cousteau projects.

3. From 1976 to 2007 I was a Principal Research Scientist at the Florida Solar Energy Center, a research institute of the University of Central Florida.

4. I have authored many publications including:
 - *Introduction to Radiometry and Photometry*, textbook published by Artech House, 1992
 - *Humanity's Environmental Future: Making Sense in a Troubled World*, SunPine Press, Cape Canaveral, Florida, © 2004
 - *Getting to the Source: Readings on Environmental Values*, SunPine Press, Cape Canaveral, Florida, © 2004

5. Since 2007 I have done technical work at SunPine Consulting and environmental work through the Solar Valley Coalition, the Cherokee Group of the Tennessee Chapter of the Sierra Club, the Southern Alliance for Clean Energy and as a co-founder of the BEST chapter of Blue Ridge Environmental Defense League.

Seismicity, Hydrology and Inland Seiches

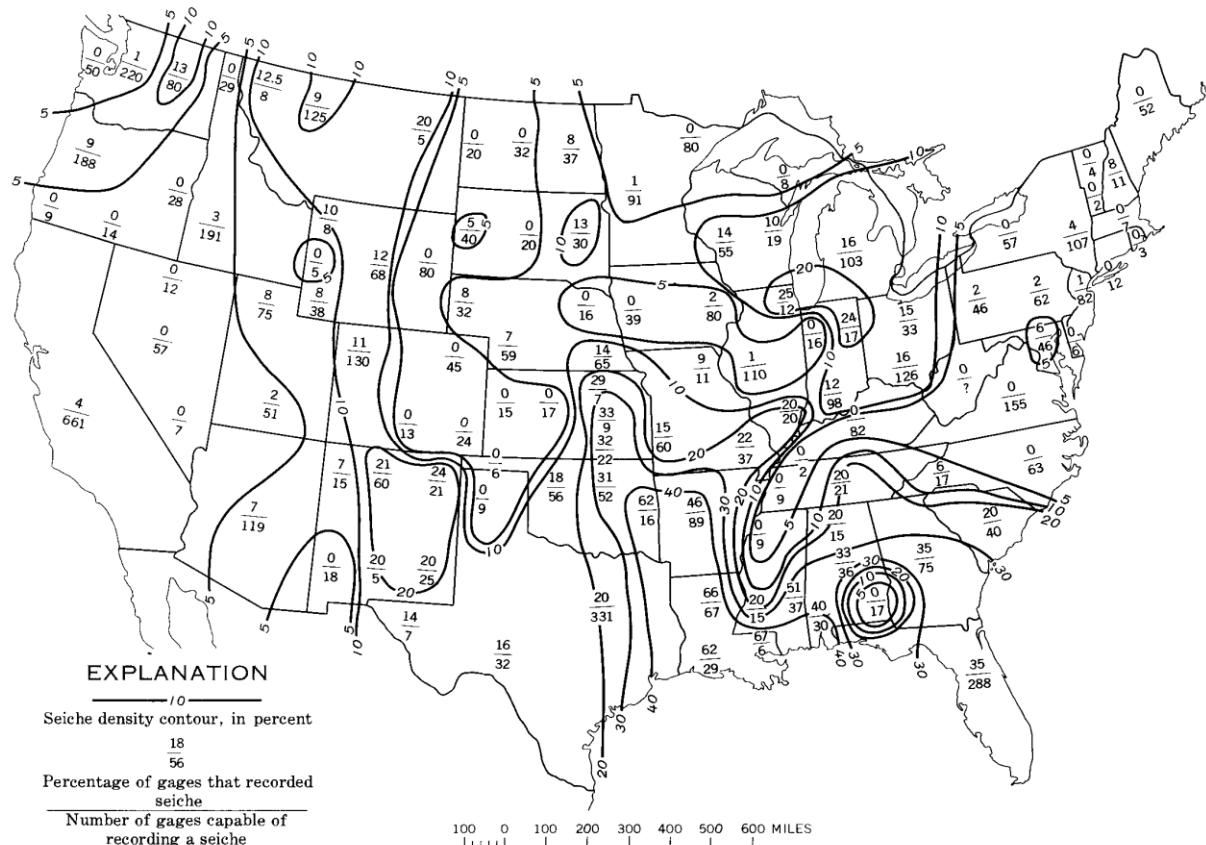
6. Seismic seiches are standing waves on rivers, reservoirs and lakes caused by disturbances from tectonic activity and earthquakes. Seismic seiches may occur at great distances from the epicenter of the initiating seismic event; they are continental and even global in their effect on bodies of water.

7. For example, the Alaska earthquake of March 1964 caused seismic seiches in water bodies across North America. The impact on the hydrologic regimen in the coterminous United States was detailed in a 1968 US Geological Survey report.¹ Surface water gauges at 850 stations in North America and 4 in Australia registered seiches from the 1964 quake.

8. The locus of the greatest density of seiches caused by the Alaska Earthquake was the southeastern United States, with the greatest number in the states bordering the Gulf of Mexico. According to the USGS report, seiches as high as 1.8 meters were registered on the Gulf Coast. The prevalence of seismic seiches in the Southeast is illustrated on the map of the United States *infra* on which was recorded the percentage of surface water gauges that recorded seiches subsequent to the 1964 Alaska earthquake.

SEISMIC SEICHES

E11



6.—Map of conterminous United States showing seiche density, in percent, by State and by river basin.

¹ *Seismic Seiches From the March 1964 Alaska Earthquake*, McGarr A and Vorhis RC, US Geological Survey Professional Paper No. 544-E, 1968

9. The geographic pattern of seiches of the Alaska earthquake did not depend on distance from the epicenter. Rather, geologic features were deemed to be the principal factor in determining where and how strong the oscillations of surface waters would be. The most influential geologic features are: thickness of surface sediments, thrust faults and structural basins. The thick surface sediments of the Mississippi Delta promoted seiches in that region. The USGS report identified Georgia's Brevard Fault region, the Arkansas-Oklahoma Ouachita Mountains and the Tennessee-Alabama Valley and Ridge province as having thrust faults conducive to seismic seiches.

10. The 1964 Alaska earthquake was measured at 8.4 on the Richter scale. The 2002 Denali earthquake was one of the largest inland quakes recorded in North America. In the Southeast, an earthquake in 1903 centered in the Savannah River area was recorded at an intensity of VI (Mercalli). In 1924 an earthquake affecting an area of 50,000 square miles shook most of South Carolina. In 1945 a shock centered west of Columbia, SC was felt as far away as Georgia and Tennessee. A magnitude 3.4 (Richter scale) earthquake was centered near Orangeburg, SC in 1971. The Charleston, South Carolina earthquake of 1886 had a magnitude of 7.3 (Johnson, 1996) and was felt over 2.5 million square miles, from Cuba to New York, and Bermuda to the Mississippi River.²

11. Earthquakes and lower-power tremors can certainly have serious impacts near to their occurrences, but earth movements can also be produced at substantial distances from the epicenters, as evidenced by the recorded history of seiches outlined above. Subsurface geological conditions at and near nuclear sites in the U.S. can make such sites vulnerable to subsidence, lateral movement, and other potentially disruptive ground disturbances.

12. Additional work is needed to identify potential subsurface threats to plant safety in the event of seismic activity at and around nuclear sites. Karst formations, in particular, should not escape scrutiny, due to their general instability. Engineers responsible for stormwater management are particularly aware of the susceptibility of such formations. Consider the following caution in the Abstract of the 1999 report "Geotechnical Engineering Considerations For Stormwater Management In Karst Terrain" by Mark R. Ralston, and Issa S. Oweis.

Soluble bedrock (karst) settings can present a unique set of stormwater management challenges to planners and developers. Sinkholes and land subsidence are two common occurrences in such settings, and stormwater management activities often affect the development of these natural phenomena. An understanding of the natural and anthropogenic conditions that can affect the expression of karst features is important to the design and implementation of stormwater management facilities such as stormwater collection systems, stormwater routing, detention/retention basins, sinkhole/subsidence remediation efforts, and other engineering activities.³

² South Carolina Emergency Management Division has responsibility for the development, coordination, and maintenance of the Earthquake Plan and selected other plans,

http://www.scemd.org/news/publications/EQ%20Guide%202008/1886_EQ_New_08.html

³ Mark R. Ralston, and Issa S. Oweis, "Geotechnical Engineering Considerations For Stormwater Management In Karst Terrain." 1999 Southeastern Pennsylvania Stormwater Management Symposium -- Implementing Best Management Practices, Villanova University, Villanova, Pennsylvania. October 20-21, 1999,

For example, the Bellefonte nuclear generator site on the Tennessee River in northeastern Alabama is known for its nearby Karst formations.⁴

Earthquakes Cannot Be Predicted

13. An earthquake is an unpredictable event. This fact was made clear by the Fukushima disaster which occurred in an area with a known seismic history and to a society well adapted to living on the fault line, but the earthquake and resulting tsunami exceeded expected consequences. It does not take oceanic tsunamis to produce potentially serious localized flooding following geologic shifts, in areas adjacent to or surrounded by rivers, reservoirs, and lakes, including those formed by dams. Even modern science and engineering are no match for tectonic movement:

An earthquake results from sudden slip on a geological fault. Such fracture and failure problems are notoriously intractable. The heterogeneous state of the Earth and the inaccessibility of the fault zone to direct measurement impose further difficulties. Except during a brief period in the 1970s, the leading seismological authorities of each era have generally concluded that earthquake prediction is not feasible. Richter, developer of the eponymous magnitude scale, commented as follows in 1977: "Journalists and the general public rush to any suggestion of earthquake prediction like hogs toward a full trough... [Prediction] provides a happy hunting ground for amateurs, cranks, and outright publicity-seeking fakers"⁵

14. Charles Richter, California Institute of Technology professor of seismology, spent most of his professional life in this field. He assisted officials in Japan and California with earthquake engineering and safety preparations. His description of earthquake "prediction" needs to be taken seriously by Nuclear Regulatory Commission decision makers.

NRC Task Force Orders Should Preclude Further Action on Reactor Licensing

15. The Near-term Task Force Review⁶ provides guidance and recommends specific orders to be implemented by the Nuclear Regulatory Commission. The NRC should execute these orders before allowing any nuclear power plant license to proceed. The three orders recommended by the Task Force which are directed towards seismic and hydrology issues are:

- Order licensees to reevaluate the seismic and flooding hazards at their sites against current NRC requirements and guidance, and, if necessary, update the design basis and SSCs important to safety to protect against the updated hazards. (Section 4.1.1—detailed recommendation 2.1)
- Order licensees to perform seismic and flood protection walkdowns to identify and address plant-specific vulnerabilities and verify the adequacy of monitoring and maintenance for protection features such as watertight barriers and seals in the interim period until longer term

⁴ The New World Encyclopedia at http://www.newworldencyclopedia.org/entry/Karst_topography

⁵ Geller RJ et al, "Earthquakes Cannot Be Predicted," Volume 275, Number 5306, pp. 1616, 1996, The American Association for the Advancement of Science, <http://scec.ess.ucla.edu/~ykagan/perspective.html>

⁶ Recommendations for Enhancing Reactor Safety in the 21st Century: The Near-term Task Force Review of Insights from the Fukushima Da-ichi Accident, July 12, 2011

actions are completed to update the design basis for external events. (Section 4.1.1—detailed recommendation 2.3)

- Order licensees to provide reasonable protection for equipment currently provided pursuant to 10 CFR 50.54(hh)(2) from the effects of design-basis external events and to add equipment as needed to address multiunit events while other requirements are being revised and implemented. (Section 4.2.1—detailed recommendation 4.2)

In my opinion, these orders should be implemented by the Commission immediately.



11 August 2011

Ross McCluney

Date

Curriculum Vitae of Ross McCluney

Dr. Ross McCluney is a nationally recognized scientist, author, and speaker. His research specialties include optical system design and evaluation, building window solar radiation analysis, solar cooker and solar water distillation system design. He has collaborated with artist Susan Miller on the design and fabrication of artistic sundials for public spaces (www.sunpath-designs.com). Since the first Earth Day in 1970—when he was a leader in the University of Miami's observance of that event—he has been writing and speaking on environmental issues for a variety of audiences.

As an optical physicist McCluney's interests are in the optical and illumination performances of a variety of novel solar lighting systems, including the relatively new tubular skylight products being marketed by several companies.

Dr. McCluney served as technical consultant on the design and construction of the world's largest sundial at Walt Disney World and smaller ones at the University of Texas Pan American Campus in Edinburg and at the Council Bluffs Public Library in Council Bluffs, Iowa. Dr. McCluney provides technical consulting services to private and governmental organizations in a variety of areas.

He has written more than 60 technical papers—including several papers for general audiences on environmental ethics—and four books. He has taught both undergraduate and graduate courses at the college and university levels. He supervised the M.S. thesis research of several students at Florida Institute of Technology in Melbourne.

His primary interest is in the energy and illumination performance of fenestrations systems, but he also pursues work in the optical aspects of solar energy collection as well as issues of energy and environmental policy, including environmental ethics and scientific responsibility. He has served on the Boards of Directors of Indian River Audubon Society and Florida Audubon Society.

Dr. McCluney's research activities in fenestration have received national and international recognition. He is past chairman of ASHRAE Technical Committee on fenestration; a member of the daylighting committee of the Illumination Engineering Society; a member and technical consultant of the U.S. National Committee on Interior Lighting of the International Lighting Commission (CIE), and a past member of the CIE's technical committee on international daylight and solar radiation measurements. He has authored over 70 papers and four books, on both technical and environmental topics. His textbook *Introduction to Radiometry and Photometry* was published by Artech House in 1994.

Dr. McCluney obtained a Bachelor's Degree in physics from Rhodes College in Memphis and his Master's Degree in physics from the University of Tennessee. His research at the University of Tennessee involved the diffraction of light by sound waves. From 1966 to 1967, he worked as a development engineer for Eastman Kodak Company in Rochester, New York, and developed a holographic interferometer for testing optical systems. He used this technique at the University

of Miami in Coral Gables, Florida to develop a ten-pass holographic interferometer for measuring very small changes in optical systems.

Dr. McCluney received his Ph.D. in physics from the University of Miami in 1973. His dissertation research was based on the scattering of light by marine organisms. He worked as a research scientist in optical oceanography in the Hydrology and Oceanography Branch of NASA's Goddard Space Flight Center in Greenbelt, Maryland, from 1973 to 1976. Dr. McCluney's work there focused on the remote measurement of ocean color.

He has served as a consultant to Kenergy Corporation, 3M Company, Syracuse Research Institute, the Dade County Florida Department of Parks and Recreation, Public Works Canada, Synertech Corporation, T. J. Bottom Industries, New York State Psychiatric Institute, Verosol-USA, U. S. Office of Energy-Related Inventions, National Institute of Standards and Technology, Holder Construction Company (builder of the Team Disney Building and North and South America's largest sundial, Lake Buena Vista, FL), BRW Architects, Queens University in Kingston, Ontario, Canada, Kell, Munoz, Wigodsky Architects, San Antonio, Morrison Associates Sundials, the U.S. Department of Justice, and Cardinal Glass Industries.

He currently serves as V.P. of Research and Development and a Director of the Sunflower Corporation of Boulder, CO as well as a member of the Board of Directors of the National Fenestration Rating Council.

Blue Ridge Environmental Defense League

www.BREDL.org 3417 Sutton Place Augusta, Georgia 30906 Phone: (706) 772-5558 E-mail: cutley@paine.edu

Declaration of Rev. Charles N. Utley Regarding Environmental Justice and Emergency Response Issues at Plant Vogtle Electric Generating Plant Based on Events at Fukushima and the Findings of the NRC Interim Task Force

Rev. Charles N. Utley
3417 Sutton Place, Augusta, GA 30906
cutley@paine.edu
(706) 772-5558

I, Charles N. Utley, make the following declarations:

Brief Statement of Professional Qualifications

I served on the National Environmental Justice Advisory Council to write Executive Order No. 12898: "Federal Actions to Address Environmental Justice in Minority Populations and Low-income populations."

I was invited to address President Obama's Blue Ribbon Commission on America's Nuclear Future regarding Environmental Perspectives at their meeting on January 7, 2011.

I introduced and developed the EPA Brownfields Institute Program for the City of Augusta, Georgia, Richmond County, and serve as chair of the CSRA Brownfields Commission.

I serve as a lecturer for the Environmental Justice Program at Paine College, Augusta, GA

Environmental Justice

Environmental Justice means seeking to avoid disproportionate adverse environmental impacts on low income populations and minority communities.

The stated purpose of the Obama Administration's August 4, 2011 Memorandum of Understanding is "To declare the continued importance of identifying and addressing environmental justice considerations in agency programs, policies, and activities as provided in President Clinton's Executive Order 12898, including as to agencies not already covered by the Order."¹

¹ "Memorandum of Understanding on Environmental Justice and Executive Order 12898," August 4, 2011

The August 4th Memorandum of Understanding advances federal agency responsibilities first outlined in the 1994 Executive Order 12898, “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations.” The Executive Order makes environmental justice integral to the mission of each agency. The MOU broadens the reach of the Interagency Working Group on Environmental Justice, including federal agencies not part of the 1994 Executive Order and providing for the addition of more. The MOU strengthens environmental justice efforts under the National Environmental Policy Act and Title VI of the Civil Rights Act of 1964. At present, the White House Council on Environmental Quality, the General Services Administration, the Small Business Administration and thirteen cabinet departments² have signed the MOU.

NRC Fails to Fulfill its Commitment to Environmental Justice

The Nuclear Regulatory Commission has side-stepped Clinton’s Executive Order and ignored Obama’s Memorandum of Understanding. The NRC has not fulfilled the commitment made by Chairman Ivan Selin that NRC would carry out Executive Order 12898.³ In 1997 Office of Nuclear Material Safety and Safeguards and the Office of Nuclear Reactor Regulation did develop their own environmental justice guidance, NUREG-1748 and LIC-203,⁴ but the NRC has failed to properly address environmental justice in licensing decisions made since the Executive Order. Public interest group comments submitted to the NRC accurately described the agency’s failure.

The NRC’s Draft Policy Statement on the Treatment of Environmental Justice Matters in NRC Regulatory and Licensing Actions is virtually devoid of affirmative policies for considering environmental justice issues in the NEPA decision-making process. Instead, it is a catalogue of the ways in which the NRC does *not* plan to consider environmental justice issues. Moreover, the NRC’s rationale for refusing to consider discrimination in the NEPA decision-making is not supportable.⁵

The NRC has subverted the Executive Order by downplaying its purpose and scope. In 2003, in an attempt to dispose of the thorny EJ issues raised by its licensing actions,⁶ the

² Department of Health and Human Services; Department of Justice; Department of Agriculture; Department of Commerce; Department of Defense; Department of Education; Department of Energy; Department of Homeland Security; Department of Housing and Urban Development; Department of Interior; Department of Labor; Department of Transportation; Department of Veterans Affairs

³ Letter to President Clinton from NRC Chairman Ivan Selin, March 31, 1994

⁴ See NUREG-1748, “Environmental Review Guidance for Licensing Actions Associated with NMSS Programs,” August 22, 2003 (ADAMS Accession No. ML032450279) and NRR Office Instruction, LIC-203, Procedural Guidance for Preparing Environmental Assessments and Considering Environmental Issues (June 21, 2001) (ADAMS Accession No. ML011710073)

⁵ Comments by Nuclear Information and Resource Service on US Nuclear Regulatory Commission’s Draft Policy Statement on the Treatment of Environmental Justice Matters in NRC Regulatory and Licensing Actions, Diane Curran, Esq. and Michael Marriotte, Executive Director, February 3, 2004, <http://www.nirs.org/ejustice/nrc/commentsonejpolicy2304.htm>

⁶ See Louisiana Energy Services (Claiborne Enrichment Center), CLI-98-3, 47 NRC 77 (1998) and PFS (Independent Spent Fuel Storage Installation), CLI-02-20, 56 NRC 147, 153–55 (2002)

NRC published the following statement:

The E.O. simply serves as a reminder to agencies to become aware of the various demographic and economic circumstances of local communities as part of any socioeconomic analysis that might be required by NEPA.⁷

However, the President's Executive Order was not simply a reminder. It was not a proclamation. Executive Orders are policy directives that implement or interpret a federal statute, a constitutional provision, or a treaty. The power to issue them comes from the U.S. Constitution.

Executive Order 12898 states:

To the greatest extent practicable and permitted by law, and consistent with the principles set forth in the report on the National Performance Review, each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States.⁸

According to Dr. Robert Bullard, the Order was put to the test in rural Louisiana. Citizens Against Nuclear Trash charged NRC and Louisiana Energy Services with environmental racism because of their selection of a site for a uranium enrichment plant. In 1997 the Atomic Safety and Licensing Board concluded that "Racial bias played a role in the selection process." The judges chastised NRC staff for failing to address the provisions of Executive Order 12898; the decision was upheld on appeal.⁹

The NRC must take steps to avoid disproportionate, adverse environmental impacts on low income and minority populations and impacts on important religious, subsistence, or social practices. Further, the NRC should sign the MOU, an important aspect of which is procedures to help overburdened communities more efficiently and effectively engage federal agencies in decision making.

Environmental Injustice Plagues Plant Vogtle

It should be noted that there are no shelters in place for the residents in the Shell Bluff Community. And this rural community is not accessible to public transportation. The closest city is Waynesboro, Georgia located approximately 10 miles away, still not far enough to be considered a safe zone. If there were shelters in place, they could support residents for a short period or extended period of time in case of an emergency.

⁷ Federal Register /Vol. 68, No. 214 /Wednesday, November 5, 2003 /Notices, page 62643

⁸ Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations, February 11, 1994

⁹ "Environmental Justice: Grassroots Activism and its Impact on Public Policy Decision Making," Bullard and Johnson, *Journal of Social Issues*, Vol. 56, No. 3 (2000) pp.555-578.

Shell Bluff is just an example of where the NRC has failed to fully implement Executive Order 12898 to protect Minority Populations and Low-Income Populations from being exposed in a disproportionate way. This constant plague and threat to health and safety must not continue.

The Final EIS for an early site permit for Plant Vogtle's Units 3 and 4 was completed in July 2008.¹⁰ The FEIS concluded: “[T]he impacts of plant operations on environmental justice would be **SMALL** because no environmental pathways, health characteristics, or other preconditions of the minority and low-income population were found that would lead to adverse and disproportionate impacts.” Unbelievably, the report attributed the high percentage of minority and low-income people on the “sparseness” of the rural population. The data collection for this report consisted of interviews with just three residents.

In 2009, subsequent to the Vogtle COLA and ESP-FEIS, a nuclear power siting study was published which suggests that there is a “reactor-related environmental injustice” at Plant Vogtle. The study found:

The mining, fuel enrichment-fabrication, and waste-management stages of the US commercial nuclear fuel cycle have been documented as involving environmental injustices affecting, respectively, indigenous uranium miners, nuclear workers, and minorities and poor people living near radioactive-waste storage facilities. After surveying these three environmental-injustice problems, the article asks whether US nuclear-reactor siting also involves environmental injustice. For instance, because high percentages of minorities and poor people live near the proposed Vogtle reactors in Georgia, would siting new reactors at the Vogtle facility involve environmental injustice? If so, would this case be an isolated instance of environmental injustice, or is the apparent Georgia inequity generally representative of environmental injustice associated with nuclear-reactor siting throughout the US? Providing a preliminary answer to these questions, the article uses census data, paired t-tests, and z-tests to compare each state’s percentages of minorities and poor people to the percentages living in zip codes and census tracts having commercial reactors. Although further studies are needed to fully evaluate apparent environmental injustices, preliminary results indicate that, while reactor-siting-related environmental injustice is not obvious at the census-tract level (perhaps because census tracts are designed to be demographically homogenous), zipcode-scale data suggest reactor-related environmental injustice may threaten poor people ($p < 0.001$), at least in the southeastern United States.¹¹

Southern Nuclear Operating Company and the NRC apparently disregarded this new information because the Final Supplemental EIS for Plant Vogtle’s combined licenses states that the conclusions presented in the ESP EIS “remain bounding and valid.”¹² The summary conclusions of the Final EIS are plainly wrong. Unless and until the NRC fully

¹⁰ NUREG-1872, published August 2008

¹¹ *Environmental Injustice in Siting Nuclear Plants*, Mary Alldred and Kristin Shrader-Frechette, ENVIRONMENTAL JUSTICE, Volume 2, Number 2, 2009 © Mary Ann Liebert, Inc. DOI: 10.1089/env.2008.0544

¹² NUREG-1947, Section 5.7 Environmental Justice, March 2011

implements Executive Order 12898, environmental injustice will continue at Plant Vogtle and elsewhere.

Interim Task Force Provides Opportunity to Address Environmental Injustice

Task Force Recommendation number 11 states that “the NRC should pursue emergency preparedness topics related to decisionmaking, radiation monitoring, and public education. (Section 4.3.2)”

One economical and practicable means of advancing emergency preparedness is the distribution of potassium iodide to residents living near nuclear power plants. This crystalline salt is very soluble in water and is used medically chiefly in the treatment of hypothyroidism, to block thyroidal intake of radioactive iodine, and as an expectorant. It should be readily available to the residents in the Shell Bluff community and all areas where there is the threat of radiation exposure.

For decades, potassium iodide, chemical abbreviation KI, has been known to be extremely effective in the event of a nuclear power plant emergency. The key to its effectiveness is early and widespread distribution and education so that in the event of a nuclear accident such as Fukushima people living ten or twenty miles from the plant may protect themselves. Experts within and without the NRC have called for its use:

KI distribution should be included in planning for comprehensive radiological incident response programs for nuclear power plants. KI distribution programs should consider predistribution, local stockpiling outside the emergency planning zone (EPZ), and national stockpiles and distribution capacity.¹³

In fulfillment of the Task Force recommendation, KI should be distributed in Burke County, Georgia and an educational program established by the NRC.

The Fukushima I nuclear power plant is located in the towns of Okuma and Futaba, Japan. In March 2011 they were evacuated by government order because of the nuclear accident there. Together, Okuma and Futaba have a population of 19,000. Burke County has about 22,000 residents. If Plant Vogtle were to have an accident requiring residents to leave, how would they be evacuated? How would people know what to do? How would residents be notified? Where would they go? What would be done for people who could not drive?

After the Fukushima accident, President Obama recommended that residents within 50 miles evacuate the area or “shelter in place.” What does shelter in place mean if you have no shelter? How many residents are ready to evacuate or shelter in place?

¹³ Letter to Sen. Joseph Lieberman from Peter Crane, Counsel for Special Projects, US Nuclear Regulatory Commission (retired) and Frank von Hippel, Professor of Public Affairs, Princeton University citing a report by the National Academies of Science, September 26, 2007, ADAMS Accession No. ML072831363

In my opinion, the NRC should require Southern Company to provide shelter, evacuation assistance and other protections from a nuclear accident at Vogtle for residents of Blythe, Girard, Keysville, Midville, Sardis, Shell Bluff, Vidette, Waynesboro and all residents of Burke County. Potassium iodide tablets should be provided at no charge to all residents in Burke County.

Conclusion

I believe that the Interim Task Force provides NRC with a means of pursuing emergency preparedness topics related to decision making, radiation monitoring, and public education. Also, the NRC Chairman Jaczko should sign the August 4, 2011 environmental justice Memorandum of Understanding without delay.



SignatureAugust 11, 2011

Date

Resume of Charles N. Utley

Personal Data

Ordained Ministry of the Gospel March 1998

Military Service

1966-1968 US Army, Sergeant (E-5), Viet Nam Campaign Medal, Viet Nam Service Medal

Education

1966 T. W. Josey High School, Augusta, Georgia

1973 BA, Paine College, Augusta, Georgia

1983 M.Ed. South Carolina State University, Orangeburg, SC

Employment

1986—present: Guidance Department at Spirit Creek Middle School

2002—present: Community organizer and Environmental Justice Campaign Coordinator for the Blue Ridge Environmental Defense League

Community Involvement

1980-2005 President of Hyde and Aragon Park Improvement Committee, Inc. In January 1999 I was given the prestigious task of writing the community's Brownfield Pilot Project. With God's help Hyde Park and the City of Augusta received a Two Hundred Thousand-Dollar (\$200,000) Brownfield Redevelopment Pilot Grant. This grant was given to only 52 cities in the United States and the only one given that was written by a community in the year 2000.

President, Augusta Mayor's Brownfield Commission

Membership with other Organizations

I have worked with several organizations, agencies and communities throughout the United States, striving to help my community and others that are faced with the disproportionate, unjustified, despicable conditions of our communities, including:

- Richmond County Neighborhood Alliance Association, Augusta, Georgia
- Southern Organizing Committee for Economic and Social Justice, Atlanta, Georgia
- National Environmental Justice Advisory Council to write Executive Order 12898 of the Environmental Justice Act that was signed by President Clinton

- Advisory Board Member for Agency for Toxic Substances and Disease Registry
- Board of Health “Health Monitoring Program,” Augusta-Richmond County, Georgia
- Citizens for Environmental Justice, Savannah Georgia

CERTIFICATE OF SERVICE

I hereby certify that copies of the forgoing MOTION TO REOPEN THE RECORD AND ADMIT CONTENTION REGARDING THE SAFETY AND ENVIRONMENTAL IMPLICATIONS OF THE NUCLEAR REGULATORY COMMISSION TASK FORCE REPORT ON THE FUKUSHIMA DAI-ICHI ACCIDENT and CONTENTION REGARDING NEPA REQUIREMENT TO ADDRESS SAFETY AND ENVIRONMENTAL IMPLICATIONS OF THE FUKUSHIMA TASK FORCE REPORT on behalf of the Blue Ridge Environmental Defense League have been served upon the following persons by Electronic Information Exchange:

U.S. Nuclear Regulatory Commission
Atomic Safety and Licensing Board Panel
Mail Stop - T-3 F23
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

G. Paul Bollwerk, III, Chair
Administrative Judge
E-mail: paul.bollwerk@nrc.gov

Nicholas G. Trikouras
Administrative Judge
E-mail: ngt@nrc.gov

James F. Jackson
Administrative Judge
E-mail: jxj2@nrc.gov
jackson538@comcast.net
james.jackson@nrc.gov

Wen Bu, Law Clerk, ASLBP
E-mail: wen.bu@nrc.gov

U.S. Nuclear Regulatory Commission
Office of the General Counsel
Mail Stop - O-15 D21
Washington, DC 20555-0001
Marian Zobler, Esq.
Ann P. Hodgdon, Esq.
Sara Kirkwood, Esq.
Patrick A. Moulding, Esq.
Sarah Price, Esq.

Carol H. Lazar, Esq.
Jessica Bielecki, Esq.
Stephanie Liaw, Esq.
Joseph Gilman, Paralegal
E-mail:
marian.zobler@nrc.gov;aph@nrc.gov;
Sara.Kirkwood@nrc.gov;
patrick.moulding@nrc.gov;
sap1@nrc.gov
jsg1@nrc.gov;Carol.Lazar@nrc.gov;
jessica.bielecki@nrc.gov;
stephanie.liaw@nrc.gov

OGC Mail Center: Members of this office
have received a copy of this filing by EIE
service.

U.S. Nuclear Regulatory Commission
Office of Commission Appellate
Adjudication
Mail Stop: O-16C1
Washington, DC 20555-0001
E-mail: ocaamail@nrc.gov

Moanica M. Caston, Esq.
Southern Nuclear Operating Company,
Inc.
40 Inverness Center Parkway
P.O. Box 1295, Bin B-022
Birmingham, AL 35201-1295
E-mail: mcaston@southernco.com

Kathryn M. Sutton, Esq.
Steven P. Frantz, Esq.
Paul M. Bessette, Esq.
Mary Freeze, Legal Secretary
Angela M. Perry, Legal Secretary
Morgan, Lewis & Bockius, LLP
Co-Counsel for Southern Nuclear Operating
Co., Inc.
1111 Pennsylvania Ave., NW
Washington, DC 20004
E-mail: ksutton@morganlewis.com
sfrantz@morganlewis.com
pbessette@morganlewis.com
mfreeze@morganlewis.com
angela.perry@morganlewis.com

Turner Environmental Law Clinic
Emory University School of Law
1301 Clifton Road
Atlanta, GA 30322
Lawrence Sanders, Esq.
E-mail: lsande3@emory.edu
Mindy Goldstein
E-mail: magolds@emory.edu

Kenneth C. Hairston, Esq.
M. Stanford Blanton, Esq.
Peter D. LeJeune, Esq.
Chad Pilcher, Esq.
Millicent Ronnlund
Balch & Bingham LLP
1710 Sixth Avenue North
Birmingham, Alabama 35203-2014
E-mail: kchairston@balch.com;
sblanton@balch.com; plejeune@balch.com;
cpilcher@balch.com; mronnlund@balch.com

C. Grady Moore, III, Esq.
Balch & Bingham, LLP
1901 6TH Avenue, Suite 2600
Birmingham, AL 35203
Leslie Garrett Allen, Esq.
E-mail: gmoore@balch.com
E-mail: lgallen@balch.com

Robert B. Haemer, Esq.
Pillsbury Winthrop Shaw Pittman LLP
2300 N Street, NW
Washington, DC 20037-1122
E-mail: robert.haemer@pillsburylaw.com

James B. Dougherty, Esq.
709 3rd Street, SW
Washington, DC 20024
E-mail: jimdougherty@aol.com

David Kyler
Center For A Sustainable Coast
Mailing address: 221 Mallery St. Suite B,
St. Simons Island, GA 31522
Phone: 912-638-3612
Email: susdev@gate.net

Bobbie Paul
Georgia Women's Action for New
Directions, Inc.
Mailing address: 250 Georgia Ave. SE,
Ste. 202, Atlanta, GA 30312
Phone: 404-524-5999
Fax: 404-524-7593
Email: bobbie@wand.org

Barton Z. Cowan, Esq.
Eckert Seamans Cherin & Mellott, LLC
600 Grant Street, 44th Floor
Pittsburgh, PA 15219
E-mail: teribart61@aol.com

This is the 11th day of August 2011.

ON BEHALF OF BREDL

/signed (electronically) by/

John D. Runkle
Attorney at Law
P.O. Box 3793
Chapel Hill, NC 27515
919-942-06000
jrunkle@pricecreek.com