

ORAL ARGUMENT NOT YET SCHEDULED**IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT**

D.C. Cir. No. 12-1106 (Consolidated with D.C. Cir. No. 12-1151)

BLUE RIDGE ENVIRONMENTAL DEFENSE LEAGUE, *et al.*,
Petitioners,

v.

UNITED STATES NUCLEAR REGULATORY COMMISSION and the UNITED
STATES OF AMERICA,
Respondents

WESTINGHOUSE ELECTRIC COMPANY, LLC, *et al.*,
Intervenors.

Petition for Review of Final Administrative Action of the
United States Nuclear Regulatory Commission

DEFERRED JOINT APPENDIX – VOLUME 1 OF 2 (JA1-JA453)

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Gregory B. Jaczko, Chairman
Kristine L. Svinicki
George Apostolakis
William D. Magwood, IV
William C. Ostendorff

In the Matter of)

SOUTHERN NUCLEAR OPERATING CO.)

(Vogtle Electric Generating Plant,)
Units 3 and 4))

Docket Nos. 52-025-COL
and 52-026-COL

CLI-12-11

MEMORANDUM AND ORDER

The Southern Alliance for Clean Energy (SACE), Blue Ridge Environmental Defense League (BREDL), Center for a Sustainable Coast, Citizens Allied for Safe Energy, and Georgia Women's Action for New Directions (Georgia WAND) (collectively, Petitioners) seek to stay the effectiveness of our recent decision in this matter (CLI-12-2),¹ pending judicial review.² In CLI-12-2, we authorized the issuance of two combined licenses (COLs) entitling Southern

¹ 75 NRC __ (Feb. 9, 2012) (slip op.).

² *Petitioners' Motion to Stay the Effectiveness of the Combined License for Vogtle Electric Generating Plant Units 3 and 4 Pending Judicial Review* (Feb. 16, 2012) (Stay Motion). Petitioners offer a Declaration by Dr. Arjun Makhijani in support of their Stay Motion. *Declaration of Dr. Arjun Makhijani in Support of Motion to Stay Effectiveness of Vogtle COL Approval* (Feb. 16, 2012) (Makhijani Declaration), appended to the stay motion as Attachment A. Savannah Riverkeeper joined the current four Petitioners in challenging the COL application in the contested hearing (see CLI-12-2, 75 NRC at __ (slip op. at 4)), but did not join them in filing the Stay Motion that we address today.

Nuclear Operating Company (Southern) to construct and operate two new nuclear power reactors at its Vogtle Electric Generating Plant (Vogtle).³ Petitioners argue that, prior to approving the Vogtle COLs, the NRC Staff should have prepared a “supplemental [environmental impact statement (EIS)]” addressing the environmental implications of the Fukushima Dai-ichi nuclear accident and considering the recommendations of the NRC’s Fukushima Task Force.⁴ Southern and the Staff oppose the Stay Motion.⁵ As discussed below, we decline to stay the effectiveness of CLI-12-2.

I. BACKGROUND

Pursuant to 10 C.F.R. part 52, subpart C, Southern submitted an application in 2008 seeking our approval to construct and operate two new nuclear reactors at its Vogtle site.⁶ Petitioners sought and were granted a “contested hearing” pursuant to the Atomic Energy Act

³ Petitioners have sought judicial review of CLI-12-2 in the United States Court of Appeals for the District of Columbia Circuit. See *Blue Ridge Envtl. Def. League v. NRC*, No. 12-1151 (D.C. Cir. filed Mar. 20, 2012). Separately, Petitioners, along with five other organizations, have asked the same court to review the NRC’s recent approval of the AP1000 design, which is the design for the two new reactors at the Vogtle facility. See *Blue Ridge Envtl. Def. League v. NRC*, No. 12-1106 (D.C. Cir. filed Feb. 16, 2012). Both petitions for review are attached to the Stay Motion as Appendix B.

⁴ Stay Motion at 2 (referring to “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) (ADAMS accession no. ML112510271) (Near-Term Report) (transmitted to the Commission via “Near-Term Report and Recommendations for Agency Actions Following the Events in Japan”, Commission Paper SECY-11-0093 (ML112310021) (package))). See also Stay Motion at 11.

⁵ *NRC Staff Answer to Petitioners’ Motion to Stay the Vogtle Units 3 and 4 Combined Licenses Pending Judicial Review* (Feb. 27, 2012) (Staff Answer); *Southern Nuclear Operating Company’s Response to Motion to Stay* (Feb. 27, 2012) (Southern Answer). Southern, in support of its opposition, appends to its answer both an Affidavit from Joseph A. Miller, Southern’s Executive Vice President for Nuclear Development, and a letter from Georgia State Senator Jesse Stone. *Affidavit of Joseph A. “Buzz” Miller* (Feb. 27, 2012); Stone, Jesse, Georgia State Senator, letter to Joseph A. Miller, Georgia Power Company (Feb. 27, 2012).

⁶ See Southern Nuclear Operating Co., “Vogtle Electric Generating Plant, Units 3 and 4; COL Application,” Rev. 0, Docket Nos. 52-025-COL & 52-026-COL (Mar. 31, 2008), attached as a CD to Miller, Joseph A., Southern Nuclear Operating Co., to NRC (Mar. 28, 2008) (ML081050133).

(AEA) and our procedural rules,⁷ which provide members of the public an opportunity to petition to intervene before a three-judge panel of our Atomic Safety and Licensing Board. Although the initial contested proceeding ended in June 2010,⁸ a second Licensing Board was established in August 2010 after three of today's Petitioners sought to reopen the record and litigate a new contention (related to the safety of the proposed new reactors' containment). The second Board denied the request, and we affirmed the Board's decision.⁹

Petitioners subsequently filed motions to reopen the record, this time proposing a contention that the final supplemental environmental impact statement (FSEIS) prepared in conjunction with the *Vogtle* COL application had failed to satisfy the National Environmental Protection Act (NEPA)¹⁰ because it did not account for the environmental implications stemming from the findings and recommendations included in the NRC's Near-Term Report on the Fukushima-Dai'ichi accident.¹¹ The Board denied Petitioners' motions,¹² and we recently

⁷ AEA § 189a.(1)(A), 42 U.S.C. § 2239(a)(1)(A); 10 C.F.R. §§ 2.309, 52.85.

⁸ LBP-10-8, 71 NRC 433 (2010).

⁹ LBP-10-21, 72 NRC __ (Nov. 30, 2010) (slip op.), *aff'd*, CLI-11-8, 74 NRC __ (Sept. 27, 2011) (slip op.).

¹⁰ 42 U.S.C. §§ 4321 *et seq.*

¹¹ See *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* (filed on Aug. 11, 2011 by Center for a Sustainable Coast, Georgia WAND, and SACE) (Petitioner Motion to Reopen); *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 a separately paginated *Contention Regarding NEPA Requirement to Address Safety and Environmental Implications of the Fukushima Task Force Report* (filed on Aug. 11, 2011 by BREDL) (BREDL Motion to Reopen).

¹² *PPL Bell Bend, L.L.C.* (Bell Bend Nuclear Power Plant), LBP-11-27, 74 NRC __ (Oct. 18, 2011) (slip op.) (rejecting motions regarding five plants, including *Vogtle*); Memorandum (Corrections regarding LBP-11-27) (Oct. 20, 2011) (unpublished). Shortly thereafter, Petitioners filed motions to reinstate and supplement the basis for the rejected contention, prior to appealing LBP-11-27. See *Motion to Reinstate and Supplement the Basis for Fukushima Task Force Report Contention* (substantively identical motions filed by BREDL, and separately, by (continued . . .)

affirmed the Board's decision.¹³

In addition to contested hearings where interested members of the public have the right to participate and air their concerns, uncontested safety and environmental issues are considered in a so-called "mandatory" hearing.¹⁴ We conducted the mandatory hearing for the proposed new Vogtle reactors on September 27-28, 2011.¹⁵ Both the Staff and Southern participated in the mandatory hearing¹⁶ but Petitioners did not.¹⁷ A portion of the mandatory hearing focused upon the COL FSEIS that the Staff had issued on March 18, 2011.¹⁸

Following the mandatory hearing, we issued CLI-12-2, where we concluded that the "Staff's review of the safety and environmental issues related to Southern's combined license and limited work authorization applications was sufficient to support the findings . . . for each of the combined licenses to be issued, and [likewise sufficient to support] the findings . . . with

Center for a Sustainable Coast, Georgia WAND, and SACE on Oct. 28, 2011). The Board rejected these requests. See *Luminant Generation Co. LLC* (Comanche Peak Nuclear Power Plant, Units 3 and 4), LBP-11-36, 74 NRC __ (Nov. 30, 2011) (slip op.).

¹³ See *Luminant Generation Co. LLC* (Comanche Peak Nuclear Power Plant, Units 3 and 4), CLI-12-7, 75 NRC __ (Mar. 16, 2012) (slip op.). This decision ruled on petitions for review filed in four matters, including this one.

¹⁴ See AEA, §§ 185b, 189a, 42 U.S.C. §§ 2235(b), 2239(a). See also Notice of Hearing, Southern Nuclear Operating Co., et al.; Combined Licenses for Vogtle Electric Generating Plant, Units 3 and 4, and Limited Work Authorizations, 76 Fed. Reg. 50,767, 50,768 (Aug. 16, 2011).

¹⁵ We set forth the procedural history of the mandatory hearing in CLI-12-2, 75 NRC at __ (slip op. at 8-11), and therefore do not repeat it here.

¹⁶ See *id.*, 75 NRC at __ (slip op. at 9).

¹⁷ The mandatory hearing, which is required by section 189a of the AEA, does not involve public participation—regardless of whether a contested hearing with public participation has occurred. See *Exelon Generation Co. LLC* (Early Site Permit for Clinton ESP Site), CLI-05-17, 62 NRC 5, 49 (2005) ("The scope of the intervenors' participation in adjudications is limited to their admitted contentions, i.e., they are barred from participating in the uncontested portion of the hearing. Any other result would contravene the objectives of our 'contention' requirements.").

¹⁸ See Southern Nuclear Operating Company, Inc.; Notice of Availability of the Final Supplemental Environmental Impact Statement for Vogtle Electric Generating Plant Units 3 and 4; Combined License Application Review, 76 Fed. Reg. 16,645 (Mar. 24, 2011).

respect to the limited work authorizations.”¹⁹ In that decision, we authorized the Director of the Office of New Reactors “to issue the limited work authorizations” (permitting Southern to engage in certain construction activities in connection with proposed Units 3 and 4) and also to issue “appropriate licenses authorizing construction and operation of . . . Units 3 and 4.”²⁰ On February 10, 2012, the Staff issued the COLs and LWAs for those two units.²¹

Petitioners now seek to stay the effectiveness of CLI-12-2 and the issuance of both the COLs and LWAs. Given that the NRC has already issued the COLs and LWAs, we construe the Stay Motion as a request that we stay the *effectiveness* of the COLs and LWAs. As noted above, Petitioners assert that, prior to approving the Vogtle COLs, the NRC should have prepared a supplement to the COL FSEIS addressing the environmental implications of the Fukushima events and considering the recommendations of the Fukushima Near-Term Task Force.²²

II. DISCUSSION

A. Stay Standards

The Commission considers requests for stays of Licensing Board decisions under 10 C.F.R. § 2.342. This regulation, however, does not apply to requests for stays of Commission

¹⁹ CLI-12-2, 74 NRC at __ (slip op. at 85). The purpose of a mandatory hearing is to determine whether the Staff’s review of the application has been adequate to support the required regulatory findings. See *id.*, 75 NRC at __ (slip op. at 12, 14).

²⁰ *Id.*, 74 NRC at __ (slip op. at 85).

²¹ See Matthews, David B., Office of New Reactors, NRC, letter to Joseph A. “Buzz” Miller, Southern Nuclear Operating Co., “Issuance of Combined Licenses and Limited Work Authorizations for Vogtle Electric Generating Plant (VEGP) Units 3 and 4” (Feb. 10, 2012) (ML113360395).

²² Stay Motion at 1-2, 11. Previously, we had declined to suspend ongoing licensing proceedings, including the *Vogtle* proceeding, pending our agency’s ongoing Fukushima review. See *Union Electric d/b/a/ Ameren Missouri* (Callaway Plant, Unit 2), CLI-11-5, 74 NRC __ (Sept. 9, 2011) (slip op.).

decisions pending judicial review.²³ While we have no specific rule governing stays of agency action pending judicial review, federal law requires parties seeking such stays in court to come to the agency first,²⁴ and we traditionally have entertained such motions.²⁵ We exercise our discretion here to consider Petitioners' motion.²⁶

In deciding motions seeking a stay of agency action pending judicial review, we look to the same four-part test that governs stays of licensing board decisions pending Commission review, set forth in 10 C.F.R. § 2.342(e). Thus, in deciding whether to grant a stay, we weigh and balance the following equitable factors:

- (1) Whether the moving party has made a strong showing that it is likely to prevail on the merits;
- (2) Whether th[at] party will be irreparably injured unless a stay is granted;
- (3) Whether the granting of a stay would harm the other parties; and

²³ *Texas Utilities Electric Co.* (Comanche Peak Steam Electric Station, Unit 2), CLI-93-11, 37 NRC 251, 263 (1993). See also *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), CLI-91-8, 33 NRC 461, 468 (1991) (requests to stay effectiveness of future licensing action pending judicial appeal more appropriately styled "motion to reconsider" and "motion to hold in abeyance").

²⁴ See Fed. R. App. P. 18(a)(1).

²⁵ See *Shieldalloy Metallurgical Corp.* (Decommissioning of the Newfield, New Jersey Site), CLI-10-8, 71 NRC 142, 147 & n.25 (2010); *Texas Utilities Electric Co.* (Comanche Peak Steam Electric Station, Unit 2), CLI-93-11, 37 NRC 251, 263-65 (1993); *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), CLI-92-4, 35 NRC 69, 80-82 (1992). See generally *David Geisen*, CLI-09-23, 70 NRC 935, 936 (2009).

²⁶ Because 10 C.F.R. § 2.342 does not apply to Petitioners' motion, we do not address Southern's request that we strike the motion because it exceeds that rule's ten-page limit. See *Southern Nuclear Operating Company's Motion to Strike or, in the Alternative, Request for Page Limit Extension* (Feb. 22, 2012). See also *Shoreham*, CLI-91-8, 33 NRC at 468 n.2. Southern also makes another procedural argument—that Petitioners' Stay Motion is too late because their motion, and an accompanying lawsuit, should have been filed months ago in the wake of either the Board's decision denying reopening (LBP-11-27) or our decision declining to suspend NRC licensing proceedings pending completion of the agency's review of the Fukushima accident (CLI-11-5). We find that argument unpersuasive because only *final* NRC action is subject to judicial review. See 28 U.S.C. § 2342. Neither the Board's decision denying reopening nor the Commission's decision refusing to suspend proceedings amounted to final agency action.

(4) Where the public interest lies.²⁷

Of these factors, irreparable injury is the most important.²⁸ Specifically, “[a] party seeking a stay must show it faces imminent, irreparable harm that is both ‘certain and great.’”²⁹ Without a showing of irreparable injury, Petitioners must make “an overwhelming showing” of likely success on the merits.³⁰ (This has also been referred to as a demonstration of “virtual certainty.”³¹) And if a movant makes neither of these first two showings, then we need not consider the remaining factors.³²

B. Analysis of the Four Stay Factors

1. Immediate and Irreparable Injury

Petitioners claim that “they will be irreparably harmed if construction of the Vogtle 3&4 reactors is allowed to proceed.”³³ They consider the “commitment of resources involved in building Vogtle 3&4” to be “significant,” and “the impacts of construction activities to air, soil, and

²⁷ 10 C.F.R. § 2.342(e). See also *Shieldalloy*, CLI-10-8, 71 NRC at 150-51.

²⁸ *Shieldalloy*, CLI-10-8, 71 NRC at 151; *Geisen*, CLI-09-23, 70 NRC at 936 & n.4.

²⁹ *Entergy Nuclear Vermont Yankee, LLC* (Vermont Yankee Nuclear Power Station), CLI-06-8, 63 NRC 235, 237 (2006).

³⁰ *AmerGen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-08-13, 67 NRC 396, 400 (2008); *Sequoyah Fuels Corp.* (Gore, Oklahoma Site), CLI-94-9, 40 NRC 1, 7 (1994); *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-89-8, 29 NRC 399, 412 (1989).

³¹ *Shieldalloy*, CLI-10-8, 71 NRC at 154; *Geisen*, CLI-09-23, 70 NRC at 937; *AmerGen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-08-13, 67 NRC 396, 400 (2008); *Kerr-McGee Chemical Corp.* (West Chicago Rare Earths Facility), ALAB-928, 31 NRC 263, 269 (1990) (“movant must demonstrate that the reversal of the licensing board is a ‘virtual certainty’”).

³² *Shieldalloy*, CLI-10-8, 71 NRC at 163 (“*Shieldalloy's* failure to satisfy the first two stay factors renders it unnecessary to make determinations on the two remaining factors: harm to other parties and where the public interest lies”) (footnote omitted); *Oyster Creek*, CLI-08-13, 67 NRC at 400, 401.

³³ Stay Motion at 2. See also Makhijani Declaration at 4-5.

water, including the project's carbon footprint" to be both "significant and irreversible."³⁴

According to Petitioners, "the failure to issue a stay would cause irreparable harm to Petitioners and the environment by irretrievably committing a large amount of natural resources and generating significant emissions of carbon to the environment."³⁵

We find Petitioners' arguments unpersuasive for two reasons. First, we see no "imminent, irreparable harm that is both 'certain and great.'"³⁶ The NRC's FEIS for the Early Site Permit (ESP) phase of the Vogtle licensing process expressly addressed the air and water pollution that would result from construction and related activities, and found the effects "small."³⁷ Later, the NRC's FSEIS for the COL application made a similar finding.³⁸ Petitioners offer no explanation of what change in circumstances calls for us now to view the effects of construction at the Vogtle site as "great" rather than "small." Indeed, Petitioners do not argue

³⁴ Stay Motion at 2.

³⁵ *Id.* at 16. See also Makhijani Declaration at 4-5. For examples, see Stay Motion at 16-17; Makhijani Declaration at 5.

³⁶ *Vermont Yankee*, CLI-06-8, 63 NRC at 237.

³⁷ See, e.g., "Final Environmental Impact Statement for an Early Site Permit (ESP) at the Vogtle Electric Generating Plant Site—Final Report, Main Report," NUREG-1872, Vol. 1 (Aug. 2008) (Cover through Chapter 4: ML090760332; Chapters 5 through 11: ML090760333). For specific examples, see *id.* § 3.2.4.3, at 3-16 (hydrocarbons emitted from diesel generators), § 4.1.1, at 4-2 to 4-3 (impacts on land use), § 4.2.1, at 4-5 to 4-6 (impacts on air quality), § 4.2.2, at 4-6 to 4-7 (impacts on air quality due to increased traffic), §§ 4.3 to 4.3.2, at 4-7 to 4-13 (water-related impacts, generally), § 4.3.3, at 4-13 (water quality impacts), § 4.4.2.2, at 4-28 to 4-29 (impacts to ponds and streams onsite from site-preparation and construction activities), § 4.5.4.1, at 4-46 to 4-49 (impacts due to increased traffic), § 4.7.1.1, at 4-58 to 4-59 (impacts on soil), § 4.7.1.2, at 4-59 (impacts on water), § 4.7.1.3, at 4-59 (impacts on air), § 4.8.1.1, at 4-62 (impacts on air quality), § 5.2.2, at 5-4 (hydrocarbons emitted from diesel generators).

³⁸ See, e.g., "Final Supplemental Environmental Impact Statement for Combined Licenses (COLs) for Vogtle Electric Generating Plant Units 3 and 4—Final Report," NUREG-1947 (Mar. 2011), at Chapter 4 (NUREG-1947) (ML11270A216). For specific examples, see *id.* § 4.2, at 4-4 (impacts on air pollution due to increased traffic), § 4.3, at 4-4 to 4-5 (impacts on water), § 4.4.1, at 4-6 to 4-13 (impact on land resources), § 4.4.3, at 4-14 to 4-16 (impacts on aquatic ecosystem), § 4.8.2, at 4-24 to 4-26 (impacts of transporting construction material and personnel to construction site).

that the findings in the ESP FEIS and COL FSEIS have changed. Nor do Petitioners acknowledge or address the NRC's exhaustive consideration of construction impacts on the environment. Consequently, Petitioners have failed to show that "certain and great" harm would result from a denial of their request that the NRC prepare a supplement to the COL FSEIS addressing the Task Force Report Recommendations.

Second, the "irreparable harm" on which Petitioners rely—alleged environmental impacts of construction—is unrelated to the Fukushima-driven challenge raised in their petition for judicial review. That challenge relates to alleged risks and environmental effects of *operating* the new Vogtle reactors, not constructing them. To qualify as "irreparable harm" justifying a stay, the asserted harm "must be related" to the underlying claim.³⁹ Here, Petitioners claim that significant construction impacts at Vogtle Units 3 and 4, if site activities are not stayed, will constitute irreparable harm. Yet in the contested proceeding for Vogtle Units 3 and 4, Petitioners raised only one contention challenging the adequacy of the COL FSEIS as regards construction impacts, and the asserted harm to which that contention alludes (related to the Savannah River) is not mentioned in the Stay Motion.⁴⁰

³⁹ *United States v. Green Acres Enter., Inc.*, 86 F.3d 130, 133 (8th Cir. 1996). See also *National Football League v. McBee & Bruno's, Inc.*, 792 F.2d 726, 733 (8th Cir. 1986) (injury that had "never been the focus of" the lawsuit was insufficient to find irreparable harm). Put differently, where the claimant "has not shown a sufficient causal connection" between the alleged irreparable harm and the underlying claim, relief will be denied. *Perfect 10, Inc. v. Google, Inc.*, 653 F.3d 976, 982 (9th Cir. 2011).

⁴⁰ *Joint Intervenor's Motion to Admit New Contention* (July 23, 2009), at 2:

Channel maintenance . . . of the Savannah River Federal Navigation Channel . . . , to support movement of heavy equipment and components for the construction of Units 3 and 4 at the Vogtle Electric Generating Plant has potentially significant environmental impacts that have not been fully evaluated. . . . NEPA requires the staff to conduct an impacts analysis on this channel maintenance.

Petitioners' only other proffered environmental contention in this proceeding did not relate to construction. Petitioner Motion to Reopen at 1 ("the [COL FSEIS] fails to address the extraordinary environmental and safety implications of the findings and recommendations raised (continued . . .)

As noted above, the Staff addressed the issue of construction impacts in both the COL FSEIS and the ESP FEIS, so Petitioners had ample opportunity to proffer their construction-impacts arguments at both the ESP hearing and the COL contested hearing. Petitioners failed to take advantage of these opportunities.⁴¹ Petitioners, in short, did not exhaust available agency remedies on the issue of construction impacts. We therefore see no basis for a claim of irreparable harm arising from construction impacts that were fully identified and discussed in the FEIS for the ESP and the FSEIS for the COLs, but are unrelated to any contention proposed by Petitioners.

2. Likelihood of Success on the Merits

Petitioners argue that there is a “a strong likelihood of [their] prevailing on their claim that the NRC violated the National Environmental Policy Act (‘NEPA’) by refusing to address the environmental implications of the catastrophic nuclear reactor accident at Fukushima Dai-ichi in a supplemental environmental impact statement . . . for the licensing of Vogtle 3&4.”⁴²

by the Nuclear Regulatory Commission’s Fukushima Task Force . . . in its report”); BREDL Motion to Reopen at 1 (same).

Similarly, the declarations Petitioners filed during the contested portion of this proceeding in support of their representational standing mention Vogtle-specific injuries related to only the operation (but not construction) of the two new units: (i) the inability of the Savannah River to provide sufficient cooling water for the new reactors, (ii) the effects of releasing heated water into the river, (iii) the effects of the facility drawing too much water from the river, and (iv) routine releases of radioactive substances into the air and water. See generally declarations in support of Petitioners’ representational standing (appended to *Petition for Intervention*) (Nov. 17, 2008) (ML083230453).

⁴¹ See COL contentions set forth in Petitioners’ Motion to Reopen at 1; BREDL Motion to Reopen at 1; *Proposed New Contention by Joint Intervenor Regarding the Inadequacy of Applicant’s Containment/Coating Inspection Program* (Aug. 12, 2010), at 1; *Joint Intervenor’s Motion to Amend Contention Safety-1* (Oct. 23, 2009), at 2-3; *Joint Intervenor’s Motion to Admit New Contention* (July 23, 2009), at 2; *Petition for Intervention* at 8, 1, 14. See also contentions set forth in the ESP proceeding: Docket No. 52-011-ESP, *Jnt [sic] Supplement to Petition for Intervention* (Dec. 27, 2006), at 2 (ML070080349); *Petition for Intervention* (Dec. 11, 2006), at 5-38 (ML063470165).

⁴² Stay Motion at 1. See also *id.* at 11.

According to Petitioners, our adoption of the Near-Term Task Force's recommendations for improving the NRC's regulatory system "established, as a matter of law, that the Fukushima accident and the Task Force's report regarding its implications for U.S. reactors constitute 'new and significant information' that should have been addressed in a supplemental EIS"⁴³ (referring to a supplement to the COL FSEIS). Petitioners refer generally to NEPA and specifically to section 51.92(a) of our rules,⁴⁴ arguing that the duty to supplement the FSEIS is mandatory, is not avoidable through findings of compliance with the agency's safety regulations, and is waivable only where the consequences are "remote and highly improbable."⁴⁵

As noted above, proponents of a stay who fail to demonstrate irreparable injury will not prevail unless they demonstrate that their success on the merits is a "virtual certainty."⁴⁶ Petitioners fail to meet this high standard.⁴⁷ In the *Vogtle* proceeding's "contested" phase, where Petitioners *were* parties, we declined to overturn a Licensing Board decision refusing to reopen the record to consider Petitioners' Fukushima-related arguments—arguments nearly identical to those they raise in the current stay motion.⁴⁸ We addressed Petitioners' requests that we reopen the contested proceeding to consider whether the Staff's environmental review took into account the "new and significant environmental implications stemming from . . . the

⁴³ *Id.* at 2. See also *id.* at 12; Makhijani Declaration at 2-3.

⁴⁴ Stay Motion at 12 (quoting 10 C.F.R. § 51.92(a)).

⁴⁵ *Id.* (citation omitted).

⁴⁶ See note 31 and associated text, *supra*.

⁴⁷ We initially observe that the petition for judicial review, as it is currently framed, purports to challenge our mandatory hearing decision (CLI-12-2). But because Petitioners did not participate in the mandatory hearing, and were not parties to it, they may not challenge the mandatory hearing decision, as such, in court. See 28 U.S.C. § 2342 (only a "*party aggrieved*" can seek judicial review). Petitioners may, however, seek judicial review of our final licensing action—the COLs and LWAs themselves—which would include prior agency adjudicatory decisions on contested issues.

⁴⁸ See *Comanche Peak*, CLI-12-7, 75 NRC at __, __ (slip op. at 1, 15).

Near-Term Report.”⁴⁹ We declined to do so, concluding generally that “Petitioners ha[d] not identified environmental effects from the Fukushima . . . events that can be concretely evaluated at this time, or identified specific new information challenging the site-specific environmental assessments in the captioned matters.”⁵⁰ We also concluded, specific to *Vogtle*, that “an application-specific NEPA review represents a ‘snapshot’ in time,” and that while “NEPA requires that we conduct our environmental review with the best information available today[, i]t does not require that we wait until inchoate information matures into something that later might affect our review.”⁵¹ Finally, we found Petitioners’ proposed Fukushima contention “too vague” for hearing under the Commission’s contention-admissibility rules and, as pled, lacking the kind of “‘significance’ and potential for a ‘different result’ that under our reopening rule would justify restarting already-closed hearings.”⁵²

We conclude that Petitioners are unlikely to obtain judicial relief, for the same reasons we rejected Petitioners’ Fukushima-based contention. Petitioners assume that our review of NRC regulations in light of the Fukushima events constitutes “new and significant” information requiring a supplement to the COL FSEIS.⁵³ But Petitioners have not demonstrated that the Fukushima events or any regulatory response to those events would raise environmental impacts that differ significantly from the impacts that the NRC has already reviewed and

⁴⁹ *Id.* at ___ (slip op. at 3) (footnote omitted).

⁵⁰ *Id.* at ___ (slip op. at 9).

⁵¹ *Id.* at ___ (slip op. at 14) (footnotes omitted).

⁵² *Id.* at ___ (slip op. at 14 & n.47). See 10 C.F.R. § 2.326(a) (reopening standards).

⁵³ For new information to be sufficiently “significant” to merit the preparation of a supplemental FEIS, the information “must paint a *seriously* different picture of the environmental landscape.” *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 28 (2006) (emphasis in original; citation and internal quotation marks omitted). Also, NEPA case law requires EIS supplementation only where new information identifies a “previously unknown” environmental concern, but not where the new information “amounts to mere additional evidence supporting one side or the other of a disputed environmental effect.” *Id.*

addressed in the ESP FEIS or the COL FSEIS for Vogtle. Specifically, the NRC's FEIS for Vogtle's ESP examined the environmental impacts of constructing the two new reactors—including the potential impacts from design basis accidents and severe accidents—and concluded that those impacts would be small.⁵⁴ The COL FSEIS subsequently confirmed that this conclusion still remains valid.⁵⁵ Petitioners' stay motion never even refers to the analyses in the ESP FEIS and the COL FSEIS.⁵⁶ Petitioners simply have not shown, from a NEPA perspective, that the Fukushima events or our potential regulatory responses to those events reveal environmental impacts that differ significantly from those the NRC has already studied.

Separately, Petitioners point to our mandatory hearing decision, CLI-12-2, and argue that we have disregarded the Near-Term Task Force's recommendations and that we consider a Fukushima-like accident "too unlikely to warrant consideration."⁵⁷ Even assuming that non-parties to the mandatory hearing may challenge its result, Petitioners' characterization of our approach is incorrect. The record shows that we recognized the Staff's examination of potential severe accidents in both its ESP FEIS and its COL FSEIS, and we considered at length the possibility of severe accidents,⁵⁸ including those "like the accident at Fukushima."⁵⁹ At the evidentiary hearing, we "asked a series of questions about whether the severe accident analysis conducted as part of the ESP [F]EIS considered accidents involving multiple units at the site in

⁵⁴ ESP FEIS § 5.10.1, at 5-80 (design basis accidents), § 5.10.2, at p. 5-89 (severe accidents), § 5.10.4, at 5-91 (summary). See CLI-12-2, 75 NRC at ___ (slip op. at 73).

⁵⁵ COL FSEIS § 5.10.1, at p. 5-17 (design basis accidents), § 5.10.2, at 5-19 (severe accidents), § 5.10.4, at 5-20 (summary).

⁵⁶ Petitioners argue merely that "[e]ven where the impacts of a proposed licensing action have been studied and reported in an EIS, NEPA requires the agency to supplement that EIS by considering the implications of any new information that could significantly affect the action or its impacts." Stay Motion at 12.

⁵⁷ *Id.* at 15.

⁵⁸ CLI-12-2, 75 NRC at ___-___ (slip op. at 72-75).

⁵⁹ *Id.* at ___ (slip op. at 74).

disaster scenarios analogous to the multi-layer disaster that occurred at Fukushima.”⁶⁰ We considered Southern’s answers indicating that Southern’s environmental analysis assumed multiple concurrent accidents (though from independent causes).⁶¹ And at the evidentiary hearing, we also took into account one Staff witness’s statement that:

[A]fter the Fukushima accident, the staff examined the task force report and noted that [it] emphasized that a Fukushima[-]like event is unlikely in the U.S. and the staff determined that this did not represent new and significant information for the Vogtle Review. Additionally, for the purpose of the environmental analysis accident consequences[,] the staff draws its key inputs from the design basis accidents in the [probabilistic risk assessment] reference and design certification and the COL safety side analysis. Because those have not changed following the Fukushima event, this further supports the determination there is no currently new and significant information that would change the staff’s conclusion in the [F]SEIS.⁶²

We ultimately accepted the Staff’s position that our regulatory approach and our regulated plants’ capabilities “allow the Task Force to conclude that a sequence of events like the Fukushima accident is unlikely to occur in the United States and [that] continued operation and continued licensing activities do not pose an imminent threat to public health and safety.”⁶³

Given the specific consideration we gave to the Fukushima events, we disagree with Petitioners’ conclusion that we consider severe accidents such as Fukushima “too unlikely” to be considered in an EIS. What we instead concluded was that the Staff’s analysis of the proposed action in *Vogtle* already properly accounts for severe accidents generally, and

⁶⁰ *Id.* at ___ (slip op. at 72).

⁶¹ *Id.* at ___ (slip op. at 72-73). We also considered the fact that Staff’s environmental analysis did not consider concurrent accidents at multiple Vogtle units. *Id.* at ___ (slip op. at 73).

⁶² Corrected Transcript of Evidentiary Hearing (Sept. 27, 2011) (Tr.), 63-64 (Hatchett), attached as Appendix B to Order (Adopting Proposed Transcript Corrections, Admitting Post-Hearing Responses, and Closing the Record of the Proceeding) (Nov. 1, 2011) (unpublished). See also *id.* at 80 (Hatchett).

⁶³ CLI-12-2, 75 NRC at ___ (slip op. at 22).

appropriately concludes, more specifically, that the Fukushima events did not alter the Staff's conclusion that severe accident risks at Vogtle remain small.⁶⁴

Likewise, we wish to emphasize that our denial of a stay today in no way diminishes the seriousness with which we and our Staff continue to take the Fukushima events and their potential ramifications for our own regulations of nuclear power plants. As we explained in CLI-12-2, "our review of recommended actions associated with lessons learned from the Fukushima . . . events is ongoing,"⁶⁵ we will "continue[] to develop the technical basis for Fukushima-related requirements,"⁶⁶ and we will impose those new requirements "when the

⁶⁴ CLI-12-2, 75 NRC at __, __ (slip op. at 22, 74). See also Staff Answer at 10. None of this is to say that we consider the Fukushima events anything less than "significant" as that word is colloquially used. We considered Fukushima-related arguments at the mandatory hearing (see Tr. at 63-64, 79-82, 296-97, 303, 326-30, 355-56), in CLI-12-2, and throughout CLI-11-5. Further, we have undertaken a significant effort, through the Fukushima Task Force's Near-Term Report and other Staff activities associated with lessons learned from the events, to develop an appropriate regulatory response. See generally "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) (transmitted to the Commission via SECY-11-0093, "Near-Term Report and Recommendations for Agency Actions Following the Events in Japan" (July 12, 2011) (ML11186A950 (package)); Staff Requirements—SECY-11-0093—Near-Term Report and Recommendations for Agency Actions Following the Events in Japan (Aug. 19, 2011) (ML112310021); "Recommended Actions To Be Taken Without Delay from the Near-Term Task Force Report", Commission Paper SECY-11-0124 (Sept. 9, 2011) (ML11245A127); Staff Requirements—SECY-11-0124—Recommended Actions to be Taken without Delay from the Near-Term Task Force Report (Oct. 18, 2011) (ML112911571); "Prioritization of Recommended Actions to be Taken in Response to Fukushima Lessons Learned," Commission Paper SECY-11-0137 (Oct. 3, 2011) (ML11269A204); Staff Requirements—SECY-11-0137—Prioritization of Recommended Actions to be Taken in Response to Fukushima Lessons Learned (Dec. 15, 2011) (ML113490055); Staff Requirements—SECY-12-0010—Engagement of Stakeholders Regarding the Events in Japan (Mar. 21, 2012) (ML120820056).

⁶⁵ CLI-12-2, 75 NRC at __ (slip op. at 81).

⁶⁶ *Id.* at __ (slip op. at 84).

justification is fully developed and we evaluate the Staff's bases" for those requirements.⁶⁷

Indeed, we recently issued orders applicable to the *Vogtle* COLs and to other NRC licenses.⁶⁸

3. *Injury to Other Parties, and the Public Interest*

Because we have concluded that Petitioners failed to demonstrate either irreparable injury or a likelihood of success on the merits of their appeal to the D.C. Circuit, we need not consider the remaining two "stay" factors—injury to other parties and the public interest.⁶⁹ We nonetheless have briefly examined them. Petitioners maintain that if the NRC ultimately imposes new and costly Fukushima-driven requirements, ratepayers or taxpayers may ultimately pay the consequences. Southern argues that delaying construction at the *Vogtle* site to await judicial review on Petitioners' NEPA claims could degrade safety, would lead to job losses in the short term, and might cause higher construction costs in the long term. The competing arguments do not tip the balance in Petitioners' favor.

⁶⁷ *Id.* at __ (slip op. at 82).

⁶⁸ See *All Power Reactor Licensees and Holders of Construction Permits in Active or Deferred Status* (Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (Effective Immediately)), No. EA-12-049 (Mar. 12, 2012) (ML12054A735) and, particularly, Att. 3 ("Requirements for Mitigation Strategies for Beyond-Design-Basis External Events at COL Holder Reactor Sites (*Vogtle* Units 3 and 4)"); *All Power Reactor Licensees and Holders of Construction Permits in Active or Deferred Status* (Order Modifying Licenses with Regard to Reliable Spent Fuel Pool Instrumentation (Effective Immediately)), No. EA-12-051 (Mar. 12, 2012) (ML12054A679), and, particularly, Att. 3 ("Requirements for Reliable Spent Fuel Pool Level Instrumentation at Combined License Holder Reactor Sites" (specific to *Vogtle*)).

⁶⁹ See text associated with note 32, *supra*.

III. CONCLUSION

For the foregoing reasons, we *deny* Petitioners' Stay Motion.

IT IS SO ORDERED.⁷⁰

For the Commission

[NRC Seal]

/RA/

Annette L. Vietti-Cook
Secretary of the Commission

Dated at Rockville, Maryland,
this 16th day of April 2012.

⁷⁰ Petitioners also have sought a housekeeping stay to enable them to prepare a request that the D.C. Circuit stay the effectiveness of CLI-12-2. That motion is denied. There is no emergency warranting any kind of stay in this proceeding.

Chairman Jaczko's opinion, concurring:

I did not support the Commission decision authorizing the Vogtle licenses because they did not include a binding obligation to implement all Fukushima-related safety enhancements.

Nonetheless, given that these licenses have been issued, I concur with the general analysis of my colleagues that Petitioners have not satisfied the standard for obtaining a stay of a Commission decision.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Gregory B. Jaczko, Chairman
Kristine L. Svinicki
George Apostolakis
William D. Magwood, IV
William C. Ostendorff

In the Matters of)

LUMINANT GENERATION COMPANY LLC)
(Comanche Peak Nuclear Power Plant,)
Units 3 and 4))

Docket Nos. 52-034-COL
and 52-035-COL

ENERGY NORTHWEST)
(Columbia Generating Station))

Docket No. 50-397-LR

SOUTHERN NUCLEAR OPERATING CO.)
(Vogtle Electric Generating Plant,)
Units 3 and 4))

Docket Nos. 52-025-COL
and 52-026-COL

DUKE ENERGY CAROLINAS, LLC)
(William States Lee III Nuclear Station,)
Units 1 and 2))

Docket Nos. 52-018-COL
and 52-019-COL

CLI-12-07

MEMORANDUM AND ORDER

Today we address four identical petitions for review of the Atomic Safety and Licensing Board's decision in LBP-11-27, which declined to admit a new contention proposed in the captioned matters. As discussed below, we deny the petitions for review.¹

¹ We authorized issuance of the combined licenses in the *Vogtle* matter on February 9, 2012; the Office of New Reactors issued the licenses the next day. See *Southern Nuclear Operating Co.* (Vogtle Electric Generating Plant, Units 3 and 4), CLI-12-2, 75 NRC __ (Feb. 9, 2012) (slip op.); Matthews, David B., Office of New Reactors, NRC, letter to Joseph A. "Buzz" Miller, Southern Nuclear Operating Co., "Issuance of Combined Licenses and Limited Work Authorizations for Vogtle Electric Generating Plant (VEGP) Units 3 and 4) (Feb. 10, 2012) (continued . . .)

I. BACKGROUND

A. The New Contention

This matter stems from the filing of motions to reopen the *Vogtle*, *Comanche Peak*, and *Bell Bend* combined license (COL) proceedings, a motion to admit a new contention in the *Lee* COL proceeding, and a request for hearing and petition for leave to intervene associated with the *Columbia Generating Station* license renewal application, all of which sought to admit a substantively identical contention under the National Environmental Policy Act (NEPA).² The motions were referred to the Atomic Safety and Licensing Board Panel for resolution.³

(ADAMS accession no. ML113360395). Issuance of these licenses does not render the *Vogtle* petition for review moot; reopening was sought prior to license issuance.

² See *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* (filed in the *Vogtle* docket on Aug. 11, 2011, by Center for a Sustainable Coast, Georgia Women's Action for New Directions f/k/a Atlanta Women's Action for New Directions (Georgia WAND), and Southern Alliance for Clean Energy (SACE)); *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 a separately paginated *Contention Regarding NEPA Requirement to Address Safety and Environmental Implications of the Fukushima Task Force Report* (filed in the *Vogtle* docket on Aug. 11, 2011, by Blue Ridge Environmental Defense League (BREDL)) (BREDL Motion and BREDL Contention, respectively); *Contention Regarding NEPA Requirement to Address Safety and Environmental Implications of the Fukushima Task Force Report* (Aug. 11, 2011), and *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* (Aug. 11, 2011) (both filed by Texas State Representative Lon Burnam, Sustainable Energy and Economic Development (SEED) Coalition, and True Cost of Nukes in the *Comanche Peak* docket); *Motion to Admit New Contention Regarding the Safety and Environmental Implications of the Nuclear Regulatory Commission Task Force Report on the Fukushima Dai-ichi Accident* (filed in the *Lee* docket on Aug. 11, 2011, by BREDL); *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* (filed in the *Bell Bend* docket on Aug. 10, 2011, by Gene Stilp); *Petition for Hearing and Leave to Intervene in Operating License Renewal for Energy Northwest's Columbia Generating Station* (filed in the *Columbia Generating Station* docket on Aug. 22, 2011, by Northwest Environmental Advocates).

³ Order (Aug. 18, 2011) (referral to the Atomic Safety and Licensing Board) (unpublished); Order (Aug. 30, 2011) (referral to the Atomic Safety and Licensing Board) (unpublished); Memorandum from Vietti-Cook, Annette, Secretary of the Commission, to Chief Administrative Judge E. Roy Hawken, "Request for Hearing With Respect to Notice of Opportunity of Hearing (continued . . .)

The common contention arises from the report of the agency's Near-Term Task Force regarding the Fukushima Dai-ichi accident, discussed further below. The contention was founded, as a general matter, on the Task Force's recommendation that the NRC "increase the level of safety associated with adequate protection of the public health and safety."⁴ The common contention asserted that the environmental review documents in each of the captioned matters fail to satisfy NEPA because they do not account for the new and significant environmental implications stemming from the findings and recommendations included in the Near-Term Report.⁵

Regarding Renewal of Facility Operating License for Additional 20-Year Period for Energy Northwest Columbia Generating Station, Docket No. 50-397-LR" (Aug. 31, 2011). See Energy Northwest; Establishment of Atomic Safety and Licensing Board, 76 Fed. Reg. 56,242 (Sept. 12, 2011); Duke Energy Carolinas, LLC; Southern Nuclear Operating Company; Establishment of Atomic Safety and Licensing Board, 76 Fed. Reg. 56,242 (Sept. 12, 2011); Southern Nuclear Operating Co., PPL Bell Bend, L.L.C., Luminant Generation Company LLC; Establishment of Atomic Safety and Licensing Board, 76 Fed. Reg. 56,243 (Sept. 12, 2011). Each of these boards was comprised of the same three administrative judges; in the context of this decision, we refer to them as a single Board.

⁴ See *generally* "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) (transmitted to the Commission via "Near-Term Report and Recommendations for Agency Actions Following the Events in Japan," Commission Paper SECY-11-0093 (July 12, 2011), at 18 (ML11186A950) (package) (Near-Term Report)).

⁵ BREDL Contention at 5. The NEPA documents challenged for the *Lee*, *Columbia Generating Station*, and *Bell Bend* applications were the environmental reports; the *Vogtle* petitioners challenged the final supplemental EIS; and the *Comanche Peak* petitioners challenged the final supplemental EIS. LBP-11-27, 74 NRC at ___ (slip op. at 6 n.17). BREDL's proposed contention in the *Vogtle* matter differs slightly, in that the text of the contention references "seismic-flood and environmental justice issues." *Id.* at 4. The Board concluded that this slight difference in wording, and the fact that the contentions challenge various NEPA documents, were not significant for the purposes of its ruling. LBP-11-27, 74 NRC at ___ (slip op. at 6 n.17). As the Board observed, since the new contention was filed, the Staff has issued a draft supplemental EIS associated with the *Columbia Generating Station* license renewal application, and a draft EIS associated with the *Lee* COL application. "Generic Environmental Impact Statement for License Renewal of Nuclear Plants, Supplement 47 Regarding Columbia Generating Station, Draft Report for Comment," NUREG-1437 (Aug. 2011) (ML11227A007); "Draft Environmental Impact Statement for Combined Licenses (COLs) for William States Lee III Nuclear Station Units 1 and 2, Draft Report for Comment," NUREG-2111 (Dec. 2011) (ML113430094) (package).

In a single, consolidated decision, the Board denied the motions and intervention petition.⁶ The Board reasoned that the rationale in our recent decision in CLI-11-5 resolving multiple requests for relief was controlling, and denied the motions and petition as premature.⁷ These four timely petitions for review followed.⁸ The applicants and the Staff oppose the petitions.⁹

B. Events at the Fukushima Dai-ichi Nuclear Power Plant

A summary of the events that occurred at Fukushima Dai-ichi following the March 11, 2011 earthquake and tsunami, as well as actions taken by the NRC subsequent to the accident, is provided in our recent decision in CLI-11-5.¹⁰ As relevant here, soon after the events in Japan we established a Near-Term Task Force to conduct a review of the agency's processes and regulations to determine if we should make additional improvements to our regulatory

⁶ LBP-11-27, 74 NRC __ (Oct. 18, 2011) (slip op. at 15-16); Memorandum (Corrections regarding LBP-11-27) (Oct. 20, 2011) (unpublished).

⁷ *Id.* at __ (slip op. at 13-14). See generally *Union Electric Co. d/b/a Ameren Missouri* (Callaway Plant, Unit 2), CLI-11-5, 74 NRC __ (Sept. 9, 2011) (slip op.).

⁸ *Petition for Review of LBP-11-27* (Nov. 2, 2011) (Petition). Representative Lon Burnam, SEED Coalition, Public Citizen, and True Cost of Nukes filed a petition in the *Comanche Peak* COL proceeding; BREDL filed a single petition in both the *Vogtle* and *Lee* dockets; Center for a Sustainable Coast and SACE also filed a petition in the *Vogtle* docket; and Northwest Environmental Advocates filed a petition for review associated with the *Columbia Generating Station* license renewal application. Collectively, we refer to these entities as "Petitioners." The petitions themselves are substantively identical. For convenience, page references in today's decision correspond to the petition filed by BREDL in the *Vogtle* and *Lee* matters. Mr. Stilp did not seek review in the *Bell Bend* case.

⁹ *Duke Energy's Answer to Petition for Review of LBP-11-27* (Nov. 14, 2011) (*Lee*); *Southern Nuclear Operating Company's Answer Opposing Petitions for Review of LBP-11-27* (Nov. 14, 2011) (*Vogtle*); *Luminant's Answer in Opposition to Petition for Review of LBP-11-27* (Nov. 14, 2011) (*Comanche Peak*); *Energy Northwest's Answer in Opposition to Petition for Review of LBP-11-27* (Nov. 14, 2011) (*Columbia Generating Station*) (Energy Northwest Answer); *NRC Staff's Answer to Petition for Review of LBP-11-27* (Nov. 14, 2011). The Staff filed two identically titled answers, one in the *Columbia Generating Station* matter and one in the COL proceedings.

¹⁰ *Callaway*, CLI-11-5, 74 NRC at __ (slip op. at 3-4).

system.¹¹ In July, the Task Force provided to us a report transmitting its recommendations.

The Near-Term Report included twelve overarching recommendations for improving the safety of both new and operating nuclear reactors.¹² Also relevant here, we recently approved the Staff's recommended actions to be taken without delay from the Near-Term Report.¹³

II. DISCUSSION

A. Standards of Review

We will grant a petition for review at our discretion, giving due weight to the existence of a substantial question with respect to one or more of the following considerations:

- (i) a finding of material fact is clearly erroneous or in conflict with a finding as to the same fact in a different proceeding;
- (ii) a necessary legal conclusion is without governing precedent or is a departure from or contrary to established law;
- (iii) a substantial and important question of law, policy, or discretion has been raised;
- (iv) the conduct of the proceeding involved a prejudicial procedural error; or
- (v) any other consideration which we may deem to be in the public interest.¹⁴

¹¹ Tasking Memorandum—COMGBJ-11-0002—NRC Actions Following the Events in Japan, (Mar. 23, 2011) (ML110800456). See *generally* “Charter for the Nuclear Regulatory Commission Task Force to Conduct a Near-Term Evaluation of the Need for Agency Actions Following the Events in Japan” (Apr. 1, 2011) (ML11089A045).

¹² See *generally* Near-Term Report.

¹³ Staff Requirements—SECY-11-0124—Recommended Actions To Be Taken Without Delay from the Near-Term Task Force Report (Oct. 18, 2011) (ML112911571). See *generally* “Recommended Actions To Be Taken Without Delay from the Near-Term Task Force Report,” Commission Paper SECY-11-0124 (Sept. 9, 2011) (ML11245A127, ML11245A144) (paper and attachment); Staff Requirements—SECY-11-0137—Prioritization of Recommended Actions To Be Taken in Response to Fukushima Lessons Learned (Dec. 15, 2011) (ML113490055); “Prioritization of Recommended Actions To Be Taken in Response to Fukushima Lessons Learned,” Commission Paper SECY-11-0137 (Oct. 3, 2011) (ML11272A111) (package).

¹⁴ 10 C.F.R. § 2.341(b)(4)(i)-(v).

Petitioners in the *Comanche Peak*, *Vogtle*, and *Lee* matters properly raise this appeal under 10 C.F.R. § 2.341, which applies to new contentions filed after initial intervention petitions.¹⁵ Instead of section 2.311, which permits an appeal as of right on the question of whether an initial intervention petition should have been wholly denied, or alternatively, was granted improperly,¹⁶ in instances where an appeal involves a late-filed contention, 10 C.F.R. § 2.341 is routinely applied.¹⁷

With respect to the *Columbia Generating Station* matter, no timely initial intervention petition was submitted in response to the notice of opportunity for hearing published in the *Federal Register*, and as a consequence, no adjudicatory proceeding commenced.¹⁸

Accordingly, our rules required—and Northwest Environmental Advocates filed—an intervention petition and request for hearing to advance the common contention in the *Columbia Generating*

¹⁵ Cf. *South Texas Project Nuclear Operating Co.* (South Texas Project, Units 3 and 4), CLI-09-18, 70 NRC 859, 862 (2009) (“As a general matter, contentions filed after the initial petition are not subject to appeal pursuant to section 2.311.”). In the *Comanche Peak*, *Vogtle*, and *Lee* matters, Petitioners timely filed initial intervention petitions.

¹⁶ See *Statement of Policy on Conduct of Adjudicatory Proceedings*, CLI-98-12, 48 NRC 18, 23 (1998) (stating that 10 C.F.R. § 2.714a (now 10 C.F.R. § 2.311) allows an appeal of a ruling on contentions, “only if (a) the order wholly denies a petition for leave to intervene (i.e., the order denies the petitioner’s standing or the admission of a petitioner’s contentions) or (b) a party other than the petitioner alleges that a petition for leave to intervene or a request for hearing should have been wholly denied”). See also *AmerGen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-06-24, 64 NRC 111, 125 (2006).

¹⁷ See *South Texas Project*, CLI-09-18, 70 NRC at 862 (clarifying that “challenges to Board rulings on late-filed contentions normally fall under our rules for interlocutory review”). See also *Oyster Creek*, CLI-06-24, 64 NRC at 111; *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-01-1, 53 NRC 1 (2001); *AmerGen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-09-7, 69 NRC 235 (2009).

¹⁸ Energy Northwest submitted the license renewal application for Columbia Generating Station on January 19, 2010. The notice of opportunity for hearing was published in the *Federal Register* on March 11, 2010; an intervention petition would have been due by May 10, 2010. See Notice of Acceptance for Docketing of the Application, Notice of Opportunity for Hearing Regarding Renewal of Facility Operating License No. NPF-21 for an Additional 20-Year Period [,] Energy Northwest; Columbia Generating Station, 75 Fed. Reg. 11,572 (Mar. 11, 2010). Northwest Environmental Advocates filed its intervention petition on August 22, 2011, over one year later.

Station matter. Energy Northwest therefore argues that Northwest Environmental Advocates' appeal should have been filed pursuant to 10 C.F.R. § 2.311, and, as a result, also claims that the appeal was filed out of time—five days beyond the ten-day deadline set forth in section 2.311.¹⁹ While we agree with Energy Northwest that Northwest Environmental Advocates' appeal lies under section 2.311,²⁰ as a matter of discretion we consider the petition for review. In any event, the standard for review of contention admissibility determinations is the same, whether an appeal lies under section 2.311 or 2.341—we will disturb a licensing board's contention admissibility ruling only if there has been an error of law or an abuse of discretion.²¹

Petitioners argue that the Board's decision is reviewable because a "necessary legal conclusion is without governing precedent or is a departure from or contrary to established law," and also because a "substantial and important question of law, policy or discretion has been raised."²² As discussed below, Petitioners have not raised a substantial question warranting review.²³

¹⁹ Energy Northwest Answer at 6.

²⁰ See *South Carolina Electric and Gas Co.* (Virgil C. Summer Nuclear Station, Unit 1), ALAB-642, 13 NRC 881 (1981) (applying the predecessor regulation to section 2.311, 10 C.F.R. § 2.714a, to its review of an initial intervention petition filed over four years after the deadline).

²¹ *Progress Energy Florida, Inc.* (Levy County Nuclear Power Plant, Units 1 and 2), CLI-10-2, 71 NRC 27, 29 (2010). See also *AmerGen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-09-7, 69 NRC 235, 260 (2009); *Luminant Generation Co. LLC* (Comanche Peak Nuclear Power Plant, Units 3 and 4), CLI-11-9, 74 NRC __ (Oct. 4, 2011) (slip op. at 5).

²² Petition at 5-6.

²³ *Id.* at 2. Petitioners in all four proceedings filed motions to reinstate and supplement the basis for the rejected contention prior to filing their appeals of LBP-11-27. See *Motion to Reinstate and Supplement the Basis for Fukushima Task Force Report Contention* (filed in the *Comanche Peak* docket on Oct. 28, 2011 by Representative Burnam, SEED Coalition, Public Citizen, and True Cost of Nukes); *Motion to Reinstate and Supplement the Basis for Fukushima Task Force Report Contention* (filed in the *Vogtle* docket by Center for a Sustainable Coast, Georgia WAND, and SACE on Oct. 28, 2011); *Motion to Reinstate and Supplement the Basis for Fukushima Task Force Report Contention* (filed in the *Vogtle* docket by BREDL on Oct. 28, 2011); *Motion to Reinstate and Supplement the Basis for Fukushima Task Force Report* (continued . . .)

B. Analysis

Petitioners first argue that the Board erred in concluding that the proffered contention was premature because it interpreted our holding in CLI-11-5 too broadly.²⁴ In CLI-11-5, we held that a request for a generic NEPA review arising out of the Near-Term Report was premature. According to Petitioners, however, the Board misconstrued that holding as applicable to individual licensing proceedings as well. Petitioners instead assert that CLI-11-5 determined that the Commission would consider the NEPA issue in individual licensing proceedings.²⁵ As explained below, we disagree with Petitioners' characterization of the Board's ruling.

A host of petitions were filed after the Fukushima Dai-ichi accident requesting the suspension of adjudicatory, licensing, and rulemaking activities associated with several power plants.²⁶ As part of a laundry list of requested relief, those petitions requested that the NRC conduct a generic NEPA analysis on the grounds that the Fukushima accident constituted "new and significant" information that must be analyzed as part of the environmental review for new reactor and license renewal decisions.²⁷ In resolving those petitions we noted that, although the Task Force had issued its report, the evaluation of the Fukushima Dai-ichi accident was still

Contention (filed in the *Lee* proceeding by BREDL on Oct. 28, 2011); *Motion to Reinstate and Supplement the Basis for Fukushima Task Force Report Contention* (filed in the *Columbia Generating Station* docket by Northwest Environmental Advocates on Oct. 28, 2011).

Petitioners requested on appeal that we hold the petitions for review in abeyance pending issuance of the Board's ruling on their motions to reinstate and supplement the contention. See Petition at 2. The Board has now ruled on their motions to supplement; Petitioners' request is moot. See LBP-11-36, 74 NRC __ (Nov. 30, 2011) (slip op.).

²⁴ Petition at 6.

²⁵ *Id.* at 6-7.

²⁶ See generally *Callaway*, CLI-11-5, 74 NRC __.

²⁷ *Id.* at 9. See also, e.g., *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* (Apr. 18, 2011), at 2 (ML111080869).

ongoing and the implications for U.S. reactors were not yet known.²⁸ In short, we declined to conduct a generic NEPA analysis at that time.²⁹

Here, Petitioners argue that application-specific NEPA analyses must consider “new and significant” information arising from the Fukushima accident. They attempt to distinguish CLI-11-5 by claiming that our holding there rested on a finding that sufficient information was not yet available to conduct a *generic* analysis.³⁰ In support of its conclusion in LBP-11-27, however, the Board did not assume that we had ruled prospectively on application-specific NEPA contentions. The Board found that Petitioners did not relate their contention to any unique characteristics of the particular site at issue, and therefore, the contention was akin to the generic type of NEPA review that we declared premature in CLI-11-5.³¹

While it is true that the precise relief sought is slightly different—site-specific analyses versus a generic one—we decline to find that the Board erred in relying on the reasoning underlying our decision. Although some time has passed, and regulatory initiatives are well under way, we continue to gain information on the Fukushima Dai-ichi events. As we stated in CLI-11-5, “[i]f new and significant information comes to light that requires consideration as part of the ongoing preparation of application-specific NEPA documents, the agency will assess the significance of that information as appropriate.”³²

Petitioners have not identified environmental effects from the Fukushima Dai-ichi events that can be concretely evaluated at this time, or identified specific new information challenging the site-specific environmental assessments in the captioned matters. We therefore decline to

²⁸ *Id.* at 30-31.

²⁹ *Id.*

³⁰ Petition at 6.

³¹ LBP-11-27, 74 NRC at __ (slip op. at 13-14).

³² *Callaway*, CLI-11-5, 74 NRC at __ (slip op. at 30-31).

disturb the Board's conclusion that nothing in Petitioners' contention overcomes the prematurity concerns we outlined in CLI-11-5.

The contention also fails on an independent ground. Petitioners argue that the Near-Term Report constitutes new and significant information because it stems from the Fukushima Dai-ichi accident and "because it raises an extraordinary level of concern regarding the manner in which the proposed operation of the [facilities in the captioned matters] 'impacts public health and safety.'"³³

NEPA imposes a continuing obligation on federal agencies to supplement an existing environmental impact statement (EIS), if the proposed action has not been taken, "in response to 'significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts.'"³⁴ Our rules provide that we will supplement an EIS if there are: (1) substantial changes in the proposed action relevant to environmental concerns, or (2) new and significant circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts.³⁵ To constitute a basis for supplementing an EIS, Petitioners are correct that the new information must present a "seriously different picture of the environmental impact of the proposed project from what was previously envisioned."³⁶ As discussed above, although our Fukushima lessons-learned review continues, Petitioners have

³³ See BREDL Contention at 12.

³⁴ *Idaho Sporting Cong. Inc. v. Alexander*, 222 F.3d 562, 566 n.2 (9th Cir. 2000).

³⁵ 10 C.F.R. §§ 51.72(a), 51.92(a).

³⁶ *Hydro Resources, Inc.* (2929 Coors Road, Suite 101, Albuquerque, NM, 87120), CLI-99-22, 50 NRC 3, 14 (1999) (citing *Marsh v. Oregon Natural Resources Council*, 490 U.S. 360, 373 (1989); *Sierra Club v. Froehlke*, 816 F.2d 205, 210 (5th Cir. 1987). See also *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 28 (2006).

not pointed to concrete information that “is material to the findings the NRC must make to support” the captioned proposed actions.³⁷

Petitioners further assert that the Board engaged in circular logic to conclude that information is “new and significant” only when it compels agency action and that, instead, the Board should assess whether “Petitioners have raised a litigable claim.”³⁸ We disagree. As a general matter, “new” information that may be assessed for its relevance to an ongoing licensing matter may be derived in a wide variety of ways; such information is assessed for significance regardless of whether it has been acted upon in some way by us, or by the NRC Staff. In any event, however, a careful reading of the Board’s decision makes clear that, while the Board expressed doubt as to the weight the Near-Term Report should be accorded prior to our action on the recommendations, the fact that we had not yet acted on the Report was not the basis for its decision. Rather, the Board fundamentally relied on the reasoning in CLI-11-5:

Although the Task Force completed its review and provided its recommendations to us, the agency continues to evaluate the accident and its implications for U.S. facilities and the full picture of what happened at Fukushima is still far from clear. In short, we do not know today the full implications of the Japan events for U.S. facilities. Therefore, any generic NEPA duty – if one were appropriate at all – does not accrue now.³⁹

We find the Board’s determination reasonable, and decline to disturb it. As tangible Fukushima lessons emerge—whether from inside or outside the NRC—Fukushima-related contentions in individual adjudications may become more plausible, except insofar as the NRC is taking generic steps to address them. Furthermore, although the question before the Commission in CLI-11-5 was a request for a generic analysis (rather than a particular

³⁷ 10 C.F.R. § 2.309(f)(1)(iv).

³⁸ Petition at 8.

³⁹ LBP-11-27, 74 NRC at __ (slip op. at 12) (citing *Callaway*, 74 NRC at __ (slip op. at 30)).

contention), we expect the Boards in individual licensing proceedings to assess contentions against applicable procedural standards.

Here, the Board addressed—albeit briefly—Petitioners’ failure to point to “any unique characteristics of the site of the particular reactor that might make the content,” of the Near-Term Report “of greater environmental significance to that reactor than to United States reactors in general.”⁴⁰ The contention presumes, without support, that the Near-Term Report raised “new and significant” environmental implications that have not been addressed in previous environmental reports (or Staff environmental reviews) prepared for the referenced applications. Petitioners make only broad claims that the Near-Term Report constitutes new and significant information “because it raises an extraordinary level of concern regarding the manner in which the proposed operation of the [facilities in the captioned matters] impacts health and safety.”⁴¹ Petitioners also assert, without more, that

the Task Force’s recommendation to completely overhaul the NRC regulatory structure, including redefining what level of protection of public health and safety should be regarded as adequate, easily surpasses the objective “new and significant” test because it [p]aints a “seriously different picture of the environmental impact” of the licensing and [license renewal] of nuclear reactors than before the release of the Task Force Report.⁴²

⁴⁰ LBP-11-27, 74 NRC at ___ (slip op. at 13-14). Neither the declaration provided by Dr. Arjun Makhijani nor that provided by Dr. Ross McCluney referenced any conditions relevant to any of the sites—or applications— at issue here. See BREDL Motion (attaching *Declaration of Dr. Arjun Makhijani Regarding Safety and Environmental Significance of NRC Task Force Report Regarding Lessons Learned from Fukushima Daiichi Nuclear Power Station Accident* (Aug. 8, 2011) and *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* (Aug. 11, 2011). Dr. Makhijani’s declaration was filed with each request; Dr. McCluney’s declaration was filed in support of BREDL’s motions in the *Vogtle* and *Lee* matters.

⁴¹ BREDL Contention at 12.

⁴² Petition at 9.

But our contention admissibility rules require a proposed contention to be supported by “alleged fact or expert opinion.”⁴³ As the Board correctly observed, reference to the Task Force Report recommendations alone, without facts or expert opinion that explain their significance for the unique characteristics of the sites or reactors that are the subject of the petitions, does not provide sufficient support for the common contention.⁴⁴ We expect Petitioners to identify information that was not considered in the environmental review for the application at issue and explain, with asserted facts or expert opinion, how it presents a “seriously different picture of the environmental impact of the proposed project from what was previously envisioned.”⁴⁵ Applying this standard, we see no error or abuse of discretion in the Board’s finding that Petitioners failed to include facts sufficient to demonstrate a genuine dispute with respect to a particular captioned application.⁴⁶ While this may be because information available to, and relied upon by,

⁴³ 10 C.F.R. § 2.309(f)(1)(v) & (vi). See also *Exelon Generation Co., LLC* (Early Site Permit for Clinton ESP Site), CLI-05-29, 62 NRC 801, 808 (2005).

⁴⁴ LBP-11-27, 74 NRC at __ (slip op. at 13).

⁴⁵ *Callaway*, CLI-11-5, 74 NRC at __ (slip op. at 31) (citing *Hydro Resources*, CLI-99-22, 50 NRC at 14 (citing, in turn, *Marsh*, 490 U.S. at 373; *Sierra Club*, 816 F.2d at 210)).

⁴⁶ In the *Vogtle* matter, BREDL also raised an environmental justice claim, supported by the Declaration of Rev. Charles Utley. With respect to the *Vogtle* COL application, Rev. Utley challenges the conclusions in the final supplemental EIS regarding environmental justice, asserting that the applicant and the Staff “disregarded” particular new information. Dr. Utley also asserts that the NRC should require Southern to provide shelter, evacuation assistance, and other protections to residents of several communities, and that potassium iodide should be made available to all residents of Burke County. See BREDL Contention at 2, 6; *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* (Aug. 11, 2011), at 3-6 (appended to the BREDL Motion). The Board found that BREDL’s claims are rooted in “longstanding generic concerns” about the NRC’s implementation of environmental justice and its policy on the distribution of potassium iodide, and noted that both of these concerns appropriately could have been raised much earlier in the proceeding—particularly, at the time the Staff issued the draft supplemental EIS associated with the *Vogtle* application in September 2010. LBP-11-27, 74 NRC at __ (slip op. at 14 n.54). BREDL did not expressly challenge the Board’s decision on its environmental justice claims, and, thus appears to have abandoned the claim. In any event, however, we find no error in the Board’s decision on that point.

Petitioners was not sufficient to support an admissible contention, the contention nonetheless is too vague to be appropriate for litigation in an individual proceeding.⁴⁷

As discussed above, the NRC's continuing efforts to implement regulatory actions arising from post-Fukushima lessons learned may require, under NEPA, new or supplemental environmental analyses. However, as particularly relevant to the *Vogtle* matter, where COLs now have issued, we observe that an application-specific NEPA review represents a "snapshot" in time. NEPA requires that we conduct our environmental review with the best information available today.⁴⁸ It does not require that we wait until inchoate information matures into something that later might affect our review.⁴⁹

⁴⁷ The Board in this case did not rely on the NRC's standards for reopening a closed record. LBP-11-27, 74 NRC at ___ (slip op. at 5). Those standards require, among other things, a fully-supported showing of "significance" and a likelihood of a "materially different result." See 10 C.F.R. § 2.326. As we recently found in *Pilgrim*, where we also considered (and rejected) Fukushima-related contentions, "[t]he level of support required for a motion to reopen is greater than that required for a contention under the general admissibility requirements." *Entergy Nuclear Generation Co. and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), CLI-12-3, 75 NRC ___ (Feb. 22, 2012) (slip op. at 7). Given our holding (explained above) that Petitioners' contention lacked sufficient specificity and support to satisfy our ordinary contention-admissibility rule, it necessarily follows that the contention also failed our more stringent reopening rule. And, even were we to assume contention admissibility, Petitioners have not shown that their various claims, which are quite general, have the kind of "significance" and potential for a "different result" that under our reopening rule would justify restarting already-closed hearings.

⁴⁸ See *Village of Bensenville v. FAA*, 457 F.3d 52, 71-72 (D.C. Cir. 2006) (reasoning that the review method chosen by the agency in "creating its models with the best information available when it began its analysis and then checking the assumptions of those models as new information became available, was a reasonable means of balancing . . . competing considerations, particularly given the many months required to conduct full modeling with new data"); *Town of Winthrop v. FAA*, 535 F.3d 1, 9-13 (1st Cir. 2008) (upholding agency decision not to supplement an EIS with information in an area of research that was "still developing"). *Accord Marsh*, 490 U.S. at 374 ("[A]n agency need not supplement an EIS every time new information comes to light after the EIS is finalized. To require otherwise would render agency decision[-]making intractable, always awaiting updated information only to find the new information outdated by the time a decision is made.").

⁴⁹ See *Marsh*, 490 U.S. at 374. As noted above, our rules enable us to supplement an EIS if, before a proposed action is taken, new and significant information comes to light that bears on the proposed action or its impacts, consistent with the Supreme Court's decision in *Marsh*. See *id.* at 373-74.

III. CONCLUSION

For the foregoing reasons, we *deny* the petitions for review.

IT IS SO ORDERED.⁵⁰

For the Commission

[NRC SEAL]

/RA/

Andrew L. Bates
Acting Secretary of the Commission

Dated at Rockville, Maryland,
this 16th day of March, 2012.

⁵⁰ Commissioner Magwood's approval does not pertain to the *Comanche Peak* COL proceeding, in which he is not participating.

Judith S. Sunley, Director, Division of Human Resource Management and PRB Executive Secretary.

Dated: February 21, 2012.

Judith S. Sunley,

Director, Division of Human Resource Management.

[FR Doc. 2012-4640 Filed 2-28-12; 8:45 am]

BILLING CODE 7555-01-M

NEIGHBORHOOD REINVESTMENT CORPORATION

Corporate Administration Committee Board of Directors; Sunshine Act Meeting

TIME AND DATE: 1 p.m., Thursday, March 8, 2012.

PLACE: 1325 G Street NW., Suite 800, Boardroom, Washington, DC 20005.

STATUS: Open.

CONTACT PERSON FOR MORE INFORMATION:

Erica Hall, Assistant Corporate Secretary, (202) 220-2376; ehall@nw.org.

AGENDA:

- I. Call to Order
- II. Executive Session
- III. Severance Policy
- IV. Board Committee Composition/ Elections/Appointments
- V. Washington, DC Lease Update
- VI. Human Resources Updates
- VII. Benefit Activities
- VIII. Strategic Planning Update
- IX. Adjournment

Erica Hall,

Assistant Corporate Secretary.

[FR Doc. 2012-4908 Filed 2-27-12; 11:15 am]

BILLING CODE 7570-02-P

NUCLEAR REGULATORY COMMISSION

[Docket Nos. 52-025 and 52-026; NRC-2008-0252]

Vogtle Electric Generating Plant, Units 3 and 4; Issuance of Combined Licenses and Limited Work Authorizations and Record of Decision

AGENCY: Nuclear Regulatory Commission.

ACTION: Issuance of Combined Licenses (NPF-91 and NPF-92) and Limited Work Authorization (LWA) (Nos. LWA-001 and LWA-002) and Record of Decision Issuance.

FOR FURTHER INFORMATION CONTACT:

Ravindra Joshi, Office of New Reactors, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; telephone:

301-415-6191; email: ravindra.joshi@nrc.gov.

SUPPLEMENTARY INFORMATION:

I. Introduction

Pursuant to Title 10 of the Code of Federal Regulations (10 CFR) 2.106, the Nuclear Regulatory Commission (NRC) is providing notice of the issuance of Combined Licenses (COL), NPF-91 and NPF-92 and Limited Work Authorizations LWA-001 and LWA-002 to Southern Nuclear Operating Company (SNC), Georgia Power Company, Oglethorpe Power Corporation, Municipal Electric Authority of Georgia, and the City of Dalton, Georgia, an incorporated municipality in the State of Georgia acting by and through its Board of Water, Light and Sinking Fund Commissioners. With respect to the application for COLs and for LWAs filed by SNC, on behalf of itself and the other four entities named above, the NRC finds that the applicable standards and requirements of the Atomic Energy Act of 1954, as amended, and the Commission regulations have been met. The NRC finds that any required notifications to other agencies or bodies have been duly made and that there is reasonable assurance that the facility will be constructed and will operate in conformity with the license, as amended, the provisions of the Act, and the Commission regulations. Furthermore, the NRC finds that the licensees are technically and financially qualified to engage in the activities authorized, and that issuance of the license will not be inimical to the common defense and security or to the health and safety of the public. Finally, with respect to the LWAs, the NRC finds that there are no unresolved safety issues related to the activities that would constitute good cause for withholding the authorizations.

Accordingly, the COLs and LWAs were issued on February 10, 2012, and are effective immediately.

II. Further Information

The NRC has prepared a Final Safety Evaluation Report (FSER) and Final Supplemental Environmental Impact Statement (FSEIS) that document the information reviewed and NRC's conclusion. The Commission has also issued its Memorandum and Order documenting its final decision on the uncontested hearing held on September 27-28, 2011, which serves as the Record of Decision in this proceeding. In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," details with respect to this action, including the

FSER and accompanying documentation included in the combined license package, as well as the Commission's hearing decision, are available electronically at the NRC's Electronic Reading Room at <http://www.nrc.gov/reading-rm/adams.html>. From this site, persons can access the NRC's Agencywide Document Access and Management System (ADAMS), which provides text and image files of NRC's public documents. The ADAMS accession numbers for the documents related to this notice are:

- ML110450302 'Final Safety Evaluation Report for Combined Licenses for Vogtle Electric Generating Plant, Units 3 and 4'
- ML11076A010 NUREG-1947, 'Final Supplemental Environmental Impact Statement for Combined Licenses for Vogtle Electric Generating Plant, Units 3 and 4'
- ML11180A086 VEGP COL Application— Submittal 8 of the application
- ML12040A192 Commission's Memorandum and Order on the uncontested hearing (record of decision)
- ML112991101 Combined License No. NPF-91
- ML113060407 Combined License No. NPF-92
- ML113350133 Limited Work Authorization No. LWA-001
- ML113350143 Limited Work Authorization No. LWA-002

Persons who do not have access to ADAMS or who encounter problems in accessing the documents located in ADAMS should contact the NRC Public Document Room (PDR) Reference staff by telephone at 1-800-397-4209, 301-415-4737, or by email to pdr.resource@nrc.gov. The documents are also available at <http://www.nrc.gov/reactors/new-reactors/col.html>.

These documents may also be viewed electronically on the public computers located at the NRC's Public Document Room (PDR), O 1 F21, One White Flint North, 11555 Rockville Pike, Rockville, MD 20852. The PDR reproduction contractor will copy documents for a fee.

For the Nuclear Regulatory Commission.

Dated at Rockville, Maryland, this 13th day of February 2012.

Mark Tonacci,

Chief, Licensing Branch 4, Division of New Reactor Licensing, Office of New Reactors.

[FR Doc. 2012-4824 Filed 2-28-12; 8:45 am]

BILLING CODE 7590-01-P

COMBINED LICENSE

VOGTLE ELECTRIC GENERATING PLANT UNIT 3

SOUTHERN NUCLEAR OPERATING COMPANY, INC.

GEORGIA POWER COMPANY

OGLETHORPE POWER CORPORATION

MUNICIPAL ELECTRIC AUTHORITY OF GEORGIA

CITY OF DALTON, GEORGIA

Docket No. 52-025

License No. NPF-91

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for a combined license (COL) for Vogtle Electric Generating Plant (VEGP) Unit 3 filed by Southern Nuclear Operating Company, Inc. (SNC) acting on behalf of Georgia Power Company, Oglethorpe Power Corporation, Municipal Electric Authority of Georgia, and the City of Dalton, Georgia, an incorporated municipality in the state of Georgia acting by and through its Board of Water, Light and Sinking Fund Commissioners (City of Dalton), herein referred to as "the VEGP owners," which incorporates by reference Appendix D to 10 CFR Part 52 and Early Site Permit No. ESP-004, complies with the applicable standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission regulations set forth in 10 CFR Chapter I, and all required notifications to other agencies or bodies have been duly made;
 - B. There is reasonable assurance that the facility will be constructed and will operate in conformity with the application, as amended, the provisions of the Act, and the Commission regulations set forth in 10 CFR Chapter I, except as exempted from compliance in Sections 2.F and 2.G below;
 - C. There is reasonable assurance (i) that the activities authorized by this COL can be conducted without endangering the health and safety of the public and (ii) that such activities will be conducted in compliance with the Commission regulations set forth in 10 CFR Chapter I, except as exempted from compliance in Sections 2.F and 2.G below;

- D. SNC¹ is technically qualified to engage in the activities authorized by this license in accordance with the Commission regulations set forth in 10 CFR Chapter I. SNC and the VEGP owners together are financially qualified to engage in the activities authorized by this COL in accordance with the Commission regulations set forth in 10 CFR Chapter I;
 - E. SNC and the VEGP owners have satisfied the applicable provisions of 10 CFR Part 140, "Financial Protection Requirements and Indemnity Agreements;"
 - F. The issuance of this license will not be inimical to the common defense and security or to the health and safety of the public;
 - G. After weighing the environmental, economic, technical, and other benefits of the facility against environmental and other costs and considering reasonable available alternatives, the issuance of this license subject to the conditions for protection of the environment set forth herein is in accordance with Subpart A of 10 CFR Part 51 and all applicable requirements have been satisfied; and
 - H. The receipt, possession, and use of source, byproduct, and special nuclear material as authorized by this license will be in accordance with the applicable regulations in 10 CFR Parts 30, 40, and 70.
2. On the basis of the foregoing findings regarding this facility, COL No. NPF-91 is hereby issued to SNC, Georgia Power Company, Oglethorpe Power Corporation, Municipal Electric Authority of Georgia, and the City of Dalton, Georgia (the licensees) to read as follows:
- A. This license applies to the VEGP Unit 3, a light-water nuclear reactor and associated equipment (the facility), owned by the VEGP Owners. The facility would be located adjacent to existing VEGP Units 1 and 2 on a 3,169-acre coastal plain bluff on the southwest side of the Savannah River in eastern Burke County, GA, approximately 15 miles east-northeast of Waynesboro, GA, and 26 miles southeast of Augusta, GA, and is described in the licensees' final safety analysis report (FSAR), as supplemented and amended.
 - B. Subject to the conditions and requirements incorporated herein, the Commission hereby licenses:
 - (1) SNC pursuant to Sections 103 and 185b. of the Act and 10 CFR Part 52, to construct, possess, use, and operate the facility at the designated location in accordance with the procedures and limitations set forth in this license;
 - (2) The VEGP owners pursuant to the Act and 10 CFR Part 52, to possess but not operate the facility at the designated location in Burke County, GA, in accordance with the procedures and limitations set forth in this license;

¹ SNC is authorized by the VEGP owners to exercise responsibility and control over the physical construction, operation, and maintenance of the facility.

- (3)
 - (a) SNC pursuant to the Act and 10 CFR Part 70, to receive and possess at any time, special nuclear material as reactor fuel, in accordance with the limitations for storage and in amounts necessary for reactor operation, described in the FSAR, as supplemented and amended;
 - (b) SNC pursuant to the Act and 10 CFR Part 70, to use special nuclear material as reactor fuel, after a Commission finding under 10 CFR 52.103(g) has been made, in accordance with the limitations for storage and in amounts necessary for reactor operation, described in the FSAR, as supplemented and amended;
 - (4)
 - (a) SNC pursuant to the Act and 10 CFR Parts 30 and 70, to receive, possess, and use, at any time before a Commission finding under 10 CFR 52.103(g), such byproduct and special nuclear material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts, as necessary;
 - (b) SNC pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess, and use, after a Commission finding under 10 CFR 52.103(g), any byproduct, source, and special nuclear material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as necessary;
 - (5)
 - (a) SNC pursuant to the Act and 10 CFR Parts 30 and 70, to receive, possess, and use, before a Commission finding under 10 CFR 52.103(g), in amounts not exceeding those specified in 10 CFR 30.72, any byproduct or special nuclear material that is (1) in unsealed form; (2) on foils or plated surfaces, or (3) sealed in glass, for sample analysis or instrument calibration or other activity associated with radioactive apparatus or components;
 - (b) SNC pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess, and use, after a Commission finding under 10 CFR 52.103(g), in amounts as necessary, any byproduct, source, or special nuclear material without restriction as to chemical or physical form, for sample analysis or instrument calibration or other activity associated with radioactive apparatus or components but not uranium hexafluoride; and
 - (6) SNC pursuant to the Act and 10 CFR Parts 30 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.
- C. The license is subject to, and the licensees shall comply with, all applicable provisions of the Act and the rules, regulations, and orders of the Commission, including the conditions set forth in 10 CFR Chapter I, now or hereafter in effect.

- D. The license is subject to, and SNC shall comply with, the conditions specified and incorporated below:

(1) Changes during Construction

- (a) SNC may request use of a preliminary amendment request (PAR) process, for license amendments, at any time before a Commission finding under 10 CFR 52.103(g). To use the PAR process, SNC shall submit a written request to the Office of New Reactors (NRO) in accordance with COL-ISG-025, "Changes during Construction under Part 52."
- (b) Before NRO's issuance of a written PAR notification, SNC shall submit the license amendment request (LAR). Thereafter, NRO will issue a written PAR notification, setting forth whether SNC may proceed in accordance with the PAR, LAR, and COL-ISG-025. If SNC elects to proceed and the LAR is subsequently denied, SNC shall return the facility to its current licensing basis.

(2) Pre-operational Testing

- (a) SNC shall perform the design-specific pre-operational tests identified below:
 - 1. In-Containment Refueling Water Storage Tank (IRWST) Heatup Test (first plant test as identified in AP1000 Design Control Document (DCD), Rev. 19, Section 14.2.9.1.3 Item (h));
 - 2. Pressurizer Surge Line Stratification Evaluation (first plant test as identified in AP1000 DCD, Rev. 19, Section 14.2.9.1.7 Item (d));
 - 3. Reactor Vessel Internals Vibration Testing (first plant test as identified in AP1000 DCD, Rev. 19, Section 14.2.9.1.9);
 - 4. Core Makeup Tank Heated Recirculation Tests (first three plants test as identified in AP1000 DCD, Rev. 19, Section 14.2.9.1.3 Items (k) and (w)); and
 - 5. Automatic Depressurization System Blowdown Test (first three plants test as identified in AP1000 DCD, Rev. 19, Section 14.2.9.1.3 Item (s)).
- (b) SNC shall review and evaluate the results of the tests identified in Section 2.D.(2)(a) of this license and confirm that these test results are within the range of acceptable values predicted or

otherwise confirm that the tested systems perform their specified functions in accordance with AP1000 DCD Rev. 19, Section 14.2.9,

- (c) SNC shall notify the Director of NRO, or the Director's designee, in writing, upon successful completion of the design-specific pre-operational tests identified in Section 2.D.(2)(a) of this license; and
- (d) SNC shall notify the Director of NRO, or the Director's designee, in writing, upon the successful completion of all the ITAAC included in Appendix C to this license.

(3) Nuclear Fuel Loading and Pre-critical Testing

- (a) Until the submission of the notification required by Section 2.D.(2)(c) of this license, SNC shall not load fuel into the reactor vessel;
- (b) Upon submission of the notification required by Section 2.D.(2)(c) of this license and upon a Commission finding in accordance with 10 CFR 52.103(g) that all the acceptance criteria in the ITAAC in Appendix C to this license are met, SNC is authorized to perform pre-critical tests in accordance with the conditions specified herein;
- (c) SNC shall perform the pre-critical tests identified in AP1000 DCD Rev. 19, Section 14.2.10.1;
- (d) SNC shall review and evaluate the results of the tests identified in Section 2.D.(3)(c) of this license and confirm that these test results are within the range of acceptable values predicted or otherwise confirm that the tested systems perform their specified functions in accordance with AP1000 DCD Rev. 19, Section 14.2.10; and
- (e) SNC shall notify the Director of NRO, or the Director's designee, in writing, upon successful completion of the pre-critical tests identified in Section 2.D.(3)(c) of this license.

(4) Initial Criticality and Low-Power Testing

- (a) Upon submission of the notification required by Section 2.D.(3)(e) of this license, SNC is authorized to operate the facility at reactor steady-state core power levels not to exceed 5-percent thermal power in accordance with the conditions specified herein;
- (b) SNC shall perform the initial criticality and low-power tests identified in AP1000 DCD Rev. 19, Sections 14.2.10.2 and 14.2.10.3, respectively, the Natural Circulation (first plant test) identified in AP1000 DCD Rev. 19, Section 14.2.10.3.6, and the

Passive Residual Heat Removal Heat Exchanger (first plant test) identified in AP1000 DCD Rev. 19, Section 14.2.10.3.7;

- (c) SNC shall review and evaluate the results of the tests identified in Section 2.D.(4)(b) of this license and confirm that these test results are within the range of acceptable values predicted or otherwise confirm that the tested systems perform their specified functions in accordance with AP1000 DCD Rev. 19, Sections 14.2.10.2 and 14.2.10.3; and
- (d) SNC shall notify the Director of NRO, or the Director's designee, in writing, upon successful completion of initial criticality and low-power tests identified in Section 2.D.(4)(b) of this license, including the design-specific tests identified therein.

(5) Power Ascension Testing

- (a) Upon submission of the notification required by Section 2.D.(4)(d) of this license, SNC is authorized to operate the facility at reactor steady-state core power levels not to exceed 100-percent thermal power in accordance with the conditions specified herein, but only for the purpose of performing power ascension testing;
- (b) SNC shall perform the power ascension tests identified in AP1000 DCD Rev. 19, Section 14.2.10.4, the Rod Cluster Control Assembly Out of Bank Measurements (first plant test) identified in the AP1000 DCD, Rev. 19, Section 14.2.10.4.6, and the Load Follow Demonstration (first plant test) identified in AP1000 DCD, Rev. 19, Section 14.2.10.4.22;
- (c) SNC shall review and evaluate the results of the tests identified in Section 2.D.(5)(b) of this license and confirm that these test results are within the range of acceptable values predicted or otherwise confirm that the tested systems perform their specified functions in accordance with AP1000 DCD Rev. 19, Section 14.2.10.4; and
- (d) SNC shall notify the Director of NRO, or the Director's designee, in writing, upon successful completion of power ascension tests identified in Section 2.D.(5)(b) of this license, including the design-specific tests identified therein.

(6) Maximum Power Level

Upon submission of the notification required by Section 2.D.(5)(d) of this license, SNC is authorized to operate the facility at steady state reactor core power levels not to exceed 3400 MW thermal (100-percent thermal power), as described in the FSAR, in accordance with the conditions specified herein.

(7) Reporting Requirements

- (a) Within 30 days of a change to the initial test program described in FSAR Section 14, Initial Test Program, made in accordance with 10 CFR 50.59 or in accordance with 10 CFR Part 52, Appendix D, Section VIII, "Processes for Changes and Departures," SNC shall report the change to the Director of NRO, or the Director's designee, in accordance with 10 CFR 50.59(d).
- (b) SNC shall report any violation of a requirement in Section 2.D.(3), Section 2.D.(4), Section 2.D.(5), and Section 2.D.(6) of this license within 24 hours. Initial notification shall be made to the NRC Operations Center in accordance with 10 CFR 50.72, with written follow up in accordance with 10 CFR 50.73.

(8) Incorporation

The Technical Specifications, Environmental Protection Plan, and ITAAC in Appendices A, B, and C, respectively, of this license are hereby incorporated into this license.

(9) Technical Specifications

The technical specifications in Appendix A to this license become effective upon a Commission finding that the acceptance criteria in this license (ITAAC) are met in accordance with 10 CFR 52.103(g).

(10) Operational Program Implementation

SNC shall implement the programs or portions of programs identified below, on or before the date SNC achieves the following milestones:

- (a) Environmental Qualification Program implemented before initial fuel load;
- (b) Reactor Vessel Material Surveillance Program implemented before initial criticality;
- (c) Preservice Testing Program implemented before initial fuel load;
- (d) Containment Leakage Rate Testing Program implemented before initial fuel load;
- (e) Fire Protection Program
 - 1. The fire protection measures in accordance with Regulatory Guide (RG) 1.189 for designated storage building areas (including adjacent fire areas that could affect the storage area) implemented before initial receipt

- of byproduct or special nuclear materials that are not fuel (excluding exempt quantities as described in 10 CFR 30.18);
2. The fire protection measures in accordance with RG 1.189 for areas containing new fuel (including adjacent areas where a fire could affect the new fuel) implemented before receipt of fuel onsite;
 3. All fire protection program features implemented before initial fuel load;
- (f) Standard Radiological Effluent Controls implemented before initial fuel load;
- (g) Offsite Dose Calculation Manual implemented before initial fuel load;
- (h) Radiological Environmental Monitoring Program implemented before initial fuel load;
- (i) Process Control Program implemented before initial fuel load;
- (j) Radiation Protection Program (RPP) (including the ALARA principle) or applicable portions as identified in FSAR Section 12.5 thereof:
1. RPP features applicable to receipt of by-product, source, or special nuclear materials (excluding exempt quantities as described in 10 CFR 30.18) implemented before initial receipt of such materials;
 2. RPP features (including the ALARA principle) applicable to new fuel implemented before receipt of initial fuel on site;
 3. All other RPP features (including the ALARA principle) except for those applicable to control radioactive waste shipment implemented before initial fuel load;
 4. RPP features (including the ALARA principle) applicable to radioactive waste shipment implemented before first shipment of radioactive waste;
- (k) Reactor Operator Training Program implemented 18 months before the scheduled date of initial fuel load;
- (l) Motor-Operated Valve Testing Program implemented before initial fuel load;

(m) Initial Test Program

1. Construction Test Program implemented before the first construction test;
2. Preoperational Test Program implemented before the first preoperational test; and
3. Startup Test Program implemented before initial fuel load;

(n) Special Nuclear Material Control and Accounting Program implemented before initial receipt of special nuclear material; and

(o) Special Nuclear Material Physical Protection Program implemented before initial receipt of special nuclear material on site.

(11) Operational Program Implementation Schedule

No later than 12 months after issuance of the COL, SNC shall submit to the Director of NRO, or the Director's designee, a schedule for implementation of the operational programs listed in FSAR Table 13.4-201, including the associated estimated date for initial loading of fuel. The schedule shall be updated every 6 months until 12 months before scheduled fuel loading, and every month thereafter until all the operational programs listed in FSAR Table 13.4-201 have been fully implemented.

(12) Site- and Unit-specific Conditions

- (a) SNC shall either remove and replace, or shall improve, the soils directly above the blue bluff marl for soils under or adjacent to Seismic Category I structures, to eliminate any liquefaction potential.
- (b) Before commencing installation of individual piping segments and connected components in their final locations, SNC shall complete the as-designed pipe rupture hazards analysis for compartments (rooms) containing those segments in accordance with the criteria outlined in the AP1000 DCD, Rev. 19, Sections 3.6.1.3.2 and 3.6.2.5, and shall inform the Director of NRO, or the Director's designee, in writing, upon the completion of this analysis and the availability of the as-designed pipe rupture hazards analysis reports.
- (c) Before commencing installation of individual piping segments, identified in AP1000 DCD, Rev. 19, Section 3.9.8.7, and connected components in their final locations in the facility, SNC shall complete the analysis of the as-designed individual piping segments and shall inform the Director of NRO, or the Director's

designee, in writing, upon the completion of these analyses and the availability of the design reports for the selected piping packages.

- (d) No later than 180 days before initial fuel load, SNC shall submit to the Director of NRO, or the Director's designee, in writing, a fully developed set of plant-specific emergency action levels (EALs) for VEGP Unit 3 in accordance with Nuclear Energy Institute (NEI) 07-01, "Methodology for Development of Emergency Action Levels Advanced Passive Light Water Reactors," Revision 0, with no deviations. The EALs shall have been discussed and agreed upon with State and local officials.
- (e) SNC shall not revise or modify the provisions of Sections 5.3, 5.4, 5.6, 5.9, and 5.10 of the Special Nuclear Material (SNM) Physical Protection Program until the requirements of 10 CFR 73.55 are implemented.
- (f) No later than 12 months after issuance of the COL, SNC shall submit to the Director of NRO, or the Director's designee, a schedule for implementation of the following license conditions. The schedule shall be updated every 6 months until 12 months before scheduled fuel loading, and every month thereafter until each license condition has been fully implemented. The schedule shall identify the completion of or implementation of the following:
 - 1. The construction and inspection procedures for steel concrete composite (SC) construction activities for seismic Category I nuclear island modules (including shield building SC modules) described in AP1000 DCD Rev. 19, Section 3.8.4.8;
 - 2. The spent fuel rack Metamic Coupon monitoring program (before initial fuel load);
 - 3. Implementation of the flow accelerated corrosion (FAC) program including construction phase activities (before initial fuel load);
 - 4. A turbine maintenance and inspection program, which must be consistent with the maintenance and inspection program plan activities and inspection intervals identified in FSAR Section 10.2.3.6 (before initial fuel load);
 - 5. The availability of documented instrumentation uncertainties to calculate a power calorimetric uncertainty (before initial fuel load);

6. The availability of administrative controls to implement maintenance and contingency activities related to the power calorimetric uncertainty instrumentation (before initial fuel load);
7. The site-specific severe accident management guidelines (before startup testing);
8. The operational and programmatic elements of the mitigative strategies for responding to circumstances associated with loss of large areas of the plant due to explosions or fire developed in accordance with 10 CFR 50.54(hh)(2) (before initial fuel load); and
9. The pre-operational and startup procedures (including the site-specific startup administration manual) identified in FSAR Section 14.2.3 (before initiating the initial test program).

(g) Before initial fuel load, SNC shall:

1. Update the seismic interaction analysis in AP1000 DCD, Rev. 19, Section 3.7.3.5 to reflect as-built information, which must be based on as-procured data, as well as the as-constructed condition;
2. Reconcile the seismic analyses described in Section 3.7.2 of the AP1000 DCD, Rev. 19, to account for detailed design changes, including, but not limited to, those due to as-procured or as-built changes in component mass, center of gravity, and support configuration based on as-procured equipment information;
3. Calculate the instrumentation uncertainties of the actual plant operating instrumentation to confirm that either the design limit departure from nucleate boiling ratio (DNBR) values remain valid or that the safety analysis minimum DNBR bounds the new design limit DNBR values plus DNBR penalties;
4. Update the pressure temperature (P-T) limits using the pressure temperature limits report (PTLR) methodologies approved in AP1000 DCD, Rev. 19, using the plant-specific material properties or confirm that the reactor vessel material properties meet the specifications of and use the Westinghouse generic PTLR curves;
5. Verify that plant-specific belt line material properties are consistent with the properties given in AP1000 DCD Rev. 19, Section 5.3.3.1 and Tables 5.3-1 and 5.3-3. The verification must include a pressurized thermal shock

- (PTS) evaluation based on as-procured reactor vessel material data and the projected neutron fluence for the plant design objective. Submit this PTS evaluation report to the Director of NRO, or the Director's designee, in writing, at least 18 months before initial fuel load;
6. Review differences between the as-built plant and the design used as the basis for the AP1000 seismic margin analysis. SNC shall perform a verification walkdown to identify differences between the as-built plant and the design. SNC shall evaluate any differences and must modify the seismic margin analysis as necessary to account for the plant-specific design and any design changes or departures from the certified design. SNC shall compare the as-built structures, systems, and components (SSC) high confidence, low probability of failures (HCLPFs) with those assumed in the AP1000 seismic margin evaluation, before initial fuel load. SNC shall evaluate deviations from the HCLPF values or assumptions in the seismic margin evaluation due to the as-built configuration and final analysis to determine if vulnerabilities have been introduced;
 7. Review differences between the as-built plant and the design used as the basis for the AP1000 probabilistic risk assessment (PRA) and the AP1000 DCD, Rev. 19, Table 19.59-18. SNC shall evaluate the plant-specific PRA-based insight differences and shall modify the plant-specific PRA model as necessary to account for the plant-specific design and any design changes or departure from the PRA certified in Rev. 19 of the AP1000 DCD;
 8. Review differences between the as-built plant and the design used as the basis for the AP1000 internal fire and internal flood analysis. SNC shall evaluate the plant-specific internal fire and internal flood analyses and shall modify the analyses as necessary to account for the plant-specific design and any design changes or departures from the design certified in Rev. 19 of the AP1000 DCD; and
 9. Perform a thermal lag assessment of the as-built equipment listed in Tables 6b and 6c in Attachment A of APP-GW-GLR-069, "Equipment Survivability Assessment," to provide additional assurance that this equipment can perform its severe accident functions during environmental conditions resulting from hydrogen burns associated with severe accidents. SNC shall perform this assessment for equipment used for severe accident mitigation that has not been tested at severe accident conditions. SNC shall assess the ability of the as-built equipment to perform

during accident hydrogen burns using the environment enveloping method or the test based thermal analysis method described in Electric Power Research Institute (EPRI) NP-4354, "Large Scale Hydrogen Burn Equipment Experiments."

10. Implement a surveillance program for explosively actuated valves (squib valves) that includes the following provisions in addition to the requirements specified in the edition of the *ASME Code for Operation and Maintenance of Nuclear Power Plants* (OM Code) as incorporated by reference in 10 CFR 50.55a.

- a. Preservice Testing

All explosively actuated valves shall be preservice tested by verifying the operational readiness of the actuation logic and associated electrical circuits for each explosively actuated valve with its pyrotechnic charge removed from the valve. This must include confirmation that sufficient electrical parameters (voltage, current, resistance) are available at the explosively actuated valve from each circuit that is relied upon to actuate the valve. In addition, a sample of at least 20% of the pyrotechnic charges in all explosively actuated valves shall be tested in the valve or a qualified test fixture to confirm the capability of each sampled pyrotechnic charge to provide the necessary motive force to operate the valve to perform its intended function without damage to the valve body or connected piping. The sampling must select at least one explosively actuated valve from each redundant safety train. Corrective action shall be taken to resolve any deficiencies identified in the operational readiness of the actuation logic or associated electrical circuits, or the capability of a pyrotechnic charge. If a charge fails to fire or its capability is not confirmed, all charges with the same batch number shall be removed, discarded, and replaced with charges from a different batch number that has demonstrated successful 20% sampling of the charges.

- b. Operational Surveillance

Explosively actuated valves shall be subject to the following surveillance activities after commencing plant operation:

- i. At least once every 2 years, each explosively actuated valve shall undergo visual external examination and remote internal examination (including evaluation and removal of fluids or contaminants that may interfere with operation of the valve) to verify the operational readiness of the valve and its actuator. This examination shall also verify the appropriate position of the internal actuating mechanism and proper operation of remote position indicators. Corrective action shall be taken to resolve any deficiencies identified during the examination with post-maintenance testing conducted that satisfies the preservice testing requirements.
- ii. At least once every 10 years, each explosively actuated valve shall be disassembled for internal examination of the valve and actuator to verify the operational readiness of the valve assembly and the integrity of individual components and to remove any foreign material, fluid, or corrosion. The examination schedule shall provide for both of the two valve designs used for explosively actuated valves at the facility to be included among the explosively actuated valves to be disassembled and examined every 2 years. Corrective action shall be taken to resolve any deficiencies identified during the examination with post-maintenance testing conducted that satisfies the preservice testing requirements.
- iii. For explosively actuated valves selected for test sampling every 2 years in accordance with the ASME OM Code, the operational readiness of the actuation logic and associated electrical circuits shall be verified for each sampled explosively actuated valve following removal of its charge. This must include confirmation that sufficient electrical parameters (voltage, current, resistance) are available for each valve actuation circuit. Corrective action shall be taken to resolve any deficiencies identified in the actuation logic or associated electrical circuits.

- iv. For explosively actuated valves selected for test sampling every 2 years in accordance with the ASME OM Code, the sampling must select at least one explosively actuated valve from each redundant safety train. Each sampled pyrotechnic charge shall be tested in the valve or a qualified test fixture to confirm the capability of the charge to provide the necessary motive force to operate the valve to perform its intended function without damage to the valve body or connected piping. Corrective action shall be taken to resolve any deficiencies identified in the capability of a pyrotechnic charge in accordance with the preservice testing requirements.

This license condition shall expire upon (1) incorporation of the above surveillance provisions for explosively actuated valves into the facility's inservice testing program, or (2) incorporation of inservice testing requirements for explosively actuated valves in new reactors (i.e., plants receiving a construction permit, or combined license for construction and operation, after January 1, 2000) to be specified in a future edition of the ASME OM Code as incorporated by reference in 10 CFR 50.55a, including any conditions imposed by the NRC, into the facility's inservice testing program.

- E. The licensees shall have and maintain financial protection of such type and in such amounts as the Commission shall require in accordance with Section 170 of the Atomic Energy Act of 1954, as amended, to cover public liability claims.
- F. Exemptions
 - (1) The following exemption from any part of the referenced design certification rule meets the requirements of 10 CFR 52.7 and Section VIII.A.4, VIII.B.4, or VIII.C.4 of Appendix D to 10 CFR Part 52, is authorized by law, will not present an undue risk to the public health or safety, and is consistent with the common defense and security. Special circumstances are present in that the application of the regulation in this particular circumstance is not necessary to achieve the underlying purpose of the rule (10 CFR 50.12(a)(2)(ii)) as described in the application and the staff SER dated August 5, 2011.
 - (a) The licensees are exempt from the requirement of 10 CFR Part 52, Appendix D, Section IV.A.2.a to include a plant-specific DCD containing the same type of information and using the same organization and numbering as the generic DCD for the AP1000

certified design. This exemption is specific to the organization and numbering scheme in the FSAR and is related to departure number VEGP DEP 1-1.

- (2) The following exemptions from regulations were granted in the rulemaking for the design certification rule that is referenced in the application. In accordance with 10 CFR Part 52, Appendix D, Section V, Applicable Regulations, Subsection B, and pursuant to 10 CFR 52.63(a)(5), the licensees are exempt from portions of the following regulations:
 - (a) Paragraph (f)(2)(iv) of 10 CFR 50.34—Plant Safety Parameter Display Console;
 - (b) Paragraph (c)(1) of 10 CFR 50.62—Auxiliary (or emergency) feedwater system; and
 - (c) Appendix A to 10 CFR Part 50, GDC 17—Second offsite power supply circuit.
- (3) For the reasons set forth below, the following specific exemptions, which are outside the scope of the design certification rule referenced in the application, are granted:
 - (a) The licensees are exempt from the requirements of 10 CFR 70.22(b), 10 CFR 70.32(c), 10 CFR 74.31, 10 CFR 74.41, and 10 CFR 74.51 because the licensees meet the requirements of 10 CFR 70.17 and 74.7 as follows: The exemption is authorized by law, will not present an undue risk to the public health or safety, and is consistent with the common defense and security. Additionally, special circumstances are present in that the application of the regulations in this particular circumstance is not necessary to achieve the underlying purpose of the rule (10 CFR 50.12(a)(2)(ii)) as described in the FSAR and the staff SER dated August 5, 2011.
 - (b) The licensees are exempt from the requirements of 10 CFR 52.93(a)(1) as it relates to the exemption granted in Section 2.F.(1)(a) of this license because the exemption meets the requirements of 10 CFR 52.7, because the exemption is authorized by law, will not present an undue risk to the public health or safety, and is consistent with the common defense and security. Additionally, special circumstances are present in that the application of the regulation in this particular circumstance is not necessary to achieve the underlying purpose of the rule (10 CFR 50.12(a)(2)(ii)) as described in the staff SER dated August 5, 2011.

G. Variances

Having applied the technically relevant criteria applicable to the application for the Early Site Permit No. ESP-004, to the variances requested in the application, as described in NUREG-1923, the staff SER dated July 2009, the following variances from the early site permit (ESP) are granted:

- (1) A variance (VEGP VAR 1.6-1) from Section 1.6 of the VEGP ESP site safety analysis report (SSAR) as it references Revision 15 of the AP1000 DCD instead of Revision 19 of the AP1000 DCD, which is incorporated by reference in the FSAR;
- (2) The variance (VEGP VAR 1.6-2) from Section 3.8.5, Foundations, of the VEGP ESP SSAR, which references Revision 15 of the AP1000 DCD, to reference Revision 19 of the AP1000 DCD, which is incorporated by reference in the FSAR;
- (3) The variance (VEGP VAR 1.6-3) from Chapter 15, Accident Analysis, of the VEGP ESP SSAR which references Revision 15 of the AP1000 DCD, to reference Revision 19 of the AP1000 DCD, which is incorporated by reference in the FSAR;
- (4) The variance (VEGP VAR 1.2-1) from the site layout information in Figures 1-4, 1-5, 13.3-2, and Part 5 Figure ii, of the VEGP ESP SSAR, which is superseded by the corresponding information in FSAR Section 1.1, Figure 1.1-202;
- (5) The variance (VEGP VAR 2.2-1) from the information related to onsite chemical hazards in Section 2.2.3.2.3 and Table 2.2-6 of the VEGP ESP SSAR, which is superseded by the corresponding information contained in FSAR Sections 2.2 and 6.4; and
- (6) The variance (VEGP VAR 2.3-1) from the information related to design-basis temperature characteristics in Section 2.3.1.5 and Table 1-1 of the VEGP ESP SSAR, which is superseded by the corresponding information contained in FSAR Section 2.3.1.5 and Table 2.0-201, which conforms to AP1000 DCD, Revision 19.

H. Following SNC's ITAAC closure notifications under paragraph (c)(1) of 10 CFR 52.99 until the Commission makes the finding under 10 CFR 52.103(g), SNC shall notify the NRC, in a timely manner, of new information that materially alters the bases for determining that either inspections, tests, or analyses were performed as required, or that acceptance criteria are met. The notification must contain sufficient information to demonstrate that, notwithstanding the new information, the prescribed inspections, tests, or analyses have been performed as required, and the prescribed acceptance criteria are met.

I. SNC shall maintain the guidance and strategies developed in accordance with 10 CFR 50.54(hh)(2).

- J. This license is effective as of February 10, 2012, and shall expire at midnight on the date 40 years from the date that the Commission finds that the acceptance criteria in the combined license are met in accordance with 10 CFR 52.103(g).

FOR THE NUCLEAR REGULATORY
COMMISSION

/RA/

Michael R. Johnson, Director
Office of New Reactors

Appendices:

Appendix A – Technical Specifications

Appendix B – Environmental Protection Plan

Appendix C – Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC)

COMBINED LICENSE

VOGTLE ELECTRIC GENERATING PLANT UNIT 4

SOUTHERN NUCLEAR OPERATING COMPANY, INC.

GEORGIA POWER COMPANY

OGLETHORPE POWER CORPORATION

MUNICIPAL ELECTRIC AUTHORITY OF GEORGIA

CITY OF DALTON, GEORGIA

Docket No. 52-026

License No. NPF-92

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for a combined license (COL) for Vogtle Electric Generating Plant (VEGP) Unit 4 filed by Southern Nuclear Operating Company, Inc. (SNC) acting on behalf of Georgia Power Company, Oglethorpe Power Corporation, Municipal Electric Authority of Georgia, and the City of Dalton, Georgia, an incorporated municipality in the state of Georgia acting by and through its Board of Water, Light and Sinking Fund Commissioners (City of Dalton), herein referred to as "the VEGP owners," which incorporates by reference Appendix D to 10 CFR Part 52 and Early Site Permit No. ESP-004, complies with the applicable standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission regulations set forth in 10 CFR Chapter I, and all required notifications to other agencies or bodies have been duly made;
 - B. There is reasonable assurance that the facility will be constructed and will operate in conformity with the application, as amended, the provisions of the Act, and the Commission regulations set forth in 10 CFR Chapter I, except as exempted from compliance in Sections 2.F and 2.G below;
 - C. There is reasonable assurance (i) that the activities authorized by this COL can be conducted without endangering the health and safety of the public and (ii) that such activities will be conducted in compliance with the Commission regulations set forth in 10 CFR Chapter I, except as exempted from compliance in Sections 2.F and 2.G below;

- D. SNC¹ is technically qualified to engage in the activities authorized by this license in accordance with the Commission regulations set forth in 10 CFR Chapter I. SNC and the VEGP owners together are financially qualified to engage in the activities authorized by this COL in accordance with the Commission regulations set forth in 10 CFR Chapter I;
 - E. SNC and the VEGP owners have satisfied the applicable provisions of 10 CFR Part 140, "Financial Protection Requirements and Indemnity Agreements;"
 - F. The issuance of this license will not be inimical to the common defense and security or to the health and safety of the public;
 - G. After weighing the environmental, economic, technical, and other benefits of the facility against environmental and other costs and considering reasonable available alternatives, the issuance of this license subject to the conditions for protection of the environment set forth herein is in accordance with Subpart A of 10 CFR Part 51 and all applicable requirements have been satisfied; and
 - H. The receipt, possession, and use of source, byproduct, and special nuclear material as authorized by this license will be in accordance with the applicable regulations in 10 CFR Parts 30, 40, and 70.
2. On the basis of the foregoing findings regarding this facility, COL No. NPF-92 is hereby issued to SNC, Georgia Power Company, Oglethorpe Power Corporation, Municipal Electric Authority of Georgia, and the City of Dalton, Georgia (the licensees) to read as follows:
- A. This license applies to the VEGP Unit 4, a light-water nuclear reactor and associated equipment (the facility), owned by the VEGP Owners. The facility would be located adjacent to existing VEGP Units 1 and 2 on a 3,169-acre coastal plain bluff on the southwest side of the Savannah River in eastern Burke County, GA, approximately 15 miles east-northeast of Waynesboro, GA, and 26 miles southeast of Augusta, GA, and is described in the licensees' final safety analysis report (FSAR), as supplemented and amended.
 - B. Subject to the conditions and requirements incorporated herein, the Commission hereby licenses:
 - (1) SNC pursuant to Sections 103 and 185b. of the Act and 10 CFR Part 52, to construct, possess, use, and operate the facility at the designated location in accordance with the procedures and limitations set forth in this license;
 - (2) The VEGP owners pursuant to the Act and 10 CFR Part 52, to possess but not operate the facility at the designated location in Burke County, GA, in accordance with the procedures and limitations set forth in this license;

¹ SNC is authorized by the VEGP owners to exercise responsibility and control over the physical construction, operation, and maintenance of the facility.

- (3)
 - (a) SNC pursuant to the Act and 10 CFR Part 70, to receive and possess at any time, special nuclear material as reactor fuel, in accordance with the limitations for storage and in amounts necessary for reactor operation, described in the FSAR, as supplemented and amended;
 - (b) SNC pursuant to the Act and 10 CFR Part 70, to use special nuclear material as reactor fuel, after a Commission finding under 10 CFR 52.103(g) has been made, in accordance with the limitations for storage and in amounts necessary for reactor operation, described in the FSAR, as supplemented and amended;
 - (4)
 - (a) SNC pursuant to the Act and 10 CFR Parts 30 and 70, to receive, possess, and use, at any time before a Commission finding under 10 CFR 52.103(g), such byproduct and special nuclear material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts, as necessary;
 - (b) SNC pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess, and use, after a Commission finding under 10 CFR 52.103(g), any byproduct, source, and special nuclear material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as necessary;
 - (5)
 - (a) SNC pursuant to the Act and 10 CFR Parts 30 and 70, to receive, possess, and use, before a Commission finding under 10 CFR 52.103(g), in amounts not exceeding those specified in 10 CFR 30.72, any byproduct or special nuclear material that is (1) in unsealed form; (2) on foils or plated surfaces, or (3) sealed in glass, for sample analysis or instrument calibration or other activity associated with radioactive apparatus or components;
 - (b) SNC pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess, and use, after a Commission finding under 10 CFR 52.103(g), in amounts as necessary, any byproduct, source, or special nuclear material without restriction as to chemical or physical form, for sample analysis or instrument calibration or other activity associated with radioactive apparatus or components but not uranium hexafluoride; and
 - (6) SNC pursuant to the Act and 10 CFR Parts 30 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.
- C. The license is subject to, and the licensees shall comply with, all applicable provisions of the Act and the rules, regulations, and orders of the Commission, including the conditions set forth in 10 CFR Chapter I, now or hereafter in effect.

- D. The license is subject to, and SNC shall comply with, the conditions specified and incorporated below:

(1) Changes during Construction

- (a) SNC may request use of a preliminary amendment request (PAR) process, for license amendments, at any time before a Commission finding under 10 CFR 52.103(g). To use the PAR process, SNC shall submit a written request to the Office of New Reactors (NRO) in accordance with COL-ISG-025, "Changes during Construction under Part 52."
- (b) Before NRO's issuance of a written PAR notification, SNC shall submit the license amendment request (LAR). Thereafter, NRO will issue a written PAR notification, setting forth whether SNC may proceed in accordance with the PAR, LAR, and COL-ISG-025. If SNC elects to proceed and the LAR is subsequently denied, SNC shall return the facility to its current licensing basis.

(2) Pre-operational Testing

- (a) SNC shall perform the design-specific pre-operational tests identified below:
 - 1. In-Containment Refueling Water Storage Tank (IRWST) Heatup Test (first plant test as identified in AP1000 Design Control Document (DCD), Rev. 19, Section 14.2.9.1.3 Item (h));
 - 2. Pressurizer Surge Line Stratification Evaluation (first plant test as identified in AP1000 DCD, Rev. 19, Section 14.2.9.1.7 Item (d));
 - 3. Reactor Vessel Internals Vibration Testing (first plant test as identified in AP1000 DCD, Rev. 19, Section 14.2.9.1.9);
 - 4. Core Makeup Tank Heated Recirculation Tests (first three plants test as identified in AP1000 DCD, Rev. 19, Section 14.2.9.1.3 Items (k) and (w)); and
 - 5. Automatic Depressurization System Blowdown Test (first three plants test as identified in AP1000 DCD, Rev. 19, Section 14.2.9.1.3 Item (s)).
- (b) SNC shall review and evaluate the results of the tests identified in Section 2.D.(2)(a) of this license and confirm that these test results are within the range of acceptable values predicted or

otherwise confirm that the tested systems perform their specified functions in accordance with AP1000 DCD Rev. 19, Section 14.2.9,

- (c) SNC shall notify the Director of NRO, or the Director's designee, in writing, upon successful completion of the design-specific pre-operational tests identified in Section 2.D.(2)(a) of this license; and
- (d) SNC shall notify the Director of NRO, or the Director's designee, in writing, upon the successful completion of all the ITAAC included in Appendix C to this license.

(3) Nuclear Fuel Loading and Pre-critical Testing

- (a) Until the submission of the notification required by Section 2.D.(2)(c) of this license, SNC shall not load fuel into the reactor vessel;
- (b) Upon submission of the notification required by Section 2.D.(2)(c) of this license and upon a Commission finding in accordance with 10 CFR 52.103(g) that all the acceptance criteria in the ITAAC in Appendix C to this license are met, SNC is authorized to perform pre-critical tests in accordance with the conditions specified herein;
- (c) SNC shall perform the pre-critical tests identified in AP1000 DCD Rev. 19, Section 14.2.10.1;
- (d) SNC shall review and evaluate the results of the tests identified in Section 2.D.(3)(c) of this license and confirm that these test results are within the range of acceptable values predicted or otherwise confirm that the tested systems perform their specified functions in accordance with AP1000 DCD Rev. 19, Section 14.2.10; and
- (e) SNC shall notify the Director of NRO, or the Director's designee, in writing, upon successful completion of the pre-critical tests identified in Section 2.D.(3)(c) of this license.

(4) Initial Criticality and Low-Power Testing

- (a) Upon submission of the notification required by Section 2.D.(3)(e) of this license, SNC is authorized to operate the facility at reactor steady-state core power levels not to exceed 5-percent thermal power in accordance with the conditions specified herein;
- (b) SNC shall perform the initial criticality and low-power tests identified in AP1000 DCD Rev. 19, Sections 14.2.10.2 and 14.2.10.3, respectively, the Natural Circulation (first plant test)

identified in AP1000 DCD Rev. 19, Section 14.2.10.3.6, and the Passive Residual Heat Removal Heat Exchanger (first plant test) identified in AP1000 DCD Rev. 19, Section 14.2.10.3.7;

- (c) SNC shall review and evaluate the results of the tests identified in Section 2.D.(4)(b) of this license and confirm that these test results are within the range of acceptable values predicted or otherwise confirm that the tested systems perform their specified functions in accordance with AP1000 DCD Rev. 19, Sections 14.2.10.2 and 14.2.10.3; and
- (d) SNC shall notify the Director of NRO, or the Director's designee, in writing, upon successful completion of initial criticality and low-power tests identified in Section 2.D.(4)(b) of this license, including the design-specific tests identified therein.

(5) Power Ascension Testing

- (a) Upon submission of the notification required by Section 2.D.(4)(d) of this license, SNC is authorized to operate the facility at reactor steady-state core power levels not to exceed 100-percent thermal power in accordance with the conditions specified herein, but only for the purpose of performing power ascension testing;
- (b) SNC shall perform the power ascension tests identified in AP1000 DCD Rev. 19, Section 14.2.10.4, the Rod Cluster Control Assembly Out of Bank Measurements (first plant test) identified in the AP1000 DCD, Rev. 19, Section 14.2.10.4.6, and the Load Follow Demonstration (first plant test) identified in AP1000 DCD, Rev. 19, Section 14.2.10.4.22;
- (c) SNC shall review and evaluate the results of the tests identified in Section 2.D.(5)(b) of this license and confirm that these test results are within the range of acceptable values predicted or otherwise confirm that the tested systems perform their specified functions in accordance with AP1000 DCD Rev. 19, Section 14.2.10.4; and
- (d) SNC shall notify the Director of NRO, or the Director's designee, in writing, upon successful completion of power ascension tests identified in Section 2.D.(5)(b) of this license, including the design-specific tests identified therein.

(6) Maximum Power Level

Upon submission of the notification required by Section 2.D.(5)(d) of this license, SNC is authorized to operate the facility at steady state reactor core power levels not to exceed 3400 MW thermal (100-percent thermal power), as described in the FSAR, in accordance with the conditions specified herein.

(7) Reporting Requirements

- (a) Within 30 days of a change to the initial test program described in FSAR Section 14, Initial Test Program, made in accordance with 10 CFR 50.59 or in accordance with 10 CFR Part 52, Appendix D, Section VIII, "Processes for Changes and Departures," SNC shall report the change to the Director of NRO, or the Director's designee, in accordance with 10 CFR 50.59(d).
- (b) SNC shall report any violation of a requirement in Section 2.D.(3), Section 2.D.(4), Section 2.D.(5), and Section 2.D.(6) of this license within 24 hours. Initial notification shall be made to the NRC Operations Center in accordance with 10 CFR 50.72, with written follow up in accordance with 10 CFR 50.73.

(8) Incorporation

The Technical Specifications, Environmental Protection Plan, and ITAAC in Appendices A, B, and C, respectively, of this license are hereby incorporated into this license.

(9) Technical Specifications

The technical specifications in Appendix A to this license become effective upon a Commission finding that the acceptance criteria in this license (ITAAC) are met in accordance with 10 CFR 52.103(g).

(10) Operational Program Implementation

SNC shall implement the programs or portions of programs identified below, on or before the date SNC achieves the following milestones:

- (a) Environmental Qualification Program implemented before initial fuel load;
- (b) Reactor Vessel Material Surveillance Program implemented before initial criticality;
- (c) Preservice Testing Program implemented before initial fuel load;
- (d) Containment Leakage Rate Testing Program implemented before initial fuel load;
- (e) Fire Protection Program
 - 1. The fire protection measures in accordance with Regulatory Guide (RG) 1.189 for designated storage building areas (including adjacent fire areas that could affect the storage area) implemented before initial receipt

- of byproduct or special nuclear materials that are not fuel (excluding exempt quantities as described in 10 CFR 30.18);
2. The fire protection measures in accordance with RG 1.189 for areas containing new fuel (including adjacent areas where a fire could affect the new fuel) implemented before receipt of fuel onsite;
 3. All fire protection program features implemented before initial fuel load;
- (f) Standard Radiological Effluent Controls implemented before initial fuel load;
- (g) Offsite Dose Calculation Manual implemented before initial fuel load;
- (h) Radiological Environmental Monitoring Program implemented before initial fuel load;
- (i) Process Control Program implemented before initial fuel load;
- (j) Radiation Protection Program (RPP) (including the ALARA principle) or applicable portions as identified in FSAR Section 12.5 thereof:
1. RPP features applicable to receipt of by-product, source, or special nuclear materials (excluding exempt quantities as described in 10 CFR 30.18) implemented before initial receipt of such materials;
 2. RPP features (including the ALARA principle) applicable to new fuel implemented before receipt of initial fuel on site;
 3. All other RPP features (including the ALARA principle) except for those applicable to control radioactive waste shipment implemented before initial fuel load;
 4. RPP features (including the ALARA principle) applicable to radioactive waste shipment implemented before first shipment of radioactive waste;
- (k) Reactor Operator Training Program implemented 18 months before the scheduled date of initial fuel load;
- (l) Motor-Operated Valve Testing Program implemented before initial fuel load;

(m) Initial Test Program

1. Construction Test Program implemented before the first construction test;
2. Preoperational Test Program implemented before the first preoperational test; and
3. Startup Test Program implemented before initial fuel load;

(n) Special Nuclear Material Control and Accounting Program implemented before initial receipt of special nuclear material; and

(o) Special Nuclear Material Physical Protection Program implemented before initial receipt of special nuclear material on site.

(11) Operational Program Implementation Schedule

No later than 12 months after issuance of the COL, SNC shall submit to the Director of NRO, or the Director's designee, a schedule for implementation of the operational programs listed in FSAR Table 13.4-201, including the associated estimated date for initial loading of fuel. The schedule shall be updated every 6 months until 12 months before scheduled fuel loading, and every month thereafter until all the operational programs listed in FSAR Table 13.4-201 have been fully implemented.

(12) Site- and Unit-specific Conditions

- (a) SNC shall either remove and replace, or shall improve, the soils directly above the blue bluff marl for soils under or adjacent to Seismic Category I structures, to eliminate any liquefaction potential.
- (b) Before commencing installation of individual piping segments and connected components in their final locations, SNC shall complete the as-designed pipe rupture hazards analysis for compartments (rooms) containing those segments in accordance with the criteria outlined in the AP1000 DCD, Rev. 19, Sections 3.6.1.3.2 and 3.6.2.5, and shall inform the Director of NRO, or the Director's designee, in writing, upon the completion of this analysis and the availability of the as-designed pipe rupture hazards analysis reports.
- (c) Before commencing installation of individual piping segments, identified in AP1000 DCD, Rev. 19, Section 3.9.8.7, and connected components in their final locations in the facility, SNC shall complete the analysis of the as-designed individual piping segments and shall inform the Director of NRO, or the Director's

designee, in writing, upon the completion of these analyses and the availability of the design reports for the selected piping packages.

- (d) No later than 180 days before initial fuel load, SNC shall submit to the Director of NRO, or the Director's designee, in writing, a fully developed set of plant-specific emergency action levels (EALs) for VEGP Unit 4 in accordance with Nuclear Energy Institute (NEI) 07-01, "Methodology for Development of Emergency Action Levels Advanced Passive Light Water Reactors," Revision 0, with no deviations. The EALs shall have been discussed and agreed upon with State and local officials.
- (e) SNC shall not revise or modify the provisions of Sections 5.3, 5.4, 5.6, 5.9, and 5.10 of the Special Nuclear Material (SNM) Physical Protection Program until the requirements of 10 CFR 73.55 are implemented.
- (f) No later than 12 months after issuance of the COL, SNC shall submit to the Director of NRO, or the Director's designee, a schedule for implementation of the following license conditions. The schedule shall be updated every 6 months until 12 months before scheduled fuel loading, and every month thereafter until each license condition has been fully implemented. The schedule shall identify the completion of or implementation of the following:
 - 1. The construction and inspection procedures for steel concrete composite (SC) construction activities for seismic Category I nuclear island modules (including shield building SC modules) described in AP1000 DCD Rev. 19, Section 3.8.4.8;
 - 2. The spent fuel rack Metamic Coupon monitoring program (before initial fuel load);
 - 3. Implementation of the flow accelerated corrosion (FAC) program including construction phase activities (before initial fuel load);
 - 4. A turbine maintenance and inspection program, which must be consistent with the maintenance and inspection program plan activities and inspection intervals identified in FSAR Section 10.2.3.6 (before initial fuel load);
 - 5. The availability of documented instrumentation uncertainties to calculate a power calorimetric uncertainty (before initial fuel load);
 - 6. The availability of administrative controls to implement maintenance and contingency activities related to the

power calorimetric uncertainty instrumentation (before initial fuel load);

7. The site-specific severe accident management guidelines (before startup testing);
8. The operational and programmatic elements of the mitigative strategies for responding to circumstances associated with loss of large areas of the plant due to explosions or fire developed in accordance with 10 CFR 50.54(hh)(2) (before initial fuel load); and
9. The pre-operational and startup procedures (including the site-specific startup administration manual) identified in FSAR Section 14.2.3 (before initiating the initial test program).

(g) Before initial fuel load, SNC shall:

1. Update the seismic interaction analysis in AP1000 DCD, Rev. 19, Section 3.7.3.5 to reflect as-built information, which must be based on as-procured data, as well as the as-constructed condition;
2. Reconcile the seismic analyses described in Section 3.7.2 of the AP1000 DCD, Rev. 19, to account for detailed design changes, including, but not limited to, those due to as-procured or as-built changes in component mass, center of gravity, and support configuration based on as-procured equipment information;
3. Calculate the instrumentation uncertainties of the actual plant operating instrumentation to confirm that either the design limit departure from nucleate boiling ratio (DNBR) values remain valid or that the safety analysis minimum DNBR bounds the new design limit DNBR values plus DNBR penalties;
4. Update the pressure temperature (P-T) limits using the pressure temperature limits report (PTLR) methodologies approved in AP1000 DCD, Rev. 19, using the plant-specific material properties or confirm that the reactor vessel material properties meet the specifications of and use the Westinghouse generic PTLR curves;
5. Verify that plant-specific belt line material properties are consistent with the properties given in AP1000 DCD Rev. 19, Section 5.3.3.1 and Tables 5.3-1 and 5.3-3. The verification must include a pressurized thermal shock (PTS) evaluation based on as-procured reactor vessel material data and the projected neutron fluence for the

plant design objective. Submit this PTS evaluation report to the Director of NRO, or the Director's designee, in writing, at least 18 months before initial fuel load;

6. Review differences between the as-built plant and the design used as the basis for the AP1000 seismic margin analysis. SNC shall perform a verification walkdown to identify differences between the as-built plant and the design. SNC shall evaluate any differences and must modify the seismic margin analysis as necessary to account for the plant-specific design and any design changes or departures from the certified design. SNC shall compare the as-built structures, systems, and components (SSC) high confidence, low probability of failures (HCLPFs) with those assumed in the AP1000 seismic margin evaluation, before initial fuel load. SNC shall evaluate deviations from the HCLPF values or assumptions in the seismic margin evaluation due to the as-built configuration and final analysis to determine if vulnerabilities have been introduced;
7. Review differences between the as-built plant and the design used as the basis for the AP1000 probabilistic risk assessment (PRA) and the AP1000 DCD, Rev. 19, Table 19.59-18. SNC shall evaluate the plant-specific PRA-based insight differences and shall modify the plant-specific PRA model as necessary to account for the plant-specific design and any design changes or departure from the PRA certified in Rev. 19 of the AP1000 DCD;
8. Review differences between the as-built plant and the design used as the basis for the AP1000 internal fire and internal flood analysis. SNC shall evaluate the plant-specific internal fire and internal flood analyses and shall modify the analyses as necessary to account for the plant-specific design and any design changes or departures from the design certified in Rev. 19 of the AP1000 DCD; and
9. Perform a thermal lag assessment of the as-built equipment listed in Tables 6b and 6c in Attachment A of APP-GW-GLR-069, "Equipment Survivability Assessment," to provide additional assurance that this equipment can perform its severe accident functions during environmental conditions resulting from hydrogen burns associated with severe accidents. SNC shall perform this assessment for equipment used for severe accident mitigation that has not been tested at severe accident conditions. SNC shall assess the ability of the as-built equipment to perform during accident hydrogen burns using the environment enveloping method or the test based thermal analysis

method described in Electric Power Research Institute (EPRI) NP-4354, "Large Scale Hydrogen Burn Equipment Experiments."

10. Implement a surveillance program for explosively actuated valves (squib valves) that includes the following provisions in addition to the requirements specified in the edition of the *ASME Code for Operation and Maintenance of Nuclear Power Plants* (OM Code) as incorporated by reference in 10 CFR 50.55a.

- a. Preservice Testing

All explosively actuated valves shall be preservice tested by verifying the operational readiness of the actuation logic and associated electrical circuits for each explosively actuated valve with its pyrotechnic charge removed from the valve. This must include confirmation that sufficient electrical parameters (voltage, current, resistance) are available at the explosively actuated valve from each circuit that is relied upon to actuate the valve. In addition, a sample of at least 20% of the pyrotechnic charges in all explosively actuated valves shall be tested in the valve or a qualified test fixture to confirm the capability of each sampled pyrotechnic charge to provide the necessary motive force to operate the valve to perform its intended function without damage to the valve body or connected piping. The sampling must select at least one explosively actuated valve from each redundant safety train. Corrective action shall be taken to resolve any deficiencies identified in the operational readiness of the actuation logic or associated electrical circuits, or the capability of a pyrotechnic charge. If a charge fails to fire or its capability is not confirmed, all charges with the same batch number shall be removed, discarded, and replaced with charges from a different batch number that has demonstrated successful 20% sampling of the charges.

- b. Operational Surveillance

Explosively actuated valves shall be subject to the following surveillance activities after commencing plant operation:

- i. At least once every 2 years, each explosively actuated valve shall undergo visual external examination and remote

internal examination (including evaluation and removal of fluids or contaminants that may interfere with operation of the valve) to verify the operational readiness of the valve and its actuator. This examination shall also verify the appropriate position of the internal actuating mechanism and proper operation of remote position indicators. Corrective action shall be taken to resolve any deficiencies identified during the examination with post-maintenance testing conducted that satisfies the preservice testing requirements.

- ii. At least once every 10 years, each explosively actuated valve shall be disassembled for internal examination of the valve and actuator to verify the operational readiness of the valve assembly and the integrity of individual components and to remove any foreign material, fluid, or corrosion. The examination schedule shall provide for both of the two valve designs used for explosively actuated valves at the facility to be included among the explosively actuated valves to be disassembled and examined every 2 years. Corrective action shall be taken to resolve any deficiencies identified during the examination with post-maintenance testing conducted that satisfies the preservice testing requirements.
- iii. For explosively actuated valves selected for test sampling every 2 years in accordance with the ASME OM Code, the operational readiness of the actuation logic and associated electrical circuits shall be verified for each sampled explosively actuated valve following removal of its charge. This must include confirmation that sufficient electrical parameters (voltage, current, resistance) are available for each valve actuation circuit. Corrective action shall be taken to resolve any deficiencies identified in the actuation logic or associated electrical circuits.
- iv. For explosively actuated valves selected for test sampling every 2 years in accordance with the ASME OM Code, the sampling

must select at least one explosively actuated valve from each redundant safety train. Each sampled pyrotechnic charge shall be tested in the valve or a qualified test fixture to confirm the capability of the charge to provide the necessary motive force to operate the valve to perform its intended function without damage to the valve body or connected piping. Corrective action shall be taken to resolve any deficiencies identified in the capability of a pyrotechnic charge in accordance with the preservice testing requirements.

This license condition shall expire upon (1) incorporation of the above surveillance provisions for explosively actuated valves into the facility's inservice testing program, or (2) incorporation of inservice testing requirements for explosively actuated valves in new reactors (i.e., plants receiving a construction permit, or combined license for construction and operation, after January 1, 2000) to be specified in a future edition of the ASME OM Code as incorporated by reference in 10 CFR 50.55a, including any conditions imposed by the NRC, into the facility's inservice testing program.

- E. The licensees shall have and maintain financial protection of such type and in such amounts as the Commission shall require in accordance with Section 170 of the Atomic Energy Act of 1954, as amended, to cover public liability claims.
- F. Exemptions
 - (1) The following exemption from any part of the referenced design certification rule meets the requirements of 10 CFR 52.7 and Section VIII.A.4, VIII.B.4, or VIII.C.4 of Appendix D to 10 CFR Part 52, is authorized by law, will not present an undue risk to the public health or safety, and is consistent with the common defense and security. Special circumstances are present in that the application of the regulation in this particular circumstance is not necessary to achieve the underlying purpose of the rule (10 CFR 50.12(a)(2)(ii)) as described in the application and the staff SER dated August 5, 2011.
 - (a) The licensees are exempt from the requirement of 10 CFR Part 52, Appendix D, Section IV.A.2.a to include a plant-specific DCD containing the same type of information and using the same organization and numbering as the generic DCD for the AP1000 certified design. This exemption is specific to the organization and numbering scheme in the FSAR and is related to departure number VEGP DEP 1-1.

- (2) The following exemptions from regulations were granted in the rulemaking for the design certification rule that is referenced in the application. In accordance with 10 CFR Part 52, Appendix D, Section V, Applicable Regulations, Subsection B, and pursuant to 10 CFR 52.63(a)(5), the licensees are exempt from portions of the following regulations:
- (a) Paragraph (f)(2)(iv) of 10 CFR 50.34—Plant Safety Parameter Display Console;
 - (b) Paragraph (c)(1) of 10 CFR 50.62—Auxiliary (or emergency) feedwater system; and
 - (c) Appendix A to 10 CFR Part 50, GDC 17—Second offsite power supply circuit.
- (3) For the reasons set forth below, the following specific exemptions, which are outside the scope of the design certification rule referenced in the application, are granted:
- (a) The licensees are exempt from the requirements of 10 CFR 70.22(b), 10 CFR 70.32(c), 10 CFR 74.31, 10 CFR 74.41, and 10 CFR 74.51 because the licensees meet the requirements of 10 CFR 70.17 and 74.7 as follows: The exemption is authorized by law, will not present an undue risk to the public health or safety, and is consistent with the common defense and security. Additionally, special circumstances are present in that the application of the regulations in this particular circumstance is not necessary to achieve the underlying purpose of the rule (10 CFR 50.12(a)(2)(ii)) as described in the FSAR and the staff SER dated August 5, 2011.
 - (b) The licensees are exempt from the requirements of 10 CFR 52.93(a)(1) as it relates to the exemption granted in Section 2.F.(1)(a) of this license because the exemption meets the requirements of 10 CFR 52.7, because the exemption is authorized by law, will not present an undue risk to the public health or safety, and is consistent with the common defense and security. Additionally, special circumstances are present in that the application of the regulation in this particular circumstance is not necessary to achieve the underlying purpose of the rule (10 CFR 50.12(a)(2)(ii)) as described in the staff SER dated August 5, 2011.

G. Variances

Having applied the technically relevant criteria applicable to the application for the Early Site Permit No. ESP-004, to the variances requested in the application, as described in NUREG-1923, the staff SER dated July 2009, the following variances from the early site permit (ESP) are granted:

- (1) A variance (VEGP VAR 1.6-1) from Section 1.6 of the VEGP ESP site safety analysis report (SSAR) as it references Revision 15 of the AP1000 DCD instead of Revision 19 of the AP1000 DCD, which is incorporated by reference in the FSAR;
 - (2) The variance (VEGP VAR 1.6-2) from Section 3.8.5, Foundations, of the VEGP ESP SSAR, which references Revision 15 of the AP1000 DCD, to reference Revision 19 of the AP1000 DCD, which is incorporated by reference in the FSAR;
 - (3) The variance (VEGP VAR 1.6-3) from Chapter 15, Accident Analysis, of the VEGP ESP SSAR which references Revision 15 of the AP1000 DCD, to reference Revision 19 of the AP1000 DCD, which is incorporated by reference in the FSAR;
 - (4) The variance (VEGP VAR 1.2-1) from the site layout information in Figures 1-4, 1-5, 13.3-2, and Part 5 Figure ii, of the VEGP ESP SSAR, which is superseded by the corresponding information in FSAR Section 1.1, Figure 1.1-202;
 - (5) The variance (VEGP VAR 2.2-1) from the information related to onsite chemical hazards in Section 2.2.3.2.3 and Table 2.2-6 of the VEGP ESP SSAR, which is superseded by the corresponding information contained in FSAR Sections 2.2 and 6.4; and
 - (6) The variance (VEGP VAR 2.3-1) from the information related to design-basis temperature characteristics in Section 2.3.1.5 and Table 1-1 of the VEGP ESP SSAR, which is superseded by the corresponding information contained in FSAR Section 2.3.1.5 and Table 2.0-201, which conforms to AP1000 DCD, Revision 19.
- H. Following SNC's ITAAC closure notifications under paragraph (c)(1) of 10 CFR 52.99 until the Commission makes the finding under 10 CFR 52.103(g), SNC shall notify the NRC, in a timely manner, of new information that materially alters the bases for determining that either inspections, tests, or analyses were performed as required, or that acceptance criteria are met. The notification must contain sufficient information to demonstrate that, notwithstanding the new information, the prescribed inspections, tests, or analyses have been performed as required, and the prescribed acceptance criteria are met.
- I. SNC shall maintain the guidance and strategies developed in accordance with 10 CFR 50.54(hh)(2).

- J. This license is effective as of February 10, 2012, and shall expire at midnight on the date 40 years from the date that the Commission finds that the acceptance criteria in the combined license are met in accordance with 10 CFR 52.103(g).

FOR THE NUCLEAR REGULATORY
COMMISSION

/RA/

Michael R. Johnson, Director
Office of New Reactors

Appendices:

Appendix A – Technical Specifications

Appendix B – Environmental Protection Plan

Appendix C – Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC)

LIMITED WORK AUTHORIZATION
VOGTLE ELECTRIC GENERATING PLANT UNIT 3
SOUTHERN NUCLEAR OPERATING COMPANY, INC.
GEORGIA POWER COMPANY
OGLETHORPE POWER CORPORATION
MUNICIPAL ELECTRIC AUTHORITY OF GEORGIA
CITY OF DALTON, GEORGIA
DOCKET NO. 52-025

Limited Work Authorization No. LWA-001

1. The Nuclear Regulatory Commission (the NRC or the Commission) has found that:
 - A. The application for a limited work authorization (LWA) for Vogtle Electric Generating Plant (VEGP) Unit 3 filed by Southern Nuclear Operating Company, Inc. (SNC) acting on behalf of Georgia Power Company, Oglethorpe Power Corporation, Municipal Electric Authority of Georgia, and the City of Dalton, Georgia, an incorporated municipality in the state of Georgia acting by and through its Board of Water, Light and Sinking Fund Commissioners (City of Dalton), herein referred to as "the VEGP owners," meets the applicable standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's regulations;
 - B. There is reasonable assurance that the activities authorized under Section 2.B of this LWA will be performed in conformity with the application, as amended, the provisions of the Act, and the Commission regulations set forth in 10 CFR Chapter I;
 - C. There is reasonable assurance that the activities authorized by this LWA can be conducted without endangering the health and safety of the public and will not be inimical to the common defense and security;
 - D. There are no unresolved safety issues related to the activities identified in Section 2.B of this LWA;

- E. SNC¹ is technically qualified to engage in the activities authorized by this LWA in accordance with the Commission regulations set forth in 10 CFR Chapter I;
 - F. After weighing the environmental, economic, technical, and other benefits of the activities identified in Section 2.B of this LWA against environmental and other costs and considering reasonable available alternatives, the issuance of this LWA subject to the conditions for protection of the environment set forth herein is in accordance with Subpart A of 10 CFR Part 51 and all applicable requirements have been satisfied; and
 - G. The site redress plan incorporated into this LWA will adequately redress the activities performed under the limited work authorization, if construction is terminated by the holders, the underlying application is withdrawn by the applicant or denied by the NRC, or the limited work authorization is revoked by the NRC.
2. Based on the foregoing findings regarding this limited work authorization, LWA No. LWA-001 is hereby issued to SNC, Georgia Power Company, Oglethorpe Power Corporation, Municipal Electric Authority of Georgia, and the City of Dalton, Georgia (the LWA holders) to read as follows:
- A. This LWA applies to the VEGP Unit 3, a light-water nuclear reactor and associated equipment (the facility), owned by the VEGP Owners. The facility would be located adjacent to existing VEGP Units 1 and 2 on a 3,169-acre coastal plain bluff on the southwest side of the Savannah River in eastern Burke County, GA, approximately 15 miles east-northeast of Waynesboro, GA, and 26 miles southeast of Augusta, GA, and is described in the final safety analysis report (FSAR), as supplemented and amended.
 - B. Subject to the conditions and requirements incorporated herein, the Commission hereby authorizes SNC, pursuant to Sections 103 and 185 of the Act and 10 CFR 50.10(e)(2), to perform the following activities under this LWA: installation of reinforcing steel, sumps and drain lines and other embedded items in the nuclear island (NI) foundation base slab as identified in AP1000 Design Control Document (DCD), Rev. 19, Section 3.8 and placement of concrete for the NI foundation base slab as described in AP1000 DCD, Rev. 19, Section 3.8.
 - C. The LWA is subject to and the LWA holders shall comply with all applicable provisions of the Atomic Energy Act of 1954, as amended, and the rules, regulations, and orders of the Commission, including the conditions set forth in 10 CFR Chapter I, now or hereafter in effect.
 - D. The LWA is subject to and SNC shall comply with the conditions specified and incorporated below:
 - 1) The Site Redress Plan and Environmental Protection Plan in Appendices A and B, respectively, of this LWA are hereby incorporated into this LWA.

¹ SNC is authorized by the VEGP owners to exercise responsibility and control over the physical construction, operation, and maintenance of the facility.

- 2) The Site Redress Plan shall be implemented by the LWA holders if construction is terminated by the holders, the underlying application is withdrawn by the applicant or denied by the NRC, or the LWA is revoked by the NRC.
- E. Any activities performed pursuant to this LWA and as identified in Section 2.B of this LWA, are subject to the conditions for the protection of the environment set forth in the EPP attached as Appendix B to this LWA.
- F. The holders of this LWA are subject to the requirements of 10 CFR Part 21, "Reporting of Defects and Noncompliance," and, with respect to activities authorized under this LWA, are subject to the requirements of 10 CFR 50.55(e), as of the date of issuance of this LWA.
- G. This LWA is effective as of its date of issuance and shall remain in effect until termination by the holders, revoked by the NRC, or effectiveness of a final agency decision denying the combined license application associated with this LWA.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Michael R. Johnson, Director
Office of New Reactors

February 10, 2012
Date of Issuance

Appendices:

Appendix A – Site Redress Plan

Appendix B – Environmental Protection Plan (Nonradiological)

APPENDIX A

VOGTLE ELECTRIC GENERATING PLANT UNIT 3

SITE REDRESS PLAN

1.1 Introduction

A Limited Work Authorization (LWA) allows the holders to perform certain activities set forth in the LWA prior to receiving a combined license (COL) (i.e., permission to initiate construction). However, in order to perform these activities, the LWA application must include a plan for site redress that provides for restoration if construction is terminated by the holders, the underlying application is withdrawn by the applicant or denied by the NRC, or the LWA is revoked by the NRC.

Part 6 of the Southern Nuclear Operating Company (SNC) COL application describes activities that may occur after the U.S. Nuclear Regulatory Commission (NRC) issues an LWA to SNC for the Vogtle Electric Generating Plant (VEGP) site, but before the NRC issues a COL. These LWA activities are subject to regulation 10 CFR 50.10(d) (effective November 8, 2007). In accordance with this regulation, Part 6 also describes the SNC plan for redress of LWA activities should SNC terminate construction of VEGP Unit 3. This site Redress Plan has been developed to provide reasonable assurance that redress carried out under the plan would achieve an environmentally stable and aesthetically acceptable site.

1.2 Site Description

The site selected for two new nuclear units, designated VEGP Units 3 and 4, is the existing 3,169-acre VEGP site in Burke County, in east-central Georgia, on the Savannah River. The site is approximately 100 miles northwest of Savannah, Georgia, and 26 miles southeast of Augusta, Georgia, directly across the river from the U.S. Department of Energy's Savannah River Site (Barnwell County, South Carolina). SNC proposes to construct VEGP Units 3 and 4 adjacent to, and west of, existing VEGP Units 1 and 2.

1.3 Plant Ownership

Currently the land selected for new VEGP Units 3 and 4 is jointly owned by Georgia Power Company (Georgia Power or GPC), Oglethorpe Power Corporation, Municipal Electric Authority of Georgia and the City of Dalton, an incorporated municipality in the State of Georgia. SNC is the exclusive operating licensee of the existing VEGP nuclear units, and has been authorized by GPC, acting as agent for the VEGP owners, to apply for an LWA for the VEGP site. SNC has no ownership interest in the existing or proposed units at VEGP.

GPC and SNC are subsidiaries of Southern Company, Inc., and SNC is the licensed operator for all Southern Company nuclear generating facilities. SNC's business purpose is management and operation of nuclear generating facilities owned by Southern Company subsidiaries. The COL Application, Part 1, provides additional information about Southern Company, GPC, VEGP owners and SNC.

Prior to any site preparation activities, the VEGP owners would grant sufficient rights to SNC for SNC to perform the activities described in this plan.

1.4 Limited Work Authorization Activities

The activities that SNC is authorized to perform under this LWA are as follows:

- Installation of reinforcing steel, sumps and drain lines, and other embedded items in the nuclear island (NI) foundation base slab.
- Placement of concrete for the NI foundation base slab.

LWA activities would take place within the area of excavation and would result in construction of structures located below grade. The structures would be composed primarily of materials that are inert (e.g., soil, rock, gravel, concrete) or relatively inert (e.g., waterproof membrane). Degradable materials intended for temporary use, such as some concrete formwork, would be removed prior to backfill. In addition to the LWA requested activities discussed above, the following ancillary activities would be performed to support the identified LWA activities:

- Installation of construction laydown areas to be used to store bulk materials and to fabricate portions of the requested LWA items, such as assembling reinforcing steel sections to be placed in the base slab formwork prior to the NI concrete pours.
- Construction of two concrete batch plants.
- Transportation of material to the site.

1.5 Site Redress Plan

1.5.1 Site Redress Plan Objectives and Considerations

The purpose of site redress is to reverse, mitigate, or stabilize environmental impacts incurred during LWA activities. The objective of this site redress plan is to ensure that, in the event the VEGP Units 3 and 4 site is not fully developed to provide new nuclear power generation, it would be returned to an unattended, environmentally stable and aesthetically acceptable condition.

Site redress activities will be implemented commensurate with the degree of site modification resulting from LWA activities. Redress activities will reflect applicable land use and/or zoning requirements of local, state and federal agencies, and possible future use scenarios. In scoping the redress activities, SNC will consider certain variables including, but not limited to:

- Future ownership of the site.
- Potential environmental contamination that either pre-dates, or is a result of, site preparation activities.
- Potential liabilities associated with any facility or structure remaining following completion of the redress activities.

In planning for site redress, two general categories of options would be considered:

- Topographic approaches that accomplish the objective and preserve the potential of the site for future industrial use.
- Completion or addition of site development features that enhance the value of the site for potential future industrial use.

Decisions by SNC, the VEGP owners, and state or local land use authorities and industrial development authorities on potential future uses would inform specific redress activities. Redress activities, if necessary, would begin when the LWA activities are terminated by the holders, the underlying application is withdrawn by the applicant or denied by the NRC, or the LWA is revoked by the NRC. Redress activities would include actions to terminate or transfer local and state permits, and designate structures or improvements that would remain and those that must be removed. A detailed scope and schedule will be prepared prior to initiating redress activities. Redress activities will comply with applicable environmental requirements and necessary permits will be obtained prior to beginning redress activities. If, prior to the commencement of redress activities, acceptable uses consistent with the current state of the site's development were identified, SNC would tailor the site redress plan as much as possible to support the alternative uses. In the event that ownership of structures developed for VEGP Units 3 and 4 were transferred to the existing VEGP Units 1 and 2, the new structures would be included in the existing units decommissioning plan.

Between termination of the LWA activities or the decision to discontinue plant construction, and commencement of site redress activities, water quality, air quality, stormwater runoff, solid waste, and the protection of any critical ecological elements will be maintained in compliance with approved permits and regulatory requirements.

1.5.2 Description of Site Redress

SNC LWA activities would take place within the area of preconstruction excavation, below grade. SNC's preferred method of redress for these LWA structures would be burial in place. Georgia regulation 391-3-4-.2 provides for permits for solid waste disposal. Regulation 391-3-4-06 provides for a permit by rule for disposal of inert waste, defined to include earth and earth-like products, concrete, cured asphalt, rock and bricks. SNC believes that it would make better economic, environmental, and safety sense to bury the structures in place rather than demolishing them and removing debris for disposal elsewhere. Removal would simply use up available landfill space elsewhere.

Prior to initiating site redress activities, SNC would discuss with the Georgia Department of Natural Resources (GDNR) the acceptability of burial of the LWA structures in place as a landfill under Georgia solid waste management rules. SNC might need to obtain a variance to cover material that does not fit the State definition of "inert," such as steel and waterproof membrane. However, SNC believes that a variance would be reasonable given that the material would not be likely to produce leachate of environmental concern.

Site redress would ensure that no significant amounts of degradable materials, such as temporary construction formwork, would remain below grade but would be removed and disposed of properly at a permitted landfill. Buried structures (e.g., foundations and utilities) would be evaluated and exhumed if required. Structures approaching grade level would be demolished as necessary to allow a minimum of two feet of final cover.

If the GDNR did not approve in-place disposal, SNC would demolish and remove LWA structures in accordance with Georgia requirements. Any area that became contaminated (non-radiological) as a result of LWA activities or LWA redress activities would be remediated in compliance with Georgia law and regulations. Backfill placement would be in accordance with good engineering practices using material from the original excavation to the extent still available.

Final site redress would include regrading the area to conform to the surrounding land surface and to mitigate erosion from stormwater runoff. The disturbed area would be revegetated to ensure stabilization and an aesthetically pleasing landscape. SNC would provide all required notifications to the GDNR. If GDNR had approved closure as a landfill, SNC would ensure that appropriate deed notices were filed.

1.5.3 Controls to Mitigate Impacts During Redress Activities

Methods used to ensure environmental protection and regulatory compliance during site redress would include best management practices for noise control, traffic control, sediment and erosion control, air quality control, control of potential pollutant sources, stockpile management, and spill prevention, control, and response.

1.5.3.1 Noise Control

During redress activities, ambient noise levels would be similar to those during site preparation activities. Noise would be controlled to maintain compliance with all federal regulations. Neither Georgia nor Burke County has noise ordinances. Procedures and a hearing conservation program would be developed for redress activities.

The heavy equipment needed for demolition, clearing, excavating, grading, trash disposal, and land filling operations would be the major source of noise pollution. Standard noise dampening devices on equipment, together with the location of the primary work site below grade, are expected to be sufficient to keep off-site noise levels at acceptable levels or lower. In addition, major redress activities would be constrained to weekdays and other activities would be limited on weekends.

1.5.3.2 Traffic Control

The highway access to VEGP would experience increased traffic during redress activities, similar to traffic increases during site preparation activities. SNC has assumed that redress activities would involve 250 workers or less. Based on the analysis of construction impacts, River Road has the capacity for an additional 1,200 cars per hour. Workers would access the site via the construction access road.

Traffic control on and off site would adhere to the applicable local, state, and federal requirements.

1.5.3.3 Erosion and Sediment Controls

Most of the area of LWA activities was cleared, paved, or graveled during site preparation activities. The runoff from the footprint would be controlled by a stormwater management system. During redress activities, disturbances to the existing ground surface could potentially increase the runoff sediment load. However, the location of LWA activities within the excavation area will minimize the risk of runoff offsite. Measures would be taken consistent with the Georgia Erosion and Sediment Control Act and implementing regulations to avoid concentrated flows with a high potential to transport sediment. Visual inspections of erosion controls would monitor the effectiveness of the controls and aid in determining if other mitigation measures are necessary. Where necessary, special erosion control measures would be implemented to further minimize impacts to the Savannah River, onsite streams or ponds, and existing units' operations. Site redress activities would include the use of appropriate stabilization methods to

mitigate the long-term erosion of sediment into the river and would be in compliance with an approved Erosion and Sedimentation Control Plan, which is required by the Georgia Department of Natural Resources and the federal Clean Water Act.

Sediment and erosion control would conform to the following best management practices:

- If periodic inspections or other information indicate that a control measure is ineffective, the control measure would be modified or replaced as necessary.
- In the event that sediment escapes the site during redress activities, off-site accumulations of sediment would be removed to minimize off-site impacts, to the extent practical.
- Sediment would be removed from sediment traps or sedimentation ponds as needed.
- Good housekeeping practices would be implemented to prevent litter, demolition debris, and chemicals from becoming pollutant sources for stormwater discharges.
- Erosion and sediment runoff would be controlled through the use of accepted structural and stabilization practices.
- Where practical, disturbed soil areas would be reseeded with maintenance seed (if activities are temporary) or permanent seed mix (for permanent or final cover) as soon as possible after redress activities are completed.
- Where practical, excelsior blankets would be mulched or installed, and slopes greater than 3H:1V would be reseeded. Mulch would be applied as soon as possible after seeding to reduce runoff and promote vegetation.
- Sidehill slopes would be furrow-contoured as practical. Otherwise, the final grading would be performed in a manner that would result in tracks and depressions contoured across the slope instead of down.
- The time that bare soil is exposed before being stabilized would be minimized.
- The disturbance to existing vegetation would be minimized.
- No solid materials, including demolition materials, would be discharged to waters of the United States, unless authorized under an approved permit.

1.5.3.4 Air Quality Controls

Dust, smoke, and engine exhaust are sources of air pollution. During redress activities, controls would be imposed to mitigate air emissions from such sources. The most traveled roads would be paved or sprinkled periodically if not paved, to reduce dust. Bare areas would be seeded to provide ground cover. Air pollution control regulations related to open burning or the operation of fuel-burning equipment would be followed. Permits and operating certificates would be secured where required. Fuel-burning equipment would be maintained in good mechanical order to reduce excessive emissions. Water sprinkling of laydown, storage, and parking areas, unpaved roads, and other areas of the site would suppress dust.

1.5.3.5 Potential Pollutant Sources (Effluents, Wastes, Spills, and Material Handling)

During redress activities, there would be many possible pollutant sources. Best management practices would be followed to ensure protection of soils, groundwater and surface water from accidental spills or releases of pollutants.

1.5.4 Potential Contamination

Any spills during site preparation or redress activities would be remediated in compliance with the requirements of this plan. The area would be returned to its baseline state post-redress.

1.5.5 Potential Liabilities

If ownership of the site is transferred, neither SNC nor the VEGP owners would have further liability with regard to site redress.

1.6 Financial Responsibility

It is the financial responsibility of the VEGP owners to provide the funding to redress the new plant footprint on the VEGP site in the event that site preparation activities are performed and construction is subsequently terminated by the holders, the underlying application is withdrawn by the applicant or denied by the NRC, or the LWA is revoked by the NRC.

1.7 NRC Notification Upon Completion

SNC would notify the NRC upon completion of activities addressed by this Site Redress Plan. The site would be made available for inspection, and any documentation that the NRC may require would be provided to confirm the satisfactory completion of the redress activities.

APPENDIX B

VOGTLE ELECTRIC GENERATING PLANT UNIT 3

ENVIRONMENTAL PROTECTION PLAN

(NONRADIOLOGICAL)

1.0 Objectives of the Environmental Protection Plan

The Environmental Protection Plan (EPP) objectives are to ensure compliance with Biological Opinions issued pursuant to the Endangered Species Act of 1973, as amended (ESA), and to ensure that the U.S. Nuclear Regulatory Commission (NRC) is kept informed of other environmental matters. The EPP is intended to be consistent with Federal, State, and local requirements for environmental protection.

2.0 Environmental Protection Issues

In the Final Supplemental Environmental Impact Statement (FSEIS) dated March 2011, the staff considered the environmental impacts associated with the construction and operation of Vogtle Electric Generating Plant Unit Nos. 3 and 4. This EPP applies to the LWA holders' actions affecting the protected environmental resources evaluated in the FSEIS and the LWA holders' actions that may affect any newly discovered protected environmental resources.

2.1 Aquatic Resources Issues

Federal agencies other than the U.S. Nuclear Regulatory Commission (NRC), such as the U.S. Environmental Protection Agency and the U.S. Army Corps of Engineers, have jurisdiction to regulate aquatic resources under the Federal Water Pollution Control Act (Clean Water Act or CWA) and the Rivers and Harbors Appropriation Act of 1899 (RHA). Certain water quality environmental considerations identified in the FSEIS, including effluent limitations, monitoring requirements, and mitigation measures, are regulated under the LWA holders' CWA permits, such as National Pollutant Discharge Elimination System and Section 404 permits, and RHA Section 10 permit. Nothing within this EPP shall be construed to place additional requirements on the regulation of aquatic resources except the imposition of the requirements in a Biological Opinion under the ESA (see Section 2.3).

2.2 Terrestrial Resources Issues

Several statutes govern the regulation of terrestrial resources. For example, the U.S. Fish and Wildlife Service (FWS) regulates matters involving migratory birds and their nests in accordance with the Migratory Bird Treaty Act. Activities affecting migratory birds or their nests may require permits under the Migratory Bird Treaty Act. The FWS also regulates matters involving the protection and taking of bald and golden eagles in accordance with the Bald and Golden Eagle Protection Act.

2.3 Endangered Species Act of 1973

The NRC may be required to protect some aquatic resources and terrestrial resources in accordance with the ESA. If a Biological Opinion is issued to the NRC in accordance with ESA Section 7 prior to the issuance of the combined license, the LWA holders shall comply with the terms and conditions set forth in the Incidental Take Statement of the Biological Opinion. If any Federally listed species or critical habitat occurs in an area affected by construction or operation of the plant that was not previously identified as occurring in such areas, including species and critical habitat that were not previously Federally listed, the LWA holders shall inform the NRC within four hours of discovery. The time of discovery is identified as the specific time when a decision is made to notify another agency or to issue a press release. Similarly, the LWA holders shall inform the NRC within four hours of discovery of any take, as defined in the ESA, of a Federally listed species or destruction or adverse modification of critical habitat. The four-hour discovery notifications shall be made to the NRC Operations Center via the Emergency Notification System. The LWA holders shall provide any necessary information to the NRC if the NRC initiates or reinitiates consultation under the ESA.

Unusual Event - The LWA holders shall inform the NRC of any onsite mortality, injury, or unusual occurrence of any species protected by the ESA within four hours of discovery, followed by a written report in accordance with Section 4.1. The time of discovery is identified as the specific time when a decision is made to notify another agency or to issue a press release. Such incidents shall be reported regardless of the LWA holders' assessment of causal relation to plant construction or operation.

3.0 Consistency Requirements

The LWA holders shall notify the NRC of proposed changes to permits or certifications concerning aquatic or terrestrial resources by providing the NRC with a copy of the proposed change(s) at the same time it is submitted to the permitting agency. The LWA holders shall provide the NRC with a copy of the application for renewal of permits or certifications at the same time the application is submitted to the permitting agency.

Changes to or renewals of such permits or certifications shall be reported to the NRC within 30 days following the later of the date the change or renewal is approved or the date the change becomes effective. If a permit or certification, in part or in its entirety, is appealed and stayed, the NRC shall be notified within 30 days following the date the stay is granted.

4.0 Administrative Procedures

4.1 Plant Reporting Requirements: Non-routine Reports

A written report shall be submitted to the NRC within 30 days of occurrence of any unusual event described in Section 2.3 of this EPP. The report shall: (a) describe, analyze, and evaluate the event, including extent and magnitude of the impact and plant operating characteristics at the time of the event, (b) describe the probable cause of the event, (c) indicate the action taken to correct the reported event, (d) indicate the

corrective action taken to preclude repetition of the event and to prevent similar occurrences involving similar components or systems, and (e) indicate the agencies notified and their preliminary responses.

4.2 Review and Audit

The LWA holders shall provide for review and audit of compliance with Section 2.3 of this EPP. The audits shall be conducted independently of the individual or groups responsible for performing the specific activity. A description of the organizational structure utilized to achieve the independent review and audit function and results of the audit activities shall be maintained and made available for inspection.

4.3 Records Retention

Records required by this EPP shall be made and retained in a manner convenient for review and inspection. These records shall be made available to the NRC on request. The records, data, and logs relating to this EPP shall be retained for five years or, where applicable, in accordance with the requirements of other agencies.

4.4 Changes in Environmental Protection Plan

A request for a change in the EPP shall include an assessment of the environmental impact of the proposed change and a supporting justification. Implementation of such changes in the EPP shall not commence prior to NRC approval of the proposed changes in the form of a license amendment incorporating the appropriate revision to the EPP.

The LWA holders shall request a license amendment to incorporate the requirements of any Terms and Conditions set forth in the Incidental Take Statement of applicable Biological Opinions issued subsequent to the effective date of this EPP.

LIMITED WORK AUTHORIZATION
VOGTLE ELECTRIC GENERATING PLANT UNIT 4
SOUTHERN NUCLEAR OPERATING COMPANY, INC.
GEORGIA POWER COMPANY
OGLETHORPE POWER CORPORATION
MUNICIPAL ELECTRIC AUTHORITY OF GEORGIA
CITY OF DALTON, GEORGIA
DOCKET NO. 52-026

Limited Work Authorization No. LWA-002

1. The Nuclear Regulatory Commission (the NRC or the Commission) has found that:
 - A. The application for a limited work authorization (LWA) for Vogtle Electric Generating Plant (VEGP) Unit 4 filed by Southern Nuclear Operating Company, Inc. (SNC) acting on behalf of Georgia Power Company, Oglethorpe Power Corporation, Municipal Electric Authority of Georgia, and the City of Dalton, Georgia, an incorporated municipality in the state of Georgia acting by and through its Board of Water, Light and Sinking Fund Commissioners (City of Dalton), herein referred to as "the VEGP owners," meets the applicable standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's regulations;
 - B. There is reasonable assurance that the activities authorized under Section 2.B of this LWA will be performed in conformity with the application, as amended, the provisions of the Act, and the Commission regulations set forth in 10 CFR Chapter I;
 - C. There is reasonable assurance that the activities authorized by this LWA can be conducted without endangering the health and safety of the public and will not be inimical to the common defense and security;
 - D. There are no unresolved safety issues related to the activities identified in Section 2.B of this LWA;

- E. SNC¹ is technically qualified to engage in the activities authorized by this LWA in accordance with the Commission regulations set forth in 10 CFR Chapter I;
 - F. After weighing the environmental, economic, technical, and other benefits of the activities identified in Section 2.B of this LWA against environmental and other costs and considering reasonable available alternatives, the issuance of this LWA subject to the conditions for protection of the environment set forth herein is in accordance with Subpart A of 10 CFR Part 51 and all applicable requirements have been satisfied; and
 - G. The site redress plan incorporated into this LWA will adequately redress the activities performed under the limited work authorization, if construction is terminated by the holders, the underlying application is withdrawn by the applicant or denied by the NRC, or the limited work authorization is revoked by the NRC.
2. Based on the foregoing findings regarding this limited work authorization, LWA No. LWA-002 is hereby issued to SNC, Georgia Power Company, Oglethorpe Power Corporation, Municipal Electric Authority of Georgia, and the City of Dalton, Georgia (the LWA holders) to read as follows:
- A. This LWA applies to the VEGP Unit 4, a light-water nuclear reactor and associated equipment (the facility), owned by the VEGP Owners. The facility would be located adjacent to existing VEGP Units 1 and 2 on a 3,169-acre coastal plain bluff on the southwest side of the Savannah River in eastern Burke County, GA, approximately 15 miles east-northeast of Waynesboro, GA, and 26 miles southeast of Augusta, GA, and is described in the final safety analysis report (FSAR), as supplemented and amended.
 - B. Subject to the conditions and requirements incorporated herein, the Commission hereby authorizes SNC, pursuant to Sections 103 and 185 of the Act and 10 CFR 50.10(e)(2), to perform the following activities under this LWA: installation of reinforcing steel, sumps and drain lines and other embedded items in the nuclear island (NI) foundation base slab as identified in AP1000 Design Control Document (DCD), Rev. 19, Section 3.8 and placement of concrete for the NI foundation base slab as described in AP1000 DCD, Rev. 19, Section 3.8.
 - C. The LWA is subject to and the LWA holders shall comply with all applicable provisions of the Atomic Energy Act of 1954, as amended, and the rules, regulations, and orders of the Commission, including the conditions set forth in 10 CFR Chapter I, now or hereafter in effect.
 - D. The LWA is subject to and SNC shall comply with the conditions specified and incorporated below:
 - 1) The Site Redress Plan and Environmental Protection Plan in Appendices A and B, respectively, of this LWA are hereby incorporated into this LWA.

¹ SNC is authorized by the VEGP owners to exercise responsibility and control over the physical construction, operation, and maintenance of the facility.

- 2) The Site Redress Plan shall be implemented by the LWA holders if construction is terminated by the holders, the underlying application is withdrawn by the applicant or denied by the NRC, or the LWA is revoked by the NRC.
- E. Any activities performed pursuant to this LWA and as identified in Section 2.B of this LWA, are subject to the conditions for the protection of the environment set forth in the EPP attached as Appendix B to this LWA.
- F. The holders of this LWA are subject to the requirements of 10 CFR Part 21, "Reporting of Defects and Noncompliance," and, with respect to activities authorized under this LWA, are subject to the requirements of 10 CFR 50.55(e), as of the date of issuance of this LWA.
- G. This LWA is effective as of its date of issuance and shall remain in effect until termination by the holders, revoked by the NRC, or effectiveness of a final agency decision denying the combined license application associated with this LWA.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Michael R. Johnson, Director
Office of New Reactors

February 10, 2012
Date of Issuance

Appendices:

Appendix A – Site Redress Plan

Appendix B – Environmental Protection Plan (Nonradiological)

APPENDIX A

VOGTLE ELECTRIC GENERATING PLANT UNIT 4

SITE REDRESS PLAN

1.1 Introduction

A Limited Work Authorization (LWA) allows the holders to perform certain activities set forth in the LWA prior to receiving a combined license (COL) (i.e., permission to initiate construction). However, in order to perform these activities, the LWA application must include a plan for site redress that provides for restoration if construction is terminated by the holders, the underlying application is withdrawn by the applicant or denied by the NRC, or the LWA is revoked by the NRC.

Part 6 of the Southern Nuclear Operating Company (SNC) COL application describes activities that may occur after the U.S. Nuclear Regulatory Commission (NRC) issues an LWA to SNC for the Vogtle Electric Generating Plant (VEGP) site, but before the NRC issues a COL. These LWA activities are subject to regulation 10 CFR 50.10(d) (effective November 8, 2007). In accordance with this regulation, Part 6 also describes the SNC plan for redress of LWA activities should SNC terminate construction of VEGP Unit 4. This site Redress Plan has been developed to provide reasonable assurance that redress carried out under the plan would achieve an environmentally stable and aesthetically acceptable site.

1.2 Site Description

The site selected for two new nuclear units, designated VEGP Units 3 and 4, is the existing 3,169-acre VEGP site in Burke County, in east-central Georgia, on the Savannah River. The site is approximately 100 miles northwest of Savannah, Georgia, and 26 miles southeast of Augusta, Georgia, directly across the river from the U.S. Department of Energy's Savannah River Site (Barnwell County, South Carolina). SNC proposes to construct VEGP Units 3 and 4 adjacent to, and west of, existing VEGP Units 1 and 2.

1.3 Plant Ownership

Currently the land selected for new VEGP Units 3 and 4 is jointly owned by Georgia Power Company (Georgia Power or GPC), Oglethorpe Power Corporation, Municipal Electric Authority of Georgia and the City of Dalton, an incorporated municipality in the State of Georgia. SNC is the exclusive operating licensee of the existing VEGP nuclear units, and has been authorized by GPC, acting as agent for the VEGP owners, to apply for an LWA for the VEGP site. SNC has no ownership interest in the existing or proposed units at VEGP.

GPC and SNC are subsidiaries of Southern Company, Inc., and SNC is the licensed operator for all Southern Company nuclear generating facilities. SNC's business purpose is management and operation of nuclear generating facilities owned by Southern Company subsidiaries. The COL Application, Part 1, provides additional information about Southern Company, GPC, VEGP owners and SNC.

Prior to any site preparation activities, the VEGP owners would grant sufficient rights to SNC for SNC to perform the activities described in this plan.

1.4 Limited Work Authorization Activities

The activities that SNC is authorized to perform under this LWA are as follows:

- Installation of reinforcing steel, sumps and drain lines, and other embedded items in the nuclear island (NI) foundation base slab.
- Placement of concrete for the NI foundation base slab.

LWA activities would take place within the area of excavation and would result in construction of structures located below grade. The structures would be composed primarily of materials that are inert (e.g., soil, rock, gravel, concrete) or relatively inert (e.g., waterproof membrane). Degradable materials intended for temporary use, such as some concrete formwork, would be removed prior to backfill. In addition to the LWA requested activities discussed above, the following ancillary activities would be performed to support the identified LWA activities:

- Installation of construction laydown areas to be used to store bulk materials and to fabricate portions of the requested LWA items, such as assembling reinforcing steel sections to be placed in the base slab formwork prior to the NI concrete pours.
- Construction of two concrete batch plants.
- Transportation of material to the site.

1.5 Site Redress Plan

1.5.1 Site Redress Plan Objectives and Considerations

The purpose of site redress is to reverse, mitigate, or stabilize environmental impacts incurred during LWA activities. The objective of this site redress plan is to ensure that, in the event the VEGP Units 3 and 4 site is not fully developed to provide new nuclear power generation, it would be returned to an unattended, environmentally stable and aesthetically acceptable condition.

Site redress activities will be implemented commensurate with the degree of site modification resulting from LWA activities. Redress activities will reflect applicable land use and/or zoning requirements of local, state and federal agencies, and possible future use scenarios. In scoping the redress activities, SNC will consider certain variables including, but not limited to:

- Future ownership of the site.
- Potential environmental contamination that either pre-dates, or is a result of, site preparation activities.
- Potential liabilities associated with any facility or structure remaining following completion of the redress activities.

In planning for site redress, two general categories of options would be considered:

- Topographic approaches that accomplish the objective and preserve the potential of the site for future industrial use.
- Completion or addition of site development features that enhance the value of the site for potential future industrial use.

Decisions by SNC, the VEGP owners, and state or local land use authorities and industrial development authorities on potential future uses would inform specific redress activities. Redress activities, if necessary, would begin when the LWA activities are terminated by the holders, the underlying application is withdrawn by the applicant or denied by the NRC, or the LWA is revoked by the NRC. Redress activities would include actions to terminate or transfer local and state permits, and designate structures or improvements that would remain and those that must be removed. A detailed scope and schedule will be prepared prior to initiating redress activities. Redress activities will comply with applicable environmental requirements and necessary permits will be obtained prior to beginning redress activities. If, prior to the commencement of redress activities, acceptable uses consistent with the current state of the site's development were identified, SNC would tailor the site redress plan as much as possible to support the alternative uses. In the event that ownership of structures developed for VEGP Units 3 and 4 were transferred to the existing VEGP Units 1 and 2, the new structures would be included in the existing units decommissioning plan.

Between termination of the LWA activities or the decision to discontinue plant construction, and commencement of site redress activities, water quality, air quality, stormwater runoff, solid waste, and the protection of any critical ecological elements will be maintained in compliance with approved permits and regulatory requirements.

1.5.2 Description of Site Redress

SNC LWA activities would take place within the area of preconstruction excavation, below grade. SNC's preferred method of redress for these LWA structures would be burial in place. Georgia regulation 391-3-4-.2 provides for permits for solid waste disposal. Regulation 391-3-4-06 provides for a permit by rule for disposal of inert waste, defined to include earth and earth-like products, concrete, cured asphalt, rock and bricks. SNC believes that it would make better economic, environmental, and safety sense to bury the structures in place rather than demolishing them and removing debris for disposal elsewhere. Removal would simply use up available landfill space elsewhere.

Prior to initiating site redress activities, SNC would discuss with the Georgia Department of Natural Resources (GDNR) the acceptability of burial of the LWA structures in place as a landfill under Georgia solid waste management rules. SNC might need to obtain a variance to cover material that does not fit the State definition of "inert," such as steel and waterproof membrane. However, SNC believes that a variance would be reasonable given that the material would not be likely to produce leachate of environmental concern.

Site redress would ensure that no significant amounts of degradable materials, such as temporary construction formwork, would remain below grade but would be removed and disposed of properly at a permitted landfill. Buried structures (e.g., foundations and utilities) would be evaluated and exhumed if required. Structures approaching grade level would be demolished as necessary to allow a minimum of two feet of final cover.

If the GDNR did not approve in-place disposal, SNC would demolish and remove LWA structures in accordance with Georgia requirements. Any area that became contaminated (non-radiological) as a result of LWA activities or LWA redress activities would be remediated in compliance with Georgia law and regulations. Backfill placement would be in accordance with good engineering practices using material from the original excavation to the extent still available.

Final site redress would include regrading the area to conform to the surrounding land surface and to mitigate erosion from stormwater runoff. The disturbed area would be revegetated to ensure stabilization and an aesthetically pleasing landscape. SNC would provide all required notifications to the GDNR. If GDNR had approved closure as a landfill, SNC would ensure that appropriate deed notices were filed.

1.5.3 Controls to Mitigate Impacts During Redress Activities

Methods used to ensure environmental protection and regulatory compliance during site redress would include best management practices for noise control, traffic control, sediment and erosion control, air quality control, control of potential pollutant sources, stockpile management, and spill prevention, control, and response.

1.5.3.1 Noise Control

During redress activities, ambient noise levels would be similar to those during site preparation activities. Noise would be controlled to maintain compliance with all federal regulations. Neither Georgia nor Burke County has noise ordinances. Procedures and a hearing conservation program would be developed for redress activities.

The heavy equipment needed for demolition, clearing, excavating, grading, trash disposal, and land filling operations would be the major source of noise pollution. Standard noise dampening devices on equipment, together with the location of the primary work site below grade, are expected to be sufficient to keep off-site noise levels at acceptable levels or lower. In addition, major redress activities would be constrained to weekdays and other activities would be limited on weekends.

1.5.3.2 Traffic Control

The highway access to VEGP would experience increased traffic during redress activities, similar to traffic increases during site preparation activities. SNC has assumed that redress activities would involve 250 workers or less. Based on the analysis of construction impacts, River Road has the capacity for an additional 1,200 cars per hour. Workers would access the site via the construction access road.

Traffic control on and off site would adhere to the applicable local, state, and federal requirements.

1.5.3.3 Erosion and Sediment Controls

Most of the area of LWA activities was cleared, paved, or graveled during site preparation activities. The runoff from the footprint would be controlled by a stormwater management system. During redress activities, disturbances to the existing ground surface could potentially increase the runoff sediment load. However, the location of LWA activities within the excavation area will minimize the risk of runoff offsite. Measures would be taken consistent with the Georgia Erosion and Sediment Control Act and implementing regulations to avoid concentrated flows with a high potential to transport sediment. Visual inspections of erosion controls would monitor the effectiveness of the controls and aid in determining if other mitigation measures are necessary. Where necessary, special erosion control measures would be implemented to further minimize impacts to the Savannah River, onsite streams or ponds, and existing units' operations. Site redress activities would include the use of appropriate stabilization methods to

mitigate the long-term erosion of sediment into the river and would be in compliance with an approved Erosion and Sedimentation Control Plan, which is required by the Georgia Department of Natural Resources and the federal Clean Water Act.

Sediment and erosion control would conform to the following best management practices:

- If periodic inspections or other information indicate that a control measure is ineffective, the control measure would be modified or replaced as necessary.
- In the event that sediment escapes the site during redress activities, off-site accumulations of sediment would be removed to minimize off-site impacts, to the extent practical.
- Sediment would be removed from sediment traps or sedimentation ponds as needed.
- Good housekeeping practices would be implemented to prevent litter, demolition debris, and chemicals from becoming pollutant sources for stormwater discharges.
- Erosion and sediment runoff would be controlled through the use of accepted structural and stabilization practices.
- Where practical, disturbed soil areas would be reseeded with maintenance seed (if activities are temporary) or permanent seed mix (for permanent or final cover) as soon as possible after redress activities are completed.
- Where practical, excelsior blankets would be mulched or installed, and slopes greater than 3H:1V would be reseeded. Mulch would be applied as soon as possible after seeding to reduce runoff and promote vegetation.
- Sidehill slopes would be furrow-contoured as practical. Otherwise, the final grading would be performed in a manner that would result in tracks and depressions contoured across the slope instead of down.
- The time that bare soil is exposed before being stabilized would be minimized.
- The disturbance to existing vegetation would be minimized.
- No solid materials, including demolition materials, would be discharged to waters of the United States, unless authorized under an approved permit.

1.5.3.4 Air Quality Controls

Dust, smoke, and engine exhaust are sources of air pollution. During redress activities, controls would be imposed to mitigate air emissions from such sources. The most traveled roads would be paved or sprinkled periodically if not paved, to reduce dust. Bare areas would be seeded to provide ground cover. Air pollution control regulations related to open burning or the operation of fuel-burning equipment would be followed. Permits and operating certificates would be secured where required. Fuel-burning equipment would be maintained in good mechanical order to reduce excessive emissions. Water sprinkling of laydown, storage, and parking areas, unpaved roads, and other areas of the site would suppress dust.

1.5.3.5 Potential Pollutant Sources (Effluents, Wastes, Spills, and Material Handling)

During redress activities, there would be many possible pollutant sources. Best management practices would be followed to ensure protection of soils, groundwater and surface water from accidental spills or releases of pollutants.

1.5.4 Potential Contamination

Any spills during site preparation or redress activities would be remediated in compliance with the requirements of this plan. The area would be returned to its baseline state post-redress.

1.5.5 Potential Liabilities

If ownership of the site is transferred, neither SNC nor the VEGP owners would have further liability with regard to site redress.

1.6 Financial Responsibility

It is the financial responsibility of the VEGP owners to provide the funding to redress the new plant footprint on the VEGP site in the event that site preparation activities are performed and construction is subsequently terminated by the holders, the underlying application is withdrawn by the applicant or denied by the NRC, or the LWA is revoked by the NRC.

1.7 NRC Notification Upon Completion

SNC would notify the NRC upon completion of activities addressed by this Site Redress Plan. The site would be made available for inspection, and any documentation that the NRC may require would be provided to confirm the satisfactory completion of the redress activities.

APPENDIX B

VOGTLE ELECTRIC GENERATING PLANT UNIT 4

ENVIRONMENTAL PROTECTION PLAN

(NONRADIOLOGICAL)

1.0 Objectives of the Environmental Protection Plan

The Environmental Protection Plan (EPP) objectives are to ensure compliance with Biological Opinions issued pursuant to the Endangered Species Act of 1973, as amended (ESA), and to ensure that the U.S. Nuclear Regulatory Commission (NRC) is kept informed of other environmental matters. The EPP is intended to be consistent with Federal, State, and local requirements for environmental protection.

2.0 Environmental Protection Issues

In the Final Supplemental Environmental Impact Statement (FSEIS) dated March 2011, the staff considered the environmental impacts associated with the construction and operation of Vogtle Electric Generating Plant Unit Nos. 3 and 4. This EPP applies to the LWA holders' actions affecting the protected environmental resources evaluated in the FSEIS and the LWA holders' actions that may affect any newly discovered protected environmental resources.

2.1 Aquatic Resources Issues

Federal agencies other than the U.S. Nuclear Regulatory Commission (NRC), such as the U.S. Environmental Protection Agency and the U.S. Army Corps of Engineers, have jurisdiction to regulate aquatic resources under the Federal Water Pollution Control Act (Clean Water Act or CWA) and the Rivers and Harbors Appropriation Act of 1899 (RHA). Certain water quality environmental considerations identified in the FSEIS, including effluent limitations, monitoring requirements, and mitigation measures, are regulated under the LWA holders' CWA permits, such as National Pollutant Discharge Elimination System and Section 404 permits, and RHA Section 10 permit. Nothing within this EPP shall be construed to place additional requirements on the regulation of aquatic resources except the imposition of the requirements in a Biological Opinion under the ESA (see Section 2.3).

2.2 Terrestrial Resources Issues

Several statutes govern the regulation of terrestrial resources. For example, the U.S. Fish and Wildlife Service (FWS) regulates matters involving migratory birds and their nests in accordance with the Migratory Bird Treaty Act. Activities affecting migratory birds or their nests may require permits under the Migratory Bird Treaty Act. The FWS also regulates matters involving the protection and taking of bald and golden eagles in accordance with the Bald and Golden Eagle Protection Act.

2.3 Endangered Species Act of 1973

The NRC may be required to protect some aquatic resources and terrestrial resources in accordance with the ESA. If a Biological Opinion is issued to the NRC in accordance with ESA Section 7 prior to the issuance of the combined license, the LWA holders shall comply with the terms and conditions set forth in the Incidental Take Statement of the Biological Opinion. If any Federally listed species or critical habitat occurs in an area affected by construction or operation of the plant that was not previously identified as occurring in such areas, including species and critical habitat that were not previously Federally listed, the LWA holders shall inform the NRC within four hours of discovery. The time of discovery is identified as the specific time when a decision is made to notify another agency or to issue a press release. Similarly, the LWA holders shall inform the NRC within four hours of discovery of any take, as defined in the ESA, of a Federally listed species or destruction or adverse modification of critical habitat. The four-hour discovery notifications shall be made to the NRC Operations Center via the Emergency Notification System. The LWA holders shall provide any necessary information to the NRC if the NRC initiates or reinitiates consultation under the ESA.

Unusual Event - The LWA holders shall inform the NRC of any onsite mortality, injury, or unusual occurrence of any species protected by the ESA within four hours of discovery, followed by a written report in accordance with Section 4.1. The time of discovery is identified as the specific time when a decision is made to notify another agency or to issue a press release. Such incidents shall be reported regardless of the LWA holders' assessment of causal relation to plant construction or operation.

3.0 Consistency Requirements

The LWA holders shall notify the NRC of proposed changes to permits or certifications concerning aquatic or terrestrial resources by providing the NRC with a copy of the proposed change(s) at the same time it is submitted to the permitting agency. The LWA holders shall provide the NRC with a copy of the application for renewal of permits or certifications at the same time the application is submitted to the permitting agency.

Changes to or renewals of such permits or certifications shall be reported to the NRC within 30 days following the later of the date the change or renewal is approved or the date the change becomes effective. If a permit or certification, in part or in its entirety, is appealed and stayed, the NRC shall be notified within 30 days following the date the stay is granted.

4.0 Administrative Procedures

4.1 Plant Reporting Requirements: Non-routine Reports

A written report shall be submitted to the NRC within 30 days of occurrence of any unusual event described in Section 2.3 of this EPP. The report shall: (a) describe, analyze, and evaluate the event, including extent and magnitude of the impact and plant operating characteristics at the time of the event, (b) describe the probable cause of the event, (c) indicate the action taken to correct the reported event, (d) indicate the corrective action taken to preclude repetition of the event and to prevent similar occurrences involving similar components or systems, and (e) indicate the agencies notified and their preliminary responses.

4.2 Review and Audit

The LWA holders shall provide for review and audit of compliance with Section 2.3 of this EPP. The audits shall be conducted independently of the individual or groups responsible for performing the specific activity. A description of the organizational structure utilized to achieve the independent review and audit function and results of the audit activities shall be maintained and made available for inspection.

4.3 Records Retention

Records required by this EPP shall be made and retained in a manner convenient for review and inspection. These records shall be made available to the NRC on request. The records, data, and logs relating to this EPP shall be retained for five years or, where applicable, in accordance with the requirements of other agencies.

4.4 Changes in Environmental Protection Plan

A request for a change in the EPP shall include an assessment of the environmental impact of the proposed change and a supporting justification. Implementation of such changes in the EPP shall not commence prior to NRC approval of the proposed changes in the form of a license amendment incorporating the appropriate revision to the EPP.

The LWA holders shall request a license amendment to incorporate the requirements of any Terms and Conditions set forth in the Incidental Take Statement of applicable Biological Opinions issued subsequent to the effective date of this EPP.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Gregory B. Jaczko, Chairman
Kristine L. Svinicki
George Apostolakis
William D. Magwood, IV
William C. Ostendorff

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

CLI-12-02

MEMORANDUM AND ORDER

Our decision today concludes the uncontested portion of this proceeding, conducted pursuant to § 189(a) of the Atomic Energy Act of 1954, as amended (AEA). We consider today the sufficiency of the NRC Staff's review of the application submitted by Southern Nuclear Operating Co. (Southern) for combined licenses (COLs) for two new nuclear generation facilities, Units 3 and 4, at the existing Vogtle Electric Generating Plant (Vogtle) site near Waynesboro, Georgia. We also consider the sufficiency of the Staff's review of Southern's October 2, 2009, request for limited work authorizations (LWAs) to engage in certain construction activities in connection with proposed Units 3 and 4.

As discussed below, we conclude that the Staff's review has been adequate to support the findings set forth in 10 C.F.R. §§ 52.97, 51.107(a) and (d), and 50.10. We also direct the NRC Staff to include in the Vogtle licenses the condition discussed below.

I. BACKGROUND

On September 27 and 28, 2011, we presided over the uncontested hearing for this proceeding at our Rockville, Maryland headquarters. This evidentiary hearing represented one of the final steps in the NRC's comprehensive evaluation of Southern's proposed new Vogtle site units. Consistent with 10 C.F.R. § 52.73, Southern's COL application references the AP1000 standard design certification,¹ and the early site permit (ESP) granted in August 2009.² The agency held formal rulemaking proceedings in connection with the AP1000 standard design certification and its associated amendments. The Vogtle ESP application was the subject of both contested and uncontested adjudications, and the COL application also was the subject of a contested adjudication. Issues resolved in the AP1000 design certification rulemaking, the ESP proceeding, or the contested portion of this COL proceeding are closed and will not be revisited here; however, a brief discussion of these matters is included to provide context for today's decision. We also provide a brief history of this proceeding.

¹ See 10 C.F.R. pt. 52, app. D.

² "Southern Nuclear Operating Company, Vogtle Electric Generating Plant ESP Site Docket No. 52-011 Early Site Permit and Limited Work Authorization," Aug. 26, 2009 (ADAMS accession no. ML092290157).

A. Related Adjudications**1. ESP Proceeding**

Southern applied for an ESP for proposed Units 3 and 4 on August 15, 2006. In response to the NRC's notice of hearing,³ a coalition of community action organizations filed a request for hearing and petition to intervene proffering a series of environmental contentions, portions of which the Board reformulated as two contentions and admitted.⁴ After issuance of the final environmental impact statement (FEIS), the same petitioners submitted a new contention, which the Board admitted in modified form.⁵ The Board ruled against the intervenors on the merits of all three contentions.⁶ We denied the intervenors' appeal of the Board's merits ruling on two of these contentions (the ruling on the third was not appealed), ending the contested portion of the ESP proceeding.⁷

In the uncontested portion of the ESP proceeding, the Board asked questions and heard presentations on a number of specific topics. The Board issued its final initial decision in August 2009.⁸ As the Board indicated in its decision, it considered the sufficiency of all of the elements of the Staff's review of the ESP, whether or not it asked

³ Southern Nuclear Operating Company; Notice of Hearing and Opportunity to Petition for Leave to Intervene on An Early Site Permit for the Vogtle ESP Site, 71 Fed. Reg. 60,195 (Oct. 12, 2006).

⁴ See *Southern Nuclear Operating Co.* (Early Site Permit for Vogtle ESP Site), LBP-07-3, 65 NRC 237, 246, 279 (2007).

⁵ See LBP-09-7, 69 NRC 613, 629 (2009) (referring to Licensing Board Memorandum and Order (Ruling on Motion to Admit New Contention) (Oct. 24, 2008), at 20 (unpublished)).

⁶ LBP-09-7, 69 NRC 624, 733-35 (2009).

⁷ See CLI-10-5, 71 NRC 90 (2010).

⁸ See LBP-09-19, 70 NRC 433 (2009).

specific questions or heard a presentation at the hearing on a particular topic.⁹ The Board also made summary findings of fact and conclusions of law, including safety and environmental findings on both the ESP application and the request for an LWA.¹⁰ The COL application references this ESP, by which the NRC approved the suitability of the site.

2. Contested COL Proceeding

In response to Southern's March 31, 2008, COL application, five organizations—the Center for a Sustainable Coast, Savannah Riverkeeper, the Southern Alliance for Clean Energy, Atlanta Women's Action for New Directions, and the Blue Ridge Environmental Defense League (BREDL)—petitioned for a hearing, proposing three contentions. The Board admitted one contention (SAFETY-1), and declined to admit the other two.¹¹ The intervenors later sought admission of a new environmental contention, which the Board declined to admit.¹² In October 2009, the intervenors sought to amend SAFETY-1; the Board admitted a revised version of the amended contention.¹³ In May

⁹ *Id.* at 560.

¹⁰ *Id.* at 560-63. Southern requested an LWA with its ESP, in order to conduct certain site-preparation activities at the Vogtle site. Southern later expanded its request to include additional activities, including placement of engineered backfill, mudmats, and retaining walls. This LWA, together with a second LWA requested as part of the COL application, are discussed *infra*.

¹¹ See *Southern Nuclear Operating Co.* (Vogtle Electric Generating Plant, Units 3 and 4), LBP-09-3, 69 NRC 139, 146, 167-68 (2009). The Board referred to us its rulings on the rejected contentions. *Id.* at 159, 167-68. We declined to review the Board's rulings. CLI-09-13, 69 NRC 575, 576, 579 (2009).

¹² Memorandum and Order (Ruling on Motion to Admit New Contention) (Sept. 24, 2009) (unpublished), at 2, 6-7.

¹³ Memorandum and Order (Ruling on Motion to Amend Contention) (Jan. 8, 2010) (unpublished), at 2, app. A. A separate set of petitioners (Vince Drescher, Kenneth Ward, John C. Horn, Jr., William S. Bashlor, and James Eddie Partain) sought to (continued . . .)

2010, the Board granted Southern's motion for summary disposition of SAFETY-1.¹⁴

The contested portion of this proceeding ended in June 2010.

3. Second COL Licensing Board

A second licensing board was established in August 2010 after three public interest groups—BREDL, Georgia Women's Action for New Directions (formerly known as Atlanta Women's Action for New Directions), and the Center for a Sustainable Coast—sought admission of a new contention related to Southern's containment coating inspection program.¹⁵ The second board denied the request to admit this new contention.¹⁶ We affirmed the Board's decision.¹⁷

4. Post-Fukushima Event Petitions

Additional pleadings directed at the Vogtle COL application were filed in the aftermath of the Fukushima Dai-ichi events. The Vogtle COL proceeding was one of the captioned proceedings subject to petitions that requested the suspension of "all decisions" regarding the issuance of COLs, pending completion of several actions associated with the nuclear events in Japan. We granted that petition in part and denied

intervene in October 2009, proposing an environmental contention, which the Board rejected. LBP-10-1, 71 NRC 165, 173-74, 185 (2010). The Board's decision was not appealed.

¹⁴ LBP-10-8, 71 NRC 433, 436, 446-47 (2010).

¹⁵ See *Proposed New Contention by Joint Intervenors Regarding the Inadequacy of Applicant's Containment/Coating Inspection Program* (Aug. 12, 2010) (Attachments amended Aug. 13, 2010), at 1, 4.

¹⁶ LBP-10-21, 72 NRC ____ (Nov. 30, 2010) (slip op.).

¹⁷ See CLI-11-8, 74 NRC ____ (Sept. 27, 2011) (slip op.).

it in part.¹⁸ Later, in August 2011, BREDL and, separately, the Center for a Sustainable Coast, Georgia Women's Action for New Directions, and Southern Alliance for Clean Energy (collectively, CSC Petitioners), filed substantially similar motions to reopen the record and admit a new Fukushima-event-based contention in the *Vogtle* COL proceeding.¹⁹ The Board denied these motions as premature.²⁰ The petitioners have appealed the Board's decision; the matter is pending before us.²¹ We will address that petition as a separate matter from today's decision, which pertains only to the uncontested hearing.

¹⁸ See generally *Union Electric Co. d/b/a/ Ameren Missouri* (Callaway Plant, Unit 2), CLI-11-5, 74 NRC ____ (Sept. 9, 2011) (slip op.).

¹⁹ See generally *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* (Aug. 11, 2011), and *Contention Regarding NEPA Requirement to Address Safety and Environmental Implications of the Fukushima Task Force Report* (Aug. 11, 2011) (BREDL Petitioners); *Southern Nuclear Operating Co. (Vogtle Electric Generating Plant, Units 3 and 4): Motion to Reopen the Record and Admit Contention to Address the Safety and Environmental Implications of the Nuclear Regulatory Commission Task Force Report on the Fukushima Dai-ichi Accident* (Aug. 11, 2011), and *Contention Regarding NEPA Requirement to Address Safety and Environmental Implications of the Fukushima Task Force Report* (Aug. 11, 2011) (CSC Petitioners).

²⁰ See *PPL Bell Bend, L.L.C.* (Bell Bend Nuclear Power Plant), *Luminant Generation Company LLC* (Comanche Peak Nuclear Power Plant, Units 3 and 4), *Energy Northwest* (Columbia Generating Station), *Southern Nuclear Operating Co.* (Vogtle Electric Generating Plants, Units 3 and 4), *Duke Energy Carolinas LLC* (William States Lee III Nuclear Station, Units 1 and 2), LBP-11-27, 74 NRC ____ (Oct. 18, 2011) (slip op.).

²¹ A single petition for review has been filed in this matter, as well as on the *Comanche Peak* and *W.S. Lee* COL dockets, and the *Columbia Generating Station* license renewal docket. See generally *Petition for Review of LBP-11-27* (Nov. 2, 2011), at 1 n.1 (naming BREDL and the CSC Petitioners as appellants in this proceeding).

The same two sets of petitioners filed motions to reinstate the contention and to supplement its basis.²² The Board denied these motions.²³

B. AP1000 Design Certification Rulemaking

The AP1000 is a standard design, certified in 10 C.F.R. Part 52, Appendix D. An amendment to the certified design recently was published in the *Federal Register*, and became final on December 30, 2011.²⁴ The currently approved version of the standard design is contained in Revision 19 to the design control document (DCD), which is incorporated by reference into Appendix D.

C. Uncontested Proceeding

The majority of the environmental issues associated with proposed Vogtle Units 3 and 4 were resolved during the Staff's ESP review. As part of its COL review, the Staff prepared a supplement to the early site permit final environmental impact statement (ESP FEIS)²⁵ to evaluate whether there is new and significant information that might affect the Staff's environmental conclusions. The NRC Staff issued this final

²² See *Motion to Reinstate and Supplement the Basis for Fukushima Task Force Report Contention* (Oct. 28, 2011) (BREDL Petitioners). See *Motion to Reinstate and Supplement the Basis for Fukushima Task Force Report Contention* (Oct. 28, 2011) (CSC Petitioners).

²³ Memorandum and Order (Denying Motions to Reinstate Contention), LBP-11-36, 74 NRC ____ (Nov. 30, 2011) (slip op.).

²⁴ Final Rule, AP1000 Design Certification Amendment, 76 Fed. Reg. 82,079, 82,079 (Dec. 30, 2011). The applicability date of the rule for those entities who receive actual notice of the rule is the date of receipt. *Id.*

²⁵ See generally "Final Environmental Impact Statement for an Early Site Permit (ESP) at the Vogtle Electric Generating Plant (VEGP) ESP Site," NUREG-1872 (Aug. 2008) (ML082260190).

supplemental environmental impact statement (FSEIS) on March 25, 2011.²⁶ Following review by the Advisory Committee on Reactor Safeguards (ACRS),²⁷ the Staff issued its final safety evaluation report (FSER) on August 9, 2011.²⁸ The Staff submitted its information paper on August 9, 2011.²⁹ As directed by the Commission, the Staff's information paper identified and discussed nonroutine matters, unique facility features, and novel issues related to the Vogtle application.³⁰ In terms of safety issues, the Staff discussed cyber security, loss of large areas (LOLA) of the plant due to explosions or fires, and licenses for byproduct, source, and special nuclear materials under 10 C.F.R.

²⁶ See Southern Nuclear Operating Company, Inc.; Notice of Availability of the Final Supplemental Environmental Impact Statement for Vogtle Electric Generating Plant Units 3 and 4; Combined License Application Review, 76 Fed. Reg. 16,645 (Mar. 24, 2011) (COL FSEIS).

²⁷ See Armijo, J.S., ACRS Vice Chairman, letter to Gregory B. Jaczko, Chairman, NRC, "Report on the Safety Aspects of the Southern Nuclear Operating Company Combined License Application for Vogtle Electric Generating Plant, Units 3 and 4" (Jan. 24, 2011) (ML110170006) (ACRS Letter). As noted in the letter, the ACRS reviewed the Staff's Advanced Safety Evaluation Report (ASER) for Vogtle Units 3 and 4 during its meeting on January 13-15, 2011. The letter states that the ACRS's AP1000 subcommittee held meetings on June 24-25, July 21-22, September 20-21, and December 15-16, 2010, to review chapters of the COL application and of the Staff's ASER. *Id.* at 1. The Staff responded to the Vice Chairman's letter. See Borchardt, R.W., Executive Director for Operations, letter to Dr. J.S. Armijo, Vice Chairman, ACRS, "Report on the Safety Aspects of the Southern Nuclear Operating Company Combined License Application for Vogtle Electric Generating Plant, Units 3 and 4" (Mar. 3, 2011) (ML110480429).

²⁸ See Ex. NRC000004, "Final Safety Evaluation Report for Combined License for Vogtle Electric Generating Plant, Units 3 and 4" (Aug. 2011) (COL FSER).

²⁹ See Ex. NRC000003, "Staff Statement in Support of the Uncontested Hearing for Issuance of Combined Licenses and Limited Work Authorizations for Vogtle Electric Generating Plant, Units 3 and 4 (Docket Nos. 52-025 and 52-026)," Commission Paper SECY-11-0110, (Aug. 9, 2011) (Staff Testimony). See also Internal Commission Procedures at IV-13 (ICPs).

³⁰ See ICPs at IV-13; Staff Requirements - SECY-10-0082 - Mandatory Hearing Process for Combined License Application Proceedings Under 10 C.F.R. Part 52 (Dec. 23, 2010) (ML103570203).

Parts 30, 40, and 70.³¹ For environmental issues, the Staff explained that the analysis conducted in connection with the ESP, together with Southern's decision to reference the AP1000 certified design instead of using the plant parameter envelope approach, limited the COL environmental analysis to "new and significant" information.³² The Staff's paper briefly reviewed the process the Staff used in conducting its environmental analysis for the COL application and described the effects on its process of the ESP license amendment requests submitted after the ESP was issued.³³

We issued a Notice of Hearing on August 16, 2011.³⁴ This notice was followed by an order of the Secretary transmitting the Commissioners' pre-hearing questions to the Staff and to Southern.³⁵ Southern and the Staff filed their responses to the Commissioners' pre-hearing questions on September 13, 2011.³⁶ Southern and the Staff also submitted their witness and exhibit lists for the September 27-28, 2011, hearing.³⁷

³¹ See Ex. NRC000003, Staff Testimony, at 16-21.

³² See *id.* at 21.

³³ See *id.* at 22-23.

³⁴ Southern Nuclear Operating Co., et al.; Combined Licenses for Vogtle Electric Generating Plant, Units 3 and 4, and Limited Work Authorizations; Notice of Hearing, 76 Fed. Reg. 50,767 (Aug. 16, 2011) (Notice of Hearing).

³⁵ Order (Transmitting Pre-Hearing Questions) (Aug. 31, 2011) (unpublished) (Pre-Hearing Order).

³⁶ Ex. SNC000005, *Southern Nuclear Operating Company's Response to the Commission's Order of August 31, 2011* (Sept. 13, 2011) (Southern Pre-Hearing Response); Ex. NRC00008A, *NRC Staff Responses to Commission Pre-Hearing Questions* (Sept. 13, 2011) (Staff Pre-Hearing Response); Ex. NRC00008B, *Corrected Page 15* (Sept. 20, 2011) (Staff Corrected Pre-Hearing Response).

³⁷ *Southern Nuclear Operating Company's Witness List for the Vogtle Units 3 & 4 COL Mandatory Hearing* (Sept. 12, 2011); *Southern Nuclear Operating Company's* (continued . . .)

Prior to the hearing, the Secretary issued a scheduling order detailing matters such as the identification and swearing-in of witnesses, the process that would be used for formally admitting evidence, and the format of presentations.³⁸ This was followed by a Scheduling Note prescribing the content and time allotment of the presentations to be provided at the hearing by Southern and by the Staff.³⁹

At the outset of the hearing, after the Staff's and Southern's witnesses were sworn in,⁴⁰ the parties' pre-filed testimony and exhibits were admitted into the evidentiary record.⁴¹ We heard opening statements, followed by testimony from Staff and Southern witness panels, and questioned the witnesses, in accordance with the order of presentations set out in the Scheduling Note. The hearing ended with closing statements.

Supplemented Witness List for the Vogtle Units 3 & 4 COL Mandatory Hearing (Sept. 20, 2011); *NRC Staff Witness List* (Sept. 13, 2011); *Revised NRC Staff Witness List* (Sept. 22, 2011); *Southern Nuclear Operating Company's List of Proposed Exhibits* (Sept. 20, 2011); *Southern Nuclear Operating Company's Revised List of Proposed Exhibits* (Sept. 24, 2011); *Southern Nuclear Operating Company's Revised and Updated List of Proposed Exhibits* (Sept. 26, 2011); *NRC Staff Exhibit List* (Sept. 20, 2011); *Revised NRC Staff Exhibit List* (Sept. 23, 2011).

³⁸ Scheduling Order (Sept. 13, 2011) (unpublished).

³⁹ Vietti-Cook, Annette, Secretary of the Commission, Memorandum to Counsel for Applicant and Staff (Enclosure: Scheduling Note) (Sept. 20, 2011); Scheduling Note (Revised) (Sept. 23, 2011) (Revised Scheduling Note).

⁴⁰ There were eleven Southern witnesses and forty-nine Staff witnesses. See Tr. at 11-16.

⁴¹ See Tr. at 17-18. Southern's Exhibits SNC000002 through SNC000007, SNC000009, SNCR20001, SNCR00008, and SNCR00010, and the Staff's Exhibits NRC000001 through NRC000006, NRC00007A-7D, NRC00008A-8B, NRC000009, NRCR00010-13, and NRC000014, were admitted into the record. *Id.*

After the hearing, the Secretary issued orders setting deadlines for proposed transcript corrections, and for responses to additional questions.⁴² The Staff and Southern filed a joint motion proposing transcript corrections.⁴³ The parties timely submitted supplemental responses to the additional questions.⁴⁴ The Secretary subsequently issued an order admitting all additional exhibits into the record, adopting transcript corrections, and closing the evidentiary record.⁴⁵

⁴² Order (Setting Deadline for Proposed Transcript Corrections) (Oct. 3, 2011) (unpublished); Order (Supplemental Responses and Post-Hearing Questions) (Oct. 6, 2011) (unpublished) (Post-Hearing Order) (providing for answers to questions posed during the hearing, and propounding additional post-hearing questions).

⁴³ *Joint Motion for Transcript Corrections* (Oct. 11, 2011).

⁴⁴ Ex. NRC000015, *NRC Staff Responses to Commission Post-Hearing Questions* (Oct. 17, 2011) (Staff Post-Hearing Response); Ex. SNC000011, *Southern Nuclear Operating Company's Response to the Commission's Order of October 6, 2011* (Oct. 17, 2011). Southern later filed a revised version of its post-hearing responses. See Ex. SNCR00011, *Southern Nuclear Operating Company's Request for Leave to File Revised Exhibit* (Oct. 21, 2011); *Southern Nuclear Operating Company's Response to the Commission's Order of October 6, 2011* (dated Oct. 17, 2011, served Oct. 21, 2011) (Southern Post-Hearing Response). In addition, the Staff filed a letter making revisions to the Final SER and to the draft combined license. Moulding, Patrick A., Counsel for the NRC Staff, letter to Chairman and Commissioners, U.S. Nuclear Regulatory Commission (Oct. 28, 2011) (Enclosure 1: *NRC Staff Clarifications to the Mandatory Hearing Record*). This letter (with its enclosure) was assigned Exhibit number NRC000016.

⁴⁵ Order (Adopting Proposed Transcript Corrections, Admitting Post-Hearing Responses, and Closing the Record of the Proceeding) (Nov. 1, 2011) (unpublished).

II. DISCUSSION

A. Review Standards

In this proceeding, we consider safety issues pursuant to AEA § 189(a), and environmental issues as required by §102(2)(A), (C), and (E) of the National Environmental Policy Act of 1969, as amended (NEPA).⁴⁶ The Notice of Hearing for this uncontested proceeding sets the parameters for our review. The determination we must make “is whether the review of the application by the Commission’s [S]taff has been adequate to support the findings found in 10 C.F.R. [§] 52.97 and 10 C.F.R. [§] 51.107(a), for each of the COLs to be issued, and in 10 C.F.R. [§] 50.10 and 10 C.F.R. [§] 51.107(d) with respect to the LWAs.”⁴⁷ We do not review Southern’s application *de novo*; we consider instead the sufficiency of the Staff’s review of that application.⁴⁸

On the safety side, we examine whether the Staff’s review of the combined license application has been adequate to support its findings, including whether: (1) the applicable standards and requirements of the AEA and our regulations have been met; (2) any required notifications to other agencies or bodies have been made; (3) there is

⁴⁶ AEA § 182(c) requires the publication of notice of the application in the *Federal Register* for four consecutive weeks. See also 10 C.F.R. § 50.43(a)(3). This requirement has been satisfied. See Southern Nuclear Operating Company; Notice of Availability of Application for a Combined License, 76 Fed. Reg. 11,822 (Mar. 3, 2011); Southern Nuclear Operating Company; Notice of Availability of Application for a Combined License, 76 Fed. Reg. 13,241 (Mar. 10, 2011); Southern Nuclear Operating Company; Notice of Availability of Application for a Combined License, 76 Fed. Reg. 14,699 (Mar. 17, 2011); Southern Nuclear Operating Company; Notice of Availability of Application for a Combined License, 76 Fed. Reg. 16,645 (Mar. 24, 2011).

⁴⁷ Notice of Hearing at 50,768.

⁴⁸ See generally *Exelon Generation Co., LLC* (Early Site Permit for Clinton ESP Site), CLI-05-17, 62 NRC 5, 39 (2005); *Clinton ESP*, CLI-06-20, 64 NRC 15, 21-22 (2006).

reasonable assurance that the facility will be constructed and will operate in conformity with the license, the provisions of the AEA, and our regulations;

(4) the applicant is technically and financially qualified to engage in the activities authorized; and (5) issuance of the license will not be inimical to the common defense and security or the health and safety of the public.⁴⁹

For the LWA application, we examine whether the Staff's review of the application has been adequate to support its findings, including whether: (1) the applicable standards and requirements of the AEA and our regulations applicable to the activities to be conducted under the LWA have been met; (2) the applicant is technically qualified to engage in the activities authorized; (3) issuance of the LWA will provide reasonable assurance of adequate protection to public health and safety and will not be inimical to the common defense and security; and (4) there are unresolved safety issues relating to the activities to be conducted under the LWA that would constitute good cause for withholding the authorization.⁵⁰

On the environmental side, with respect to the COL application, we (1) determine whether the requirements of NEPA § 102(2)(A), (C), and (E), and the applicable regulations in 10 C.F.R. Part 51, have been met; (2) independently consider the final balance among conflicting factors contained in the record of the proceeding with a view to determining the appropriate action to be taken; (3) determine, after weighing the environmental, economic, technical, and other benefits against environmental and other costs, and considering reasonable alternatives, whether the combined license should be

⁴⁹ 10 C.F.R. § 52.97(a)(1)(i)-(v).

⁵⁰ 10 C.F.R. § 50.10(e)(iii)-(iv).

issued, denied, or appropriately conditioned to protect environmental values; and
(4) determine whether the NEPA review conducted by the NRC Staff has been adequate.⁵¹

Finally, with respect to an LWA, we (1) determine whether the requirements of NEPA § 102(2)(A), (C), and (E), and the regulations in 10 C.F.R. Part 51, Subpart A, have been met, with respect to the activities to be conducted under the LWA; (2) independently consider the balance among conflicting factors with respect to the LWA, which is contained in the record of the proceeding, with a view to determining the appropriate action to be taken; (3) determine whether the site redress plan will adequately redress the activities performed under the LWA, should LWA activities be terminated by the holder or the LWA revoked by the NRC, or upon effectiveness of our final decision denying the COL application; and (4) determine whether the NEPA review conducted by the NRC Staff for the LWA has been adequate.⁵²

B. Analysis

Our consideration of the evidentiary record in this uncontested proceeding is predicated on the review parameters discussed above, and is focused on determining whether the Staff's review of the COL application and LWA request was sufficient to support the Staff's safety and environmental findings. To satisfy NEPA requirements, we also independently consider the final balance among conflicting factors in the record. With these ends in mind, we review and analyze the information we received in this proceeding.

⁵¹ 10 C.F.R. § 51.107(a)(1)-(4).

⁵² 10 C.F.R. § 51.107(d)(1)(i)-(iv).

We asked a series of pre-hearing questions to inform our consideration of the sufficiency of the Staff's review of the COL application,⁵³ and received detailed responses from the parties.⁵⁴ During the hearing, we heard panel presentations on a series of topics, which we consider in detail below. The panel presentation topics were selected to correspond to areas of the Staff's FSER or FSEIS where we sought additional information or clarifications as part of our evaluation of the sufficiency of the Staff's review. We asked detailed questions during the hearing to further inform our consideration of the issues, and followed up in areas of concern by asking post-hearing questions,⁵⁵ again receiving detailed responses from the parties.⁵⁶ All of this information, as well as the Staff's FSER and FSEIS, is part of the record on which we base today's decision.

The following witnesses testified for Southern during the hearing (in order of appearance): Joseph (Buzz) Miller, Charles (Chuck) Pierce, Wesley Sparkman, Amy Aughtman, Eddie Grant, Donald Moore, Theodore Amundson, Jerry Sims, and Dale Fulton. The following witnesses testified for the Staff during the hearing (also in order of appearance): Michael Johnson, Frank Akstulewicz, Robert Schaaf, Gregory Hatchett, Bret Tegeler, Barry Zalzman, Ravindra Joshi, Denise McGovern, Mohamed Shams, Sarah Tabatabai, Michael Dusaniwskyj, Barry Wray, Jill Caverly, Thomas Scarbrough, John McKirgan, Lynn Mrowca, Mark Caruso, Malcolm Patterson, Terry Jackson, Tania

⁵³ See Pre-Hearing Order.

⁵⁴ See Ex. SNC000005, Southern Pre-Hearing Response; Ex. NRC00008A, Staff Pre-Hearing Response; Ex. NRC00008B, Staff Corrected Pre-Hearing Response.

⁵⁵ See Post-Hearing Order.

⁵⁶ See Ex. SNCR00011, Southern Post-Hearing Response; Ex. NRC000015, Staff Post-Hearing Response.

Martinez-Navedo, Om Chopra, Eric Lee, Michael Shinn, Bruce Musico, Juan Peralta, Craig Erlanger, and Mallecia Sutton. Other witnesses were available to respond to our questions on an as-needed basis.

To provide context for the application, the first panels provided an overview that included information on the status of the AP1000 design certification amendment, and on the ESP and LWA issued in 2009. In our decision today, we do not revisit the safety and environmental findings made by the Board in connection with the previously granted ESP and LWA. We also do not delve into AP1000 design issues, which are subject to formal rulemaking processes, except for areas of interface between the AP1000 design and Vogtle site-specific characteristics.

1. Overview Panels

a. Southern

Southern's witnesses provided a general overview of the Vogtle construction program. Southern began excavations for the foundations of the nuclear islands and the turbine buildings in 2009. After the NRC issued the ESP, which included the first LWA, Southern began the activities authorized under that LWA: placement of engineered backfill, construction of the nuclear island mudmats, construction of mechanically-stabilized earth retaining walls, and application of the waterproof membrane.⁵⁷ Southern described the development of the Vogtle COL application, and the application's role as the reference COL application for the AP1000 fleet,⁵⁸ and briefly previewed the

⁵⁷ Tr. at 21.

⁵⁸ *Id.* at 23-26.

information it would provide in its other presentations.⁵⁹ Southern confirmed that it and its partner NuStart, together with contractors, “expended several hundred thousand man hours to develop the application and support its review by the NRC [S]taff since 2005.”⁶⁰

We asked questions regarding the interface between the COL and the additional LWA application review processes, and Southern’s construction schedule. Southern explained its perspective that construction continuity, and thus “personnel safety and nuclear quality,” would benefit from prompt issuance of the LWAs.⁶¹ We also asked about the linkage between the LWAs and the AP1000 design certification amendment. Southern explained that the activities included in the LWAs depend on approval of the AP1000 design certification amendment.⁶²

In response to questions regarding its intentions for using the preliminary acceptability review (PAR) process for changes during construction that is under development,⁶³ Southern stated that it does not expect to use that process initially. Southern indicated that the specific changes it currently has under consideration fall instead within the guidance provided in COL Interim Staff Guidance document 11 (ISG-11).⁶⁴ On the other hand, Southern’s witness added, after construction starts, situations may arise where the PAR process will be appropriate.⁶⁵

⁵⁹ *Id.* at 26-28.

⁶⁰ *Id.* at 347 (Miller).

⁶¹ *Id.* at 29 (Miller).

⁶² *See id.* at 31.

⁶³ *See* “Interim Staff Guidance on Changes during Construction Under Part 52,” COL-ISG-025 (Draft) (ML111390385).

⁶⁴ Tr. at 36-37. *See* “Interim Staff Guidance, Finalizing Licensing-basis Information,” DC/COL-ISG-011 (Nov. 2, 2009) (ML092890623) (clarifying the Staff’s position on (continued . . .))

b. Staff

We asked the Staff panel to provide an overview specifically including:

[S]tatus of AP1000 design certification amendment, summary of key safety information associated with the AP1000 design certification, use of design centered review approach for the AP1000 COLs, relationship to the review for the [ESP] and LWA issued in 2009, status of the second LWA request, and summary of regulatory findings. The [S]taff should also discuss how it analyzed deviations and exemptions.⁶⁶

The Staff opened its presentation by describing the scale of its review of the Vogtle COL application. The Staff's review began in the first half of 2008, when Southern submitted its application, and continued through August 2011. The Staff stated that it spent approximately 26,000 hours on its safety review and 5,000 hours on its environmental review, employing well over one hundred scientists, engineers, and technical specialists in the process. Technical support contractors, under Staff supervision, provided approximately 8,000 hours to the review effort. The Staff conducted more than sixty public meetings and conference calls in support of its review, and required Southern to respond to over 500 questions, including 460 safety-related questions and seventy questions on environmental issues. In addition, the Staff received and considered over 300 comments on its draft supplemental environmental impact statement (DSEIS).⁶⁷

applicants' "freeze point," that is, the point where licensing-basis information is considered final for review purposes, and the control of licensing-basis information during and after the initial review of applications for design certification or COLs).

⁶⁵ Tr. at 37.

⁶⁶ Revised Scheduling Note at 2 (unnumbered).

⁶⁷ Tr. at 41-42.

The Staff explained that the COL application incorporates by reference the AP1000 design certification rule, contained in 10 C.F.R. Part 52, Appendix D, as well as Revision 19 to the DCD. The COL application also incorporates by reference the ESP and the first LWA.⁶⁸ As a result, the Staff's review did not address issues resolved in connection with either the ESP or the AP1000 certified design. Instead, the Staff's safety review concentrated on site-specific issues like "[COL] information items, design information, replacing conceptual design information and programmatic elements that are the responsibility of the applicant."⁶⁹ The Staff's environmental review was limited to identifying new information, developed since preparation of the ESP FEIS, and evaluating its significance.⁷⁰

Another area of importance for this particular COL application, as the Staff explained, is its status as the reference COL application, consistent with the NRC's design-centered review approach to the AP1000 COL reviews.⁷¹ The Vogtle COL application contains standard content that future COL applicants using the AP1000 design may choose to incorporate by reference. Those future applicants will be able to

⁶⁸ *Id.* at 43. The Staff explained that it granted three amendments to the ESP, related to the sources and categories of the backfill material used for the nuclear island foundation, during the course of its review of the COL application. See Ex. NRC000003, Staff Testimony, at 4; Tr. at 43-44.

⁶⁹ Tr. at 44-45 (Akstulewicz).

⁷⁰ *Id.* at 45.

⁷¹ Under the "design-centered review approach," the NRC uses, to the maximum extent practical, a "one issue, one review, one position" strategy to promote effective use of resources for performing reviews, and to optimize application review schedules. In particular, "the [S]taff will conduct one technical review for each reactor design issue and use this one decision to support the decision on a [design certification] and on multiple COL applications." NRC Regulatory Issue Summary 2006-06, "New Reactor Standardization Needed to Support the Design-Centered Licensing Review Approach" (May 31, 2006), at 1 (ML053540251).

rely on the review of these standard content items completed by the Staff for this reference COL application.⁷²

The Vogtle COL application did not start out as the reference application for the AP1000 design. That distinction initially belonged to the Tennessee Valley Authority's Bellefonte COL application.⁷³ As a result, parts of the Staff's standard review were performed in connection with the Bellefonte application. The Staff transitioned this standard review from the Bellefonte application to the Vogtle application after it issued its Bellefonte safety evaluation with open items. Information in certain areas of the two applications was similar, in accordance with the level of standardization needed to support the design-centered review approach. The Staff determined that this information would be similar for all of the AP1000 applications, and that the evaluation of standard content performed for the Bellefonte application was directly applicable to the review of the Vogtle application.⁷⁴

The Staff concluded the safety portion of its overview presentation by reviewing the required findings for COL and LWA issuance, and the findings it made, that led to its conclusion that the COL and the second LWA should be granted. The Staff summarized the support for its findings, which it previously documented in its testimony.⁷⁵

The Staff explained that it initiated its environmental review of the COL application by publishing in the *Federal Register* a Notice of Intent to prepare a

⁷² Tr. at 45. Standard content material is specifically identified in both Ex. NRC000001, Vogtle Electric Generating Plant, Units 3 & 4, COL Application, Part 2, "Final Safety Analysis Report" (FSAR) and Ex. NRC000004, COL FSER. *Id.*

⁷³ Tr. at 45.

⁷⁴ *Id.* at 47.

⁷⁵ *Id.* at 48-51. See Ex. NRC000003, Staff Testimony, at 24-27, 30-31.

supplemental EIS; the notice explained that the analysis would be performed in the same manner as for the ESP EIS, except that a formal scoping process would not be conducted.⁷⁶ The Staff stated that it contacted federal, state, tribal, and local agencies, and conducted two detailed site audits, to obtain information on new and potentially significant information related to the proposed action.⁷⁷ The DSEIS was published in September 2010; a public meeting followed in October 2010.⁷⁸ Comments received, and the Staff's responses to these comments, were incorporated into Appendix E of the FSEIS, which was issued in March 2011.⁷⁹

The Staff concluded in the FSEIS that the COL and LWA should be issued.⁸⁰ The Staff concluded its environmental overview presentation by summarizing the findings it made to reach this conclusion, as well as the support it relied on for making these findings.⁸¹

⁷⁶ Tr. at 52. See Southern Nuclear Operating Company Vogtle Electric Generating Plant, Units 3 and 4 Combined License Application; Notice of Intent to Prepare a Supplemental Environmental Impact Statement, 74 Fed. Reg. 49,407 (Sept. 28, 2009).

⁷⁷ Tr. at 52.

⁷⁸ *Id.*

⁷⁹ *Id.* See Southern Nuclear Operating Company, Inc.; Notice of Availability of the Final Supplemental Environmental Impact Statement for Vogtle Electric Generating Plant Units 3 and 4; Combined License Application Review, 76 Fed. Reg. 16,645 (Mar. 24, 2011).

⁸⁰ Tr. at 53. See Ex. NRC000006, "Final Supplemental Environmental Impact Statement for Combined Licenses (COLs) for Vogtle Electric Generating Plant Units 3 and 4, Final Report," NUREG-1947 (Mar. 2011), § 11.7, at 11-6.

⁸¹ Tr. at 53-56. See Ex. NRC000003, Staff Testimony, at 28-30, 31-32.

The Staff's overview presentation ended with a brief status update, provided solely for context, of AP1000 rulemaking activities.⁸²

We asked whether the Staff considered the events at Fukushima Dai-ichi to be "new and significant" information for NEPA purposes.⁸³ In this respect, the Near-Term Task Force stated: "The current [U.S.] regulatory approach, and more importantly, the resultant plant capabilities, allow the Task Force to conclude that a sequence of events like the Fukushima accident is unlikely to occur in the United States and some appropriate mitigation measures have been implemented, reducing the likelihood of core damage and radiological releases. Therefore, continued operation and continued licensing activities do not pose an imminent risk to public health and safety."⁸⁴ Based on this assessment, the Staff stated that it did not consider the events in its supplemental NEPA review.⁸⁵ The Staff further stated that it was awaiting the conclusion of the agency's ongoing evaluations and would apply any new requirements developed from those evaluations, whether safety or environmental in nature.⁸⁶ The Staff emphasized that the AP1000 design certification and the Vogtle COL application satisfy current requirements, and that the agency has processes in place to apply final actions that the

⁸² Tr. at 56-57.

⁸³ *Id.* at 57-58.

⁸⁴ "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), at vii (Near-Term Report) (transmitted to the Commission via Commission Paper SECY-11-0093, "Near-Term Report and Recommendations for Agency Actions Following the Events in Japan" (July 12, 2011) (ML11186A950) (package)

⁸⁵ Tr. at 58. *See generally* Near-Term Report at 71-72.

⁸⁶ Tr. at 58.

Commission might take with respect to long-term recommendations for reactor designs or COLs, as appropriate.⁸⁷

We asked how COL information items are incorporated—whether as commitments or license conditions. The Staff indicated that the answer depended upon the specifics of the information item. We requested a follow-up response indicating the breakdown of how COL items were resolved.⁸⁸ As part of its follow up, the Staff provided a table indicating the status of each COL information item: either “resolved,” “FSAR commitment,” “license condition,” or “ITAAC [inspections, tests, analyses, and acceptance criteria].”⁸⁹ The Staff stated that none of these deferred the receipt of information necessary to the Staff’s findings supporting issuance of the COL.⁹⁰

We also asked about the interface between changes during construction, including those done using the PAR process, and inspections, particularly with respect to how inspectors will know what changes are expected to occur or have occurred. The Staff indicated that one benefit of the PAR process is that it will know the things that the licensee wants to change ahead of time and will, therefore, have advance notice about things that would impact the inspection program. The Staff also explained that there is a regulatory requirement to update the FSAR so that the agency is aware of changes that are made that do not require prior NRC approval.⁹¹

⁸⁷ *Id.* at 71.

⁸⁸ *Id.* at 58-60.

⁸⁹ Ex. NRC000015, Staff Post-Hearing Response, at 13 (Question 3); *id.* at 29-37, identified as Staff Table 1.

⁹⁰ *Id.* at 13 (Question 3).

⁹¹ Tr. at 72-74. See generally 10 C.F.R. § 52.98(c); 10 C.F.R. pt. 52, app. D, § VIII B.5.b; 10 C.F.R. § 50.71(e).

2. **Safety Panel 1**

We directed Safety Panel 1 to discuss relevant sections of the COL application and the following chapters of the COL FSER:

- Chapter 1, “Introduction and Interfaces,” including novel issues associated with licenses for byproduct, source and special nuclear material.
- Chapter 2, “Site Characteristics,” including overview of information incorporated by reference from the ESP.
- Chapter 3, “Design of Structures, Components, Equipment and Systems,” including waterproofing membrane departure and key safety information incorporated by reference from the AP1000 design certification (e.g., shield building redesign and containment pressure relief system).⁹²

a. *Introduction and Interfaces*

Southern explained that the COL application included a request for licenses, pursuant to 10 C.F.R. Parts 30, 40, and 70, to allow the “receipt, possession, and use of by-product, source, and special nuclear material,” but that Part 52 did not include specific guidance identifying the information that should be provided.⁹³ During the course of the Staff’s review, Southern responded to a series of requests for additional information related to the materials licenses. For some of these requests, Southern stated that it was able to direct the Staff to other portions of the application. For others, Southern supplied new information. For example, Southern supplied descriptions of programs to satisfy the requirements for: control and accounting of special nuclear material; new fuel receipt and storage before an operational storage area is established;

⁹² Revised Scheduling Note at 2 (unnumbered).

⁹³ Tr. at 84 (Sparkman).

and transfer of control of new fuel to a qualified shipper in the event of a return to the manufacturer.⁹⁴

As part of its discussion of Chapter 1, the Staff stated that it evaluated and approved three exemptions from the NRC's regulations: 10 C.F.R. Part 52, Appendix D, § IV.A.2 (COL application organization and numbering); 10 C.F.R. § 52.93(a)(1) (exemption criteria); and 10 C.F.R. §§ 70.22(b), 70.32(c), 74.31, 74.41, and 74.51 (special nuclear material control and accounting (MC&A) program description).⁹⁵ The Staff evaluated six proposed departures from AP1000 DCD Revision 19: an administrative departure for organization and numbering of the FSAR; mudmat thickness; waterproofing membrane material; class 1E voltage regulating transformer current limiting features; potable water system filtration; and emergency response facility locations.⁹⁶

The Staff also evaluated six requested variances from the ESP: three variances corresponding to areas where the COL application incorporates AP1000 DCD Revision 19 rather than Revision 15 (as in the ESP); a variance that provides for updated site layout information, including relocation of the technical support center; a variance that provides for updated information regarding hazardous chemicals in the site vicinity; and a variance that provides for updated climatological data.⁹⁷

⁹⁴ *Id.* at 85.

⁹⁵ *Id.* at 93, referring to Ex. NRCR00010, Safety Panel 1, Staff Slide 7. *See also* Ex. NRC000003, Staff Testimony, at 12.

⁹⁶ Tr. at 93, referring to Ex. NRCR00010, Safety Panel 1, Staff Slide 8. *See also* Ex. NRC000003, Staff Testimony, at 13-15.

⁹⁷ Tr. at 93, referring to Ex. NRCR00010, Safety Panel 1, Staff Slide 9. *See also* Ex. NRC000003, Staff Testimony, at 16.

The Staff next summarized its review of Southern's financial and technical qualifications.⁹⁸ In response to questions, the Staff explained that Southern is required to select its decommissioning funding assurance mechanism—e.g., sinking fund, prepayment, parent company guarantee—and provide the proper certification for that mechanism prior to fuel load.⁹⁹ The Staff later confirmed and amplified this answer. Southern is required to submit a report after the COLs are issued and no later than thirty days after the NRC publishes notice of intended operation in the *Federal Register*.¹⁰⁰ The Staff explained that this report will certify the amount of financial assurance for decommissioning that is provided and will include a copy of the financial instrument that will be used.¹⁰¹

In connection with its evaluation of Southern's technical qualifications to hold a Part 52 license,¹⁰² the Staff explained that an applicant's status as a current power reactor licensee generally provides the necessary support for the Staff's finding that the applicant is technically qualified for a new license.¹⁰³ The Staff explained that if it found problems material to an applicant's qualifications during the course of its review of the application, then it might conduct further review before reaching its conclusion on the

⁹⁸ Tr. at 94-95.

⁹⁹ *Id.* at 120-21.

¹⁰⁰ Ex. NRC000015, Staff Post-Hearing Response, at 2 (Item C) (referencing 10 C.F.R. §§ 50.75(e)(3) and 52.103(a)).

¹⁰¹ Ex. NRC000015, Staff Post-Hearing Response, at 2 (Item C).

¹⁰² See Ex. NRC000004, COL FSER, § 1.5; 10 C.F.R. § 52.97(a)(1)(iv).

¹⁰³ Ex. NRC000015, Staff Post-Hearing Response, at 2 (Item D).

technical qualification issue.¹⁰⁴ The Staff explained further that this approach is consistent with past treatment of the adequacy or “integrity” of an entity’s corporate organization or management, “confirming that issues such as past violations of NRC regulations would indicate a deficiency in an application only if they are directly germane to the licensing action, rather than being of simply historical interest.”¹⁰⁵

The Staff discussed in detail its evaluation of the special nuclear MC&A program description exemption identified above as the third requested exemption from NRC regulations.¹⁰⁶ In response to a question, the Staff confirmed that this exemption was in essence an administrative exemption intended to treat Part 52 applicants and licensees in the same manner as Part 50 applicants and licensees, and that the affected program activities do not relate to operation of the nuclear power plant itself.¹⁰⁷

The Staff also discussed details of Southern’s physical security plan.¹⁰⁸ Southern provided extensive details on the security measures it is implementing to ensure physical security at the site during construction.¹⁰⁹ Each new unit will transition to 10 C.F.R. § 73.55 security standards before fuel load.¹¹⁰

¹⁰⁴ *Id.*

¹⁰⁵ *Id.* at 2-3 (Item D) (citing *Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Units 2 and 3), CLI-01-24, 54 NRC 349, 365 (2001); *Georgia Institute of Technology* (Georgia Tech Research Reactor), CLI-95-12, 42 NRC 111, 120 (1995); *USEC, Inc.* (American Centrifuge Plant), LBP-05-28, 62 NRC 585, 618-19 (2005)).

¹⁰⁶ Tr. at 95-102.

¹⁰⁷ *Id.* at 124.

¹⁰⁸ *Id.* at 102-03.

¹⁰⁹ See Ex. SNCR00011, Southern Post-Hearing Response, at 8-11 (Question 8).

¹¹⁰ *Id.* at 10 (Question 8).

b. Site Characteristics

In connection with Chapter 2, Southern explained that three site characteristics were not fully resolved at the ESP stage: maximum and minimal normal air temperatures; atmospheric dispersion values; and local intense precipitation.¹¹¹ In addition, one seismic parameter was supplemented at the COL stage “to provide a more detailed evaluation demonstrating [that] the in-structure response spectra [are] bounded by the DCD’s certified seismic design response spectra”¹¹²

In connection with the “local intense precipitation” issue, the Staff explained that the point of this analysis is to verify that drainage ditches can handle potential rainfall and move the water away from site structures.¹¹³ In terms of methodology, the Staff indicated that it made “an independent determination of the depth of rainfall and . . . used the applicant’s hydraulic model . . . as [a] baseline.”¹¹⁴ The Staff checked and verified the model, applied different parameters to the model, and tested the sensitivity of the model to assess the validity of the applicant’s conclusions.¹¹⁵

The Staff summarized its evaluation of Chapter 2, highlighting the distinction between standard content information applicable to all AP1000 COL applicants and plant-specific information.¹¹⁶ The Staff explained that it “reviewed and compared the Vogtle site-specific characteristic values presented in [the] Vogtle FSAR against the

¹¹¹ Tr. at 87-89.

¹¹² *Id.* at 89.

¹¹³ *Id.* at 129.

¹¹⁴ *Id.* at 129-30 (Caverly).

¹¹⁵ *Id.* at 130.

¹¹⁶ *Id.* at 105.

AP1000 site parameters presented in the AP1000 DCD,” and “confirmed that the AP1000 site parameters were enveloped by [the] corresponding Vogtle site characteristic values.”¹¹⁷ The Staff discussed its review of Southern’s evaluation of AP1000 standard chemicals, including potential hazards to control room habitability.¹¹⁸ The Staff explained that clarifications to the AP1000 normal temperature site parameter values made after the Vogtle ESP was issued led Southern to propose a variance from the ESP normal air temperature site values.¹¹⁹ The Staff found the variance acceptable because of the prior evaluation during the ESP review and because “the revised site values remain[ed] bounded by the AP1000 normal temperature site parameter values.”¹²⁰

c. *Chapter 3: Design of Structures, Components, Equipment and Systems*

Southern identified key DCD information incorporated by reference into the COL application. Southern noted particularly the shield building redesign and several ITAAC related to the nuclear island structures.¹²¹

The Staff provided a detailed overview of the AP1000 shield building design and its evaluation of that design. The shield building is a safety-related Seismic Category I¹²²

¹¹⁷ *Id.* at 106 (Joshi). The Staff noted one exception related to the Vogtle site’s ground motion response spectra, and indicated that this would be discussed in connection with Chapter 3. *Id.*

¹¹⁸ *Id.* at 106-07.

¹¹⁹ *Id.* at 107-08.

¹²⁰ *Id.* at 108 (Joshi).

¹²¹ *Id.* at 90.

¹²² A “Seismic Category I” structure must be designed to remain functional if the safe shutdown earthquake occurs. See Regulatory Guide 1.29, Rev. 4, “Seismic Design Classification” (Mar. 2007) (ML070310052), at 2.

structure that: provides structural and radiological shielding and protection from external events for the containment vessel; radiation shielding; support for “the passive containment cooling water storage tank”; and “natural air circulation cooling for the containment vessel.”¹²³ The shield building design was revised by Westinghouse to use steel concrete composite modules; this resulted in extensive re-analysis and testing of the building’s structural capacity, factoring in the effect of water load on the roof of the building, to resist aircraft impacts and to cope with seismic, tornado, and wind loads.¹²⁴ After comprehensive Staff review, confirmed by independent expert consultants and by the ACRS, the Staff “concluded that the AP1000 shield building design is safe and provides . . . reasonable assurance that the building will remain functional under design basis loads.”¹²⁵

The Staff explained that, to prevent a damaging external pressure load on the containment vessel, a “containment vacuum relief system was added to an existing vent line penetration.”¹²⁶ This added system “consists of redundant vacuum relief devices sized to prevent differential pressure between [the] containment and the shield building from exceeding the design value.”¹²⁷ The Staff stated that this ensures that a single failure of any relief devices would not prevent the relief flow path.¹²⁸

¹²³ Tr. at 109 (Shams).

¹²⁴ *Id.* at 109-10.

¹²⁵ *Id.* at 111-12 (Shams). *See generally* Ex. NRC000004, COL FSER, § 3.8.4.

¹²⁶ *Id.* at 112 (McGovern).

¹²⁷ *Id.* (McGovern).

¹²⁸ *Id.*

Southern briefly discussed the departure from the AP1000 DCD for the waterproofing membrane installed under the first LWA. Southern stated that the selected waterproofing option is consistent with the DCD design, although not specifically described in the DCD. Southern pointed out that the membrane is governed by “a site-specific ITAAC, which will confirm the specified coefficient of friction of 0.7.”¹²⁹ In response to a question regarding the timing and process for verifying compliance with this ITAAC, the Staff explained that Southern would produce a report documenting compliance of the waterproofing membrane with the acceptance criteria, including the 0.7 coefficient of friction. The Staff stated that inspectors visited the site to observe the actual installation, and that the documentation provided in the report was examined to verify that the waterproofing membrane satisfied the requirement.¹³⁰

The Staff also discussed this departure, noting that AP1000 DCD Revision 15 did not specify a material for the membrane and that the material selected was approved in the ESP. Revision 18, issued later, did specify a particular material that differed from that approved for the ESP. Because this is classified as “Tier 2” information, the use of a different material required a departure from the DCD.¹³¹ In response to questions, the

¹²⁹ *Id.* at 89 (Aughtman). See Ex. NRC000004, COL FSER, § 3.8.5.4, at 3-59 (the ESP ITAAC will be included as an ITAAC in the COL).

¹³⁰ Tr. at 122.

¹³¹ *Id.* at 113. “Tier 2” information is defined as:

[T]he portion of the design-related information contained in the generic DCD that is approved but not certified by this appendix (Tier 2 information). Compliance with Tier 2 information is required, but generic changes to and plant-specific departures from Tier 2 are governed by Section VIII of [Appendix D].

10 C.F.R. pt. 52, app. D, § II E.

Staff explained that while some chemical and physical properties of the two materials differ, the differences are not substantive.¹³² The Staff also explained that while the applicant stated in its application that this Tier 2 departure from the DCD did not require prior approval, the Staff reviewed this departure because it was part of the COL application.¹³³

In connection with piping, we asked the Staff to identify any commitments, programs, or license conditions that are in place to ensure that as-installed piping will match as-designed piping, so that the Staff's safety conclusions remain valid. The Staff identified two site-specific ITAAC intended to verify that the design complies with the AP1000 DCD. These two ITAAC, and two license conditions related to timing, address the piping design acceptance criteria.¹³⁴ The Staff identified two additional ITAAC, also incorporated by reference, that reconcile the as-built piping to ensure that it complies with the American Society of Mechanical Engineers (ASME) code and the NRC's regulations.¹³⁵

3. Safety Panel 2

We asked Safety Panel 2 to discuss relevant sections of the COL application and the following chapters of the COL FSER:

¹³² Tr. at 114.

¹³³ *Id.* at 114-15.

¹³⁴ Ex. NRC000015, Staff Post-Hearing Response, at 23 (Question 10). See Ex. NRC000004, COL FSER, at 3-99, Table 3.6.2-1 (Pipe Rupture Hazards Analysis ITAAC) (also at A-16); Ex. NRC000004, COL FSER, at 3-100, Table 3.12-1 (Piping Design ITAAC) (also at A-17); Ex. NRC000004, COL FSER, at A-3, License Condition 3-1; and Ex. NRC000004, COL FSER, at A-5, License Condition 3-9.

¹³⁵ Ex. NRC000015, Staff Post-Hearing Response, at 23-24 (Question 10). See *also* Ex. NRC000001, Part 2, FSAR, § 14.3.3.3 at 14.3-4.

- Chapter 3 continuation, including the following COL review topics: Analysis of soil structure interaction, the second LWA request, and the [ACRS's] recommendation regarding inservice testing and inservice inspection for squib valves from the ACRS letter report on the Vogtle COL application.
- Chapter 6, "Engineered Safety Features," an overview of the contents of the license application and the [S]taff's review and regulatory conclusions, including key safety information incorporated by reference from the AP1000 design certification. This discussion will also address the ACRS recommendations on the Vogtle COL with respect to the containment cleanliness program, and control room habitability from a toxic gas perspective.¹³⁶

a. *Chapter 3 Continuation: Soil Structure, Second LWA Request, Squib Valves*

Southern described the site-specific soil structure interaction (SSI) analyses performed during the ESP and COL stages.¹³⁷ For the COL application, Southern performed a 3-D analysis, including lower-bound, upper-bound, and best estimate site-specific soil profiles, to provide a direct comparison to the AP1000 design envelope and in-structure response spectra.¹³⁸ Southern concluded that the Vogtle site-specific seismic demand "is enveloped by the AP1000 standard seismic demand used for the design and therefore satisfied the [T]ier [1] requirement for seismic ground motion."¹³⁹

The Staff performed a detailed review of Southern's modeling approach and its input parameters and determined that Southern's analysis conformed to the Standard Review Plan guidance.¹⁴⁰ The Staff's comparisons of Southern's in-structure response

¹³⁶ Revised Scheduling Note at 3 (unnumbered).

¹³⁷ Tr. at 134-35.

¹³⁸ *Id.* at 135.

¹³⁹ *Id.* at 135-36 (Moore).

¹⁴⁰ See generally "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition" (NUREG-0800, formerly issued as NUREG-75/087), § 3.8.5 (June 1996) (May 2010 for this section of NUREG-0800).

spectra at the key locations “showed that above one [h]ertz [(Hz)] there were no exceedances [from] the standard design.”¹⁴¹ The Staff found that “below one [Hz] there were exceedances in the 0.55 [Hz] range” but “found that these exceedances were not significant because there were no AP1000 structure[s,] systems or components with resonant frequencies in this range.”¹⁴² The Staff also described its methodology for evaluating the justification Southern provided to ensure that the AP1000 design was not compromised by the exceedances.¹⁴³

The Staff explained that even though the Vogtle ground motion response spectra exceeded the AP1000 certified seismic design response spectra above the 10 Hz point, this was not a concern. The AP1000 DCD provides a process for site-specific analysis of identified exceedances. This exceedance was in the free field—at Vogtle, the nuclear island functions as a massive vibration absorber with the result that very little energy is released into the structures, systems, and components at frequencies above 10 Hz.¹⁴⁴ When the response spectra are compared, the site-specific results are “clearly enveloped by [the] standard design by a factor of almost two to three in most locations.”¹⁴⁵ The standard design also has margin over the AP1000’s certified seismic design response spectra, and if the Vogtle site is compared to a site with no exceedances, the relative reduction in margin would be very small.¹⁴⁶

¹⁴¹ Tr. at 142 (Tegeler).

¹⁴² *Id.* (Tegeler).

¹⁴³ See Ex. NRC000015, Staff Post-Hearing Response, at 24-25 (Question 11).

¹⁴⁴ Tr. at 172-73.

¹⁴⁵ *Id.* at 173 (Tegeler).

¹⁴⁶ *Id.*

The Staff explained that it also reviewed Southern's decision to use four percent, instead of five percent, for structural damping in the model, and confirmed that four percent "was representative of the predicted levels of stress and strain."¹⁴⁷ Additionally, four percent is more conservative than five percent because four percent "credit[s] less energy dissipation in the structural mechanical system . . . [and] using lower values of damping [yields] . . . a slightly higher response."¹⁴⁸ The Staff verified that changes to the AP1000 design, including changes to the shield building design, were reflected in the modeling. The Staff concluded that the AP1000 design was adequate, from a structural perspective, for use at the Vogtle site.¹⁴⁹

In response to a question about the Staff's process for validating a 3-D model like the model Southern used to perform its 3-D SSI analysis, the Staff explained that it made a direct comparison between Southern's model and the model used for the AP1000 standard design. The Staff directed Southern to perform additional evaluations using its model with the same base motion input values used for the AP1000 standard design model. The results generated by Southern's model using these input values closely matched the results of the AP1000 standard design at six key locations. As a result, the Staff concluded that Southern's model adequately represented the AP1000 design. The Staff explained that as part of its evaluation of Southern's model, it also looked at other metrics as part of its validation process, such as "total model mass,

¹⁴⁷ *Id.* at 142 (Tegeler).

¹⁴⁸ *Id.* at 168 (Tegeler).

¹⁴⁹ *Id.* at 143.

frequency response, element properties with respect to material properties and element types.”¹⁵⁰

Southern stated that the second LWA seeks authorization to perform safety-related work, specifically, the “installation of reinforcing steel, sumps[,] and drain lines and other embedded items in the nuclear island foundation base mat and placement of concrete for the nuclear island foundation base slab.”¹⁵¹ The Staff explained that it assessed the LWA using NUREG-0800 § 3.85.¹⁵² The Staff accepted Southern’s “proposal based on the DCD commitment to use [American Concrete Institute standard] ACI 349 for the design of the base slab and the finding that the standard plant design is acceptable for Vogtle.”¹⁵³ Based on Southern’s commitment, and on the site-specific seismic analysis, the Staff found “that there is reasonable assurance that the base slabs will have adequate strength, stiffness[,] and ductility under the Vogtle seismic demands.”¹⁵⁴

Both the Staff and Southern provided an extensive discussion of “squib valves.” Squib valves are “explosive actuated valves . . . [used] in the [AP1000] automatic

¹⁵⁰ *Id.* at 165 (Tegeler). The Staff also explained why certain technical and software quality assurance concerns raised by the Defense Nuclear Facilities Safety Board (DNFSB) in connection with DOE construction projects have no safety significance here. See Ex. NRC000015, Staff Post-Hearing Response, at 22-23 (Question 9). Among other evidence, the Staff noted that “[s]purious results indicated by abrupt changes in the response spectra, indicative of the behavior cited in the DNFSB letter, were not observed” in the Vogtle seismic demand modeling. *Id.* at 23. See also Ex. SNC000011, Southern Post-Hearing Response, at 11-13 (Question 9).

¹⁵¹ Tr. at 136 (Sparkman).

¹⁵² *Id.* at 144.

¹⁵³ *Id.* (Tegeler).

¹⁵⁴ *Id.* (Tegeler).

depressurization system to reduce reactor pressure . . . in the event of a loss of [coolant] accident.”¹⁵⁵ Squib valves also are used as part of the passive core cooling system for the purpose of injecting cooling water into the reactor vessel, “for natural recirculation [from] the containment sump to the reactor cooling system, and to increase the containment water level if necessary in the event of a severe accident.”¹⁵⁶ Southern stated that the design and qualification of the squib valves is an AP1000 DCD element incorporated by reference into the COL application.¹⁵⁷ The squib valves are subject to ITAAC specified in Tier 1 of the AP1000 DCD. The ITAAC require testing of squib valves to demonstrate operational capability under design conditions.¹⁵⁸

The ACRS expressed concerns about the inspection and testing program for these squib valves and recommended that “a regulatory requirement be established[,] focused on the development of the [inservice inspection/inservice testing] program, including a review of the lessons-learned from the valve design and qualification process.”¹⁵⁹ The ACRS stated that “[p]eriodic removal and firing of the explosive charge that initiates operation of the valve may not be sufficient for these critical components.”¹⁶⁰ To address concerns raised by the ACRS, Southern stated that the inservice testing (IST) program for the squib valves will integrate lessons-learned from the design and qualification process to maintain reasonable assurance that the squib

¹⁵⁵ *Id.* (Scarborough).

¹⁵⁶ *Id.* at 144-45 (Scarborough).

¹⁵⁷ *Id.* at 137.

¹⁵⁸ *Id.* at 145.

¹⁵⁹ ACRS Letter at 3.

¹⁶⁰ *Id.*

valves are operationally ready to perform their safety functions.¹⁶¹ The Staff is monitoring the squib valve design and qualification process, has observed the valve vendor's prototype testing, and is scrutinizing the development of surveillance provisions, including inservice testing and internal inspections.¹⁶² The Staff explained that it will conduct pre-start-up inspections to verify that the squib valves can perform their safety functions, as part of the closure process for the ITAAC.¹⁶³

We questioned this explanation because the squib valve inspection program has not been finalized. The inspection program is contingent on an ASME code provision that is still under development.¹⁶⁴ Although the Staff conceded that the current version of the code is insufficient,¹⁶⁵ the Staff reached its 10 C.F.R. § 52.97 reasonable assurance finding based on the following.

The Staff explained that specific testing, inservice inspection, and surveillance plans could be developed now, but it would be more effective and practical to wait until after the ASME code development effort, the industry's ongoing development of surveillance requirements, and the testing program scheduled for 2012, are complete.¹⁶⁶ We asked two post-hearing questions related to squib valves. First, we asked the Staff to explain the relevance of the findings that will be made pursuant to the inspection of the operational testing program that will be conducted prior to fuel load, and any NRC

¹⁶¹ Tr. at 137-38.

¹⁶² *Id.* at 145-46.

¹⁶³ *Id.* at 146.

¹⁶⁴ *Id.* at 161-62.

¹⁶⁵ *Id.* at 162.

¹⁶⁶ *Id.* at 175-76.

decision regarding operation of the plant, including the regulatory basis for actions under 10 C.F.R. § 52.103. Second, we asked the Staff to provide reasons for not including a finalized testing process now, as well as the basis for nonetheless concluding that the Staff's approach complies with 10 C.F.R. § 52.97.¹⁶⁷

In its response to the post-hearing questions, the Staff cited several references, including Commission papers, Staff requirements memoranda, and NRC Inspection Manual Chapter 2504 that, according to the Staff, require it to perform inspections of operational programs before fuel load.¹⁶⁸ The Staff stated that its evaluation of Southern's squib valve inservice testing program is "consistent with [the] approach" in these references "for the review, implementation, and inspection of operational programs."¹⁶⁹ The Staff also explained the bases for its present conclusion "that there is reasonable assurance of the operational readiness of [the] squib valves to perform their safety functions."¹⁷⁰ First, the Staff observed that 10 C.F.R. § 50.55a requires applicants to implement the edition and addendum of the ASME *Code for Operation and Maintenance of Nuclear Plants* (OM Code) that is incorporated by reference in 10 C.F.R.

¹⁶⁷ See Post-Hearing Order at 3 (Questions 5a and 5b).

¹⁶⁸ Ex. NRC000015, Staff Post-Hearing Response, at 16 (Question 5a) (citing "Review of Operational Programs in a Combined License Application and Generic Emergency Planning Inspections, Tests, Analyses, and Acceptance Criteria," Commission Paper SECY-05-0197 (Oct. 28, 2005); Staff Requirements – SECY-02-0067 – Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) for Operational Programs (Programmatic ITAAC) (Sept. 11, 2002); Inspection Manual Chapter 2504, "Construction Inspection Program—Inspection of Construction and Operational Programs," especially § 08.02.e, "Confirmation of Operational Programs" (Oct. 15, 2009); and Staff Requirements – SECY-04-0032 – Programmatic Information Needed for Approval of a Combined License Without Inspections, Tests, Analyses[,] and Acceptance Criteria (May 14, 2004)).

¹⁶⁹ Ex. NRC000015, Staff Post-Hearing Response, at 16 (Question 5a).

¹⁷⁰ *Id.* at 17 (Question 5a).

§ 50.55a twelve months before fuel loading.¹⁷¹ The Staff explained that the IST operational program described in the Vogtle FSAR is based on the currently-incorporated ASME OM Code (2001 Edition through the 2003 Addenda, which includes provisions for IST surveillance of explosive-actuated valves for current operating plants).¹⁷² The Staff is also working on a proposed rule to incorporate by reference into § 50.55a the 2011 addenda to the ASME OM Code. The proposed rule also would specify additional squib valve surveillance requirements—not otherwise included in the 2011 addenda—based on lessons learned at that time from the squib valve design and qualification process.¹⁷³ In parallel, the ASME is working on additional OM Code updates; the Staff is participating in that effort, which could lead to additional rulemakings in the future.¹⁷⁴

Second, the Staff noted that the FSAR description of the inservice testing program states that the program will incorporate lessons learned during the design and qualification process for these valves.¹⁷⁵ Therefore, according to the Staff, while it has confidence at this time that the relevant requirements will be prescribed by rulemaking, the Vogtle FSAR commitment provides sufficient regulatory control to ensure that the

¹⁷¹ *Id.* at 16-17 (Question 5a).

¹⁷² *Id.* at 17 (Question 5b).

¹⁷³ *Id.* at 18 (Question 5b).

¹⁷⁴ *Id.* at 18-19 (Question 5b). Such rules, if implemented, might remove some of the additional squib valve surveillance requirements that will be part of the Staff's proposed rule now, provided the ASME OM Code is revised to cover these requirements. *Id.* at 19.

¹⁷⁵ *Id.* at 16-17 (Question 5a).

IST program for squib valves will provide reasonable assurance even if the rulemaking is still in progress.¹⁷⁶

Further, other factors led the Staff to have reasonable assurance that the squib valves will be operationally ready to perform their intended function. First, any change to the IST program for squib valves as described in the FSAR would likely require a license amendment.¹⁷⁷ In that case, the NRC Staff would have an opportunity to review the changes to the IST requirements for squib valves. Second, if the IST program for the squib valves ultimately is found to be insufficient, the Staff indicated that it can take enforcement action to prohibit or delay fuel load.¹⁷⁸ Alternatively, the NRC could require modifications to the inservice testing program pursuant to the compliance backfit provisions of 10 C.F.R. § 50.109(a)(4)(i).¹⁷⁹ Third, the Staff stated that it is planning to conduct a vendor inspection to evaluate the design and qualification process.¹⁸⁰ Finally, the Staff reiterated that it will conduct ITAAC inspections of squib valves as part of its ITAAC closure process before the Commission confirms that all ITAAC are completed and issues its 10 C.F.R. § 52.103(g) finding prior to fuel load and operation.¹⁸¹ Therefore, based upon the totality of the reasons explained above, including the FSAR commitment that the inservice test and inspection program for the squib valves will

¹⁷⁶ *Id.* at 19 (Question 5b).

¹⁷⁷ *Id.* at 18 (Question 5b).

¹⁷⁸ *Id.* at 17 (Question 5a).

¹⁷⁹ *Id.* (Question 5a).

¹⁸⁰ *Id.* (Question 5b).

¹⁸¹ *Id.* (Question 5b).

incorporate the lessons learned during the design and qualification process, the Staff was able to reach its 10 C.F.R. § 52.97 reasonable assurance finding on this issue.¹⁸²

Although we find that the Staff's review of the squib valve issues was rigorous, we have a concern similar to that initially raised by the ACRS regarding the status of the inservice inspection/inservice testing program for this component. As such, we find that including a license condition directing the implementation of a surveillance program, with the requirements described below, prior to fuel load, is appropriate.¹⁸³ We therefore impose the following condition on the licenses for Units 3 and 4:

Before initial fuel load, the licensee shall implement a surveillance program for explosively actuated valves (squib valves) that includes the following provisions in addition to the requirements specified in the edition of the ASME *Code for Operation and Maintenance of Nuclear Power Plants* (OM Code) as incorporated by reference in 10 CFR 50.55a.

a. Preservice Testing

All explosively actuated valves shall be preservice tested by verifying the operational readiness of the actuation logic and associated electrical circuits for each explosively actuated valve with its pyrotechnic charge removed from the valve. This must include confirmation that sufficient electrical parameters (voltage, current, resistance) are available at the explosively actuated valve from each circuit that is relied upon to actuate the valve. In addition, a sample of at least 20% of the pyrotechnic charges in all explosively actuated valves shall be tested in the valve or a qualified test fixture to confirm the capability of each sampled pyrotechnic charge to provide the necessary motive force to operate the valve to perform its intended function without damage to the valve body or connected piping. The sampling must select at least one explosively actuated valve from each redundant safety train. Corrective action shall be taken to resolve any deficiencies identified in the operational readiness of the actuation logic or associated electrical circuits, or the capability of a pyrotechnic charge. If a charge fails to fire or its capability is not confirmed, all charges with the same batch number shall be removed, discarded, and replaced with charges from a different batch number that has demonstrated successful 20% sampling of the charges.

¹⁸² *Id.* at 19-20 (Question 5b).

¹⁸³ See *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-00-13, 52 NRC 23, 29-31 (2000).

b. Operational Surveillance

Explosively actuated valves shall be subject to the following surveillance activities after commencing plant operation:

- (1) At least once every 2 years, each explosively actuated valve shall undergo visual external examination and remote internal examination (including evaluation and removal of fluids or contaminants that may interfere with operation of the valve) to verify the operational readiness of the valve and its actuator. This examination shall also verify the appropriate position of the internal actuating mechanism and proper operation of remote position indicators. Corrective action shall be taken to resolve any deficiencies identified during the examination with post-maintenance testing conducted that satisfies the preservice testing requirements.
- (2) At least once every 10 years, each explosively actuated valve shall be disassembled for internal examination of the valve and actuator to verify the operational readiness of the valve assembly and the integrity of individual components and to remove any foreign material, fluid, or corrosion. The examination schedule shall provide for both of the two valve designs used for explosively actuated valves at the facility to be included among the explosively actuated valves to be disassembled and examined every 2 years. Corrective action shall be taken to resolve any deficiencies identified during the examination with post-maintenance testing conducted that satisfies the preservice testing requirements.
- (3) For explosively actuated valves selected for test sampling every 2 years in accordance with the ASME OM Code, the operational readiness of the actuation logic and associated electrical circuits shall be verified for each sampled explosively actuated valve following removal of its charge. This must include confirmation that sufficient electrical parameters (voltage, current, resistance) are available for each valve actuation circuit. Corrective action shall be taken to resolve any deficiencies identified in the actuation logic or associated electrical circuits.
- (4) For explosively actuated valves selected for test sampling every 2 years in accordance with the ASME OM Code, the sampling must select at least one explosively actuated valve from each redundant safety train. Each sampled pyrotechnic charge shall be tested in the valve or a qualified test fixture to confirm the capability of the charge to provide the necessary motive force to operate the valve to perform its intended function without damage to the valve body or connected piping. Corrective action shall be taken to resolve any deficiencies identified in the capability of a pyrotechnic charge in accordance with the preservice testing requirements.

This license condition shall expire upon (1) incorporation of the above surveillance provisions for explosively actuated valves into the facility's inservice testing program, or (2) incorporation of inservice testing requirements for explosively actuated valves in new reactors (i.e., plants receiving a construction permit, or combined license for construction and operation, after January 1, 2000) to be specified in a future edition of the ASME OM

Code as incorporated by reference in 10 CFR 50.55a, including any conditions imposed by the NRC, into the facility's inservice testing program.

This license condition supplements the current requirements in the ASME OM code for explosively actuated valves, and sets forth requirements for both pre-service testing and operational surveillance, as well as any necessary corrective action. The license condition will expire when either (1) the license condition is incorporated into the Vogtle IST program; or (2) the updated ASME OM Code requirements for squib valves in new reactors, as accepted by the NRC in 10 C.F.R. § 50.55a, are incorporated into the Vogtle IST program.¹⁸⁴ For the purpose of satisfying the license condition, the licensee retains the option of including in its IST program either the requirements stated in this condition, or including updated ASME Code requirements.

We note, however, that regardless of the option chosen to satisfy the license condition, the relevant provisions of the OM Code may be subject to further revision in the future, and IST requirements for the squib valve component may change. We do not expect the IST program for squib valves necessarily to be a static one. As with any facility, the Vogtle units will be subject to our rules providing for the application of future Code revisions to operating plants; Southern ultimately may be required to comply with a later version of the OM Code, as accepted by the NRC and incorporated by reference into 10 C.F.R. §50.55a. In particular, section 50.55a(f)(4) requires that, throughout the service life of the plant, valves such as squib valves must, to the extent practical, meet the IST requirements set forth in the ASME OM Code and addenda that become effective during that time. Even in the case where Southern chooses to satisfy the

¹⁸⁴ While the proposed condition is based on a revision to the ASME OM Code currently under consideration, the Code requirements ultimately might differ from the license condition when the full ASME review process is complete.

license condition by incorporating the condition into his IST program, Southern will still be required to comply with section 50.55a(f)(4) throughout the life of the plant.

b. Engineered Safety Features

By way of background, the Staff described the AP1000 engineered safety features that are incorporated by reference in the COL application. The Staff provided details regarding the passive core cooling system, including the in-containment refueling water storage tank, passive heat exchangers, the automated depressurization system, and core make-up tanks, among other features.¹⁸⁵ The Staff discussed AP1000 design features that address Generic Issue 191 (Assessment of Debris Accumulation on PWR Sump Performance); these were part of the DCD amendment rulemaking proceeding.¹⁸⁶ The Staff reviewed the ACRS's assessment of the AP1000 design's long-term core cooling performance, including the effects of debris.¹⁸⁷ The Staff also presented details about the passive main control room emergency habitability system.¹⁸⁸

The Staff then reviewed its evaluation of two items: the containment cleanliness program and risks to control room habitability associated with the applicant's toxic gas inventory.¹⁸⁹ With respect to the first of these, the Staff explained that it found the containment cleanliness program to be consistent with applicable guidance documents. The Staff also explained that, while it agreed with the ACRS that the NRC's stringent

¹⁸⁵ Tr. at 148-52.

¹⁸⁶ *Id.* at 152-54.

¹⁸⁷ *Id.* at 153-54. See Abdel-Khalik, S., ACRS Chairman, letter to Gregory B. Jaczko, Chairman, NRC, "Long-Term Core Cooling for the Westinghouse AP1000 Pressurized Water Reactor" (Dec. 20, 2010).

¹⁸⁸ Tr. at 155-56.

¹⁸⁹ *Id.* at 156-58.

latent fiber limits should not be changed by the licensee without NRC approval, it was more appropriate to resolve this “by designating the information as Tier 2[*] in the AP1000 [DCD], rather than including [it] in the [technical specifications section] of the COL.”¹⁹⁰

We asked a series of questions about the differences, in terms of monitoring and repercussions/corrective actions, between handling this as a Tier 2* rather than a technical specification issue.¹⁹¹ Southern stated that if the containment debris limit is exceeded, the plant will be outside its design basis and would have to remain shut down until restoration of the design basis, whether the limit is treated as a technical specification, or identified as Tier 2 or Tier 2* information.¹⁹² The Staff provided a more detailed answer in its post-hearing response.¹⁹³ According to the Staff, there is no practical advantage in using a technical specification instead of the Tier 2* designation in this situation. Technical specifications and Tier 2* items are both requirements imposed on licensees, and both are subject to regulatory oversight. The timing of detecting out-of-tolerance conditions would be the same, the corrective action imposed would be basically the same, and changes to the requirement would use the same change provisions.¹⁹⁴ The Staff explained that the limit on debris “is not a process variable that

¹⁹⁰ *Id.* at 157 (McKirgan). “Tier 2*” means “the portion of the Tier 2 information, designated as such in the generic DCD, which is subject to the change process in [10 C.F.R. pt. 52, app. D, § VIII.B.6.]” 10 C.F.R. pt. 52, app. D, § II.F.

¹⁹¹ Tr. at 158-60.

¹⁹² *Id.* at 348.

¹⁹³ See Ex. NRC000015, Staff Post-Hearing Response, at 14 (Question 4). See *also id.* at 25-26 (Question 12).

¹⁹⁴ *Id.* at 14 (Question 4).

is continuously monitored and thus [it] would not benefit from additional control room attention,” which a technical specification generally would receive.¹⁹⁵ Instead, “[t]he general housekeeping or maintenance activities associated with the [containment] cleanliness program are better controlled by maintenance personnel through maintenance programs.”¹⁹⁶ The Staff also pointed out that the AP1000 design has eliminated most sources of debris, and the containment cleanliness program is directed at controlling and tracking the removal of debris inadvertently brought into the containment during maintenance.¹⁹⁷ In any event, whether debris limits are set in a technical specification or are designated as Tier 2* items, any corrective action program that might be needed down the road will be subject to inspection under the reactor oversight program.¹⁹⁸

With respect to control room habitability, the Staff evaluated Southern’s toxic chemical inventory, reviewed Southern’s analysis, and performed independent confirmatory calculations. The Staff concluded that the design of the control room ventilation system precluded excessive concentrations of these chemicals in the control room, and that the control room would remain habitable.¹⁹⁹

4. Safety Panel 3

Safety Panel 3 focused on relevant sections of the COL application and the following chapters from the COL FSER:

¹⁹⁵ *Id.* (Question 4).

¹⁹⁶ *Id.* (Question 4).

¹⁹⁷ *Id.* (Question 4).

¹⁹⁸ *Id.* at 14-15 (Question 4).

¹⁹⁹ Tr. at 157-58.

- Chapter 19, “Probabilistic Risk Assessment,” seismic margin analysis and external event frequencies within the scope of the COL and the novel issue within the scope of the COL review associated with Appendix 19.A, “Loss of Large Areas of the Plant Due to Explosions or Fires.”
- Chapter 15, “Accident Analysis,” including the ACRS’[s] recommendation associated with reactor power uncertainty measurement.
- Chapter 7, “Instrumentation and Controls,” including key safety information incorporated by reference from the AP1000 design certification.
- Chapter 8, “Electric Power,” including an overview of offsite power, underground cable review, and departures from the [DCD].²⁰⁰

a. *Probabilistic Risk Assessment (PRA), Seismic Margin Analysis, External Events, LOLA, Severe Accident Analysis*

The Staff explained that severe accidents, aircraft impact assessment, and probabilistic risk assessment are issues covered in the AP1000 DCD; this information is incorporated by reference into the COL.²⁰¹ On the other hand, external event risks are site dependent, and therefore must be re-evaluated in the COL application.²⁰² The Staff reviewed the Vogtle-specific risk assessments of seismic, high wind, flooding, and fire events; transportation accidents; and potential hazards from nearby facilities.²⁰³ Southern also discussed these topics.²⁰⁴

²⁰⁰ Revised Scheduling Note at 4 (unnumbered). We also asked this Staff panel to be prepared to answer questions on the following:

- Chapter 5, “Reactor Coolant System and Connected Systems.”
- Chapter 16, “Technical Specifications.”
- Chapter 17, “Quality Assurance.”
- Chapter 18, “Human Factors Engineering.”

Id.

²⁰¹ Tr. at 192-93.

²⁰² *Id.* at 194.

²⁰³ *Id.* at 194-200.

²⁰⁴ *Id.* at 183-90.

In connection with seismic risk, this panel continued the seismic margin discussion begun by the previous panel. Southern presented an overview of its process for assessing the seismic margin at the Vogtle site. Southern compared the seismic margins at the Vogtle site to the assessed standard margins for the AP1000 design, and determined that the site-specific seismic demand is enveloped by the AP1000 standard seismic demand, and that the site-specific safety margins applicable to potential sliding and overturning were larger than the calculated limiting safety factors for the AP1000 design cases. Southern stated that, for purposes of seismic margin assessment, the review-level earthquake “is defined as 1.67 times the Vogtle” ground motion response spectra.²⁰⁵ Southern’s engineering evaluations “demonstrated that the seismic margins against soil failure due to soil liquefaction and soil bearing were well above the review-level earthquake.”²⁰⁶

The Staff explained that “certified design response spectra” refers to “the shaking that results from a safe shutdown earthquake, or SSE. . . . [T]he SSE is a 0.3[g] earthquake.”²⁰⁷ The Staff explained that the review-level earthquake, required to be 1.67 times the SSE (as Southern indicated), is a 0.5 g earthquake, “during which the equipment [that is] needed to shut down safely must function [successfully].”²⁰⁸

²⁰⁵ *Id.* at 184 (Moore).

²⁰⁶ *Id.* (Moore).

²⁰⁷ *Id.* at 194-95 (McGovern).

²⁰⁸ *Id.* at 195 (McGovern) (citing SECY-93-087 – Policy, Technical, and Licensing Issues Pertaining to Evolutionary and Advanced Light-Water Reactor (ALWR) Designs, (Jul. 21, 1993) (staff requirements memorandum)). The cited staff requirements memorandum provides that “[a] PRA-based seismic margins analysis will consider sequence-level High Confidence, Low Probability of Failures . . . and fragilities for all (continued . . .)

Southern determined that site-specific susceptibilities to external events, including high winds and floods, were bounded by the corresponding analyses conducted for the AP1000 design, as documented in the DCD.²⁰⁹ The AP1000 design basis for safety-related structures assumes the load from a 300-mph tornado; winds greater than 230 mph occur at a frequency of 1×10^{-7} per year in the United States.²¹⁰ In addition, Vogtle's plant grade is 220 feet above sea level.²¹¹ The design basis flood, which assumes "cascading upstream dam failures coincident with wind setup and wave run-up," is over 40 feet below plant grade.²¹² The Staff confirmed that, while the probable maximum precipitation event approaches the plant grade, Southern's calculation was sufficiently conservative to justify the conclusion that the analysis was bounding.²¹³

The Staff also examined Southern's analysis of nearby transportation accidents, on-site hazardous chemicals, external and off-site fires, and radiological hazards from the other two nuclear facilities located at the Vogtle site. The Staff confirmed that all of these potential external events either were bounded by the DCD, were not applicable, or had negligible consequences.²¹⁴

sequences leading to core damage or containment failures up to approximately [1.67 times] the ground motion acceleration of the Design Basis SSE." *Id.* at 9-10.

²⁰⁹ Tr. at 185.

²¹⁰ *Id.* at 198.

²¹¹ *Id.* at 198-99.

²¹² *Id.* at 199 (McGovern).

²¹³ *Id.*

²¹⁴ *Id.* at 199-200; Ex. NRCR00012, Safety Panel 3, Staff Slide 8.

As the Staff stated in its presentation, 10 C.F.R. § 50.54(hh)(2) requires licensees to “develop and implement guidance and strategies . . . to maintain or restore core cooling, containment[,] and spent-fuel pool cooling capabilities” to address LOLA from fires or explosions that arise from a beyond-design-basis event.²¹⁵ A COL application must include a description and plan for implementing these requirements.²¹⁶ The Staff’s review of these issues currently is governed by an interim Staff guidance document.²¹⁷ The Staff issued over ninety requests for additional information to Southern related to the Staff’s LOLA review; these questions resulted in clarifications, comments, and significant changes to Southern’s mitigation strategies.²¹⁸

To provide context for its mitigation strategy commitments, Southern reviewed relevant AP1000 design features, including: the “permanent hard-piped spent-fuel pool spray system” and “ground-level external hard-piped connections to the spent fuel pool spray and makeup piping” designed for direct connection to fire department pumper trucks or portable pumps; the “passive containment cooling water storage tank located above the containment structure”; and the elimination of the need for emergency power sources during the initial 72-hour period after a LOLA event.²¹⁹ Southern explained its commitments for mitigation strategies related to LOLA of the plant due to explosions or

²¹⁵ Tr. at 201 (Caruso). See 10 C.F.R. § 50.54(hh)(2).

²¹⁶ Tr. at 201. See 10 C.F.R. § 52.80(d).

²¹⁷ Tr. at 202. See “[Final] Interim Staff Guidance, Compliance with 10 CFR 50.54(hh)(2) and 10 CFR 52.80(d) Loss of Large Areas of the Plant due to Explosions or Fires from a Beyond-Design Basis Event,” DC/COL-ISG-016 (June 9, 2010) (ML101940484).

²¹⁸ Tr. at 205-07.

²¹⁹ *Id.* at 188 (Sparkman).

fire, and provided a description of each of its commitments.²²⁰ The Staff confirmed that, at the Staff's request, Southern provided a draft license condition, to be incorporated into the Vogtle COLs, that "establishes a schedule for completing . . . full implementation of the operational and programmatic elements of responding to a LOLA event" prior to initial fuel load.²²¹

b. Instrumentation and Controls

The Staff explained that the AP1000 DCD "assumes a [one] percent power uncertainty for the initial reactor power for the large break [loss-of-coolant accident]."²²² Southern explained that the AP1000 DCD Chapter 15 contains COL Information Item 15.0-1, which requires verification that the installed instruments conform to the DCD and are consistent with the assumptions underlying it.²²³ Southern stated that it addressed the DCD COL Information Item requiring verification that installed instruments will provide reactor power calorimetric uncertainty at one percent by calibrating the instrumentation in the laboratory prior to installation and testing it in-place after installation.²²⁴ Southern noted that plant-specific ITAAC on the instrumentation, installation, and analysis are in place, and that the Staff has proposed a COL license condition related to schedule information on documentation for the analysis of the

²²⁰ See Ex. SNC000005, Southern Pre-Hearing Response, at 6-9, Attachment 1 (Question 31).

²²¹ Tr. at 208-09 (Caruso).

²²² *Id.* at 211 (Joshi).

²²³ *Id.* at 189.

²²⁴ *Id.*

instrumentation and for maintenance procedures.²²⁵ The Staff “confirmed that appropriate license conditions, and ITAAC, were established for verifying the installation and ensuring proper administrative controls.”²²⁶ The Staff also explained that the draft license “includes a license condition that requires the availability of administrative controls to implement maintenance and contingency activities related to the power calorimetric uncertainty instrumentation, prior to fuel load.”²²⁷

c. Electric Power

Southern described the offsite power system, noting that a standard plant-specific ITAAC was established for offsite power.²²⁸ The Staff explained that this ITAAC, included in response to a request for additional information, “provides that the as-built offsite portion of the power supply, from the transmission network, that interfaces with plant onsite power, will be verified to perform as designed.”²²⁹

Southern noted the one departure from the DCD taken in Chapter 8. This departure is related to class 1E voltage regulating transformers, where the isolation and protection function is provided by circuit breakers.²³⁰ The Staff examined Southern’s justification for the departure, finding “it acceptable because the isolation function

²²⁵ *Id.* at 190.

²²⁶ *Id.* at 211-12 (Joshi).

²²⁷ Ex. NRC000015, Staff Post-Hearing Response, at 27 (Question 13).

²²⁸ Tr. at 191.

²²⁹ *Id.* at 219 (Joshi). The ITAAC, which will be included in the license, are described in Ex. NRC000004, COL FSER, Table 8.2A-1.

²³⁰ Tr. at 191.

provided by use of breakers/fuses for regulating transformers is consistent with criteria for independence of electrical safety systems.”²³¹

The Staff’s presentation included additional details about the Vogtle site’s switchyard configuration.²³² The Staff also reviewed Southern’s grid stability analysis, and confirmed that, “as specified in the DCD, the grid will remain stable to maintain reactor coolant pump operation for three seconds following a turbine trip.”²³³

In connection with underground cables, Southern explained that it based its inspection, test, and monitoring criteria on lessons-learned from industry operating experience, regulatory guidance, including the information in Generic Letter 2007-01, and AP1000 design information.²³⁴ The Staff also explained that, as part of its response to a series of requests for additional information, Southern “revised its FSAR to include condition monitoring of underground or inaccessible cables in its Maintenance Rule program.”²³⁵

5. Safety Panel 4

Safety Panel 4 discussed relevant sections of the COL application and the following chapters of the COL FSER:

- Chapter 13, “Conduct of Operations,” including, with respect to Section 13.3, “Emergency Planning,” an overview of the information incorporated by reference from the ESP and COL information related to the relocation

²³¹ *Id.* at 220 (Joshi).

²³² *Id.* at 217.

²³³ *Id.* at 218 (Joshi).

²³⁴ *Id.* at 192. See *generally* NRC Generic Letter 2007-01: “Inaccessible or Underground Power Cable Failures that Disable Accident Mitigation Systems or Cause Plant Transients” (Feb. 7, 2007) (ML070360665).

²³⁵ Tr. at 219 (Joshi).

of the technical support center. In addition, the [S]taff [] discuss[ed] the novel issue associated with cyber security as evaluated in FSER Section 13.8.

- Chapter 9, "Auxiliary Systems," including key safety information incorporated by reference from the AP1000 design certification associated with redesign of the spent fuel pool, and COL information associated with the raw water system.
- Chapter 12, "Radiation Protection," including As Low As is Reasonably Achievable (ALARA) program for construction workers and minimization of contamination.
- Chapter 14, "Initial Test Programs," including [first] plant-only tests and first three plant-only tests.²³⁶

a. *Conduct of Operations, Emergency Planning, Technical Support Center, Cyber Security*

The Staff provided an overview of emergency planning for the Vogtle site; emergency planning issues were resolved in the AP1000 DCD and the ESP.²³⁷ The Staff explained that seven ESP permit conditions relate to emergency planning, namely, the development of emergency action levels (EALs). Permit Conditions 2 and 3 require the development of an EAL scheme that reflects industry guidance; Southern offered a license condition, to be incorporated into the Vogtle COLs, to ensure that these permit conditions are satisfied.²³⁸ Permit Conditions 4 and 5 require the EAL scheme to be

²³⁶ Revised Scheduling Note at 4-5 (unnumbered). We also asked this Staff panel to be prepared to answer questions related to:

- Chapter 4, "Reactor."
- Chapter 10, "Steam and Power Conversion."
- Chapter 11, "Radioactive Waste Management."

Id. at 5 (unnumbered).

²³⁷ Tr. at 257-59. An ESP applicant may, at its option, propose "complete and integrated emergency plans" for review and approval in conjunction with its application, although it is not required to do so. See 10 C.F.R. § 52.17(b)(2), (3). Southern submitted a "complete and integrated emergency plan" as part of its ESP application. See Tr. at 258.

²³⁸ Tr. at 259-60.

consistent with completed AP1000 design details, while Conditions 6 and 7 relate “to as[-]built plant conditions and interfaces with offsite governmental agencies.”²³⁹ The Staff explained that Southern will provide the EALs, detailed procedures for implementing the emergency plan, including an implementation schedule, after the COL issues. Southern must conduct successful onsite and full participation exercises, and must close all of the emergency planning ITAAC before initial fuel load can occur.²⁴⁰ Southern indicated that Vogtle Unit 3’s exercises are tentatively scheduled for January 2015.²⁴¹ In response to post-hearing questions, the Staff confirmed that no exemption was required for the Vogtle EAL program because Vogtle’s EAL scheme—its standard emergency classification and action level scheme—was sufficiently detailed to support a finding that the requirements of 10 C.F.R. § 50.47(b)(4) and Part 50, Appendix E are satisfied.²⁴² The Staff explained that the ITAAC process will provide additional verification of the EAL scheme: ITAAC 1.1.2 requires analysis of the EAL technical bases to confirm the as-built, site-specific implementation of the EAL scheme; and ITAAC 8.1 “requires a full participation exercise prior to fuel load that will demonstrate the use and adequacy of the EAL scheme for both the licensee and State and local officials.”²⁴³ The Staff also clarified that it did not accept any plan “in lieu of” the

²³⁹ *Id.* at 259.

²⁴⁰ *Id.* at 262.

²⁴¹ *Id.* at 291.

²⁴² Ex. NRC000015, Staff Post-Hearing Response, at 20-21 (Question 6).

²⁴³ *Id.* at 21 (Question 6).

requirements of 10 C.F.R. § 52.79(a)(21) and confirmed that the fully-developed EALs will be reviewed by the Staff.²⁴⁴

Southern explained that regulatory action on the location of the technical support center (TSC) was deferred from the ESP to the COL, even though the Staff found the location to be acceptable during the ESP review, because of differences in information between DCD Revisions 15 and 19.²⁴⁵ The Staff explained that Permit Condition 8 was directed to the resolution of these differences.²⁴⁶ The location of the TSC became a departure that the Staff approved in the COL FSER.²⁴⁷ Radiological and non-radiological control room habitability issues also were resolved in the COL phase, with the result that an ITAAC was added to verify that the habitability issues would be addressed in the TSC design.²⁴⁸ Southern explained that the control room will have separate staffing, with two specific sets of positions dedicated to Units 1 and 2, and to Units 3 and 4.²⁴⁹ The Staff also explained that it approved a variance from the ESP that moved the location of the TSC by 150 feet.²⁵⁰ In response to questioning, Southern explained that just as the TSC is designed to handle all four units, the emergency

²⁴⁴ *Id.* (Question 6).

²⁴⁵ Tr. at 250.

²⁴⁶ *Id.* at 260.

²⁴⁷ *Id.* at 250.

²⁴⁸ *Id.* at 251.

²⁴⁹ *Id.* at 251-52.

²⁵⁰ *Id.* at 261-62.

operations facility and the emergency plan will be able to handle events at multiple sites.²⁵¹

The Staff next presented a short history of the NRC's cyber security regulations.²⁵² The agency's overarching requirements for the protection of digital computer and communication systems and networks are found at 10 C.F.R. § 73.54.²⁵³ The cyber security plan must take into account site-specific conditions.²⁵⁴ The plan must be submitted for NRC approval,²⁵⁵ and the written "[p]olicies, implementing procedures, site-specific analysis, and other supporting technical information" developed to implement the plan are subject to periodic inspection by NRC Staff.²⁵⁶ The Staff explained that, after NRC review and acceptance, an applicant's or licensee's cyber security plan becomes a condition of the plant's license. In other words, "the cyber security plan becomes a part of the plant's licensing basis, just like the physical security plan."²⁵⁷

In its presentation, Southern described its cyber security plan for Vogtle, which is a modified version of a standard AP1000 cyber security plan. The modifications, or

²⁵¹ *Id.* at 297. In response to a post-hearing question, Southern provided a detailed description of emergency plan coordination between the Vogtle and DOE Savannah River sites. See Ex. SNC000011, Southern Post-Hearing Response, at 5-7 (Question 7).

²⁵² Tr. at 264-68.

²⁵³ See *id.* at 265-67 (discussion of the rule's requirements).

²⁵⁴ See, e.g., 10 C.F.R. § 73.54(e)(1).

²⁵⁵ 10 C.F.R. § 73.54 (initial paragraph).

²⁵⁶ 10 C.F.R. § 73.54(f).

²⁵⁷ Tr. at 266 (Lee).

deviations, from the AP1000 standard reflect the objectives of Regulatory Guide 5.71, and the template provided in Appendix A of the guide.²⁵⁸ Southern indicated that it provided a justification for each deviation as part of its cyber security plan, and that it proposed a license condition that will require regular updates to the cyber security program implementation schedule to assist with the scheduling of pre-implementation inspections.²⁵⁹ The Staff evaluated each deviation and confirmed that the deviations did not reduce the level of protection for critical digital assets.²⁶⁰

We asked a series of questions regarding cyber security controls as they relate to the TSC. The Staff explained that the TSC must communicate bilaterally with state and local agencies, and that this factor drove Southern's decision to place the TSC at level 2 in the cyber security plan. (The term "level" refers to the placement of a digital system within the applicant's cyber security architecture. It does not refer to the amount of protection the system will receive.) The Staff explained that all critical digital assets, regardless of their placement within the cyber security architecture, must receive adequate protection from cyber attacks, up to and including the design basis threat.²⁶¹

The Staff next addressed spent fuel pool design issues. The Staff observed that the spent fuel storage pool design is incorporated by reference from the AP1000 DCD into the COL application, and described the basics of the AP1000 spent fuel pool

²⁵⁸ *Id.* at 252. See Regulatory Guide 5.71, "Cyber Security Programs for Nuclear Facilities" (Jan. 2010) (ML090340159).

²⁵⁹ Tr. at 252-53.

²⁶⁰ *Id.* at 270.

²⁶¹ Ex. NRC000015, Staff Post-Hearing Response, at 4 (Item J).

design.²⁶² The Staff explained that COL applicants no longer have to provide a confirmatory structural analysis of the spent fuel pool storage racks. Westinghouse, as part of the AP1000 amendment rulemaking, redesigned the racks, and the Staff performed a comprehensive evaluation of the new design as part of the rulemaking.²⁶³ Southern explained that some site-specific COL information items remain. COL Information Item 3.7-2 describes the procedures for verification of spent fuel pool “rack to wall gap dimensions following a seismic event.”²⁶⁴ Supplemental Information Item 9.1-3 “addresses safe load paths for heavy loads near the spent fuel pool.”²⁶⁵ Finally, standard COL Information Item 9.1-7 “addresses Metamic coupon monitoring to check for swelling and boron depletion.”²⁶⁶

The Staff noted that Southern’s Metamic coupon monitoring program incorporates tests to watch for bubbling, blistering, cracking, or flaking on the neutron-absorbing materials, in addition to a test to catch corrosion of the neutron absorbers in the spent fuel pool.²⁶⁷ The Staff explained that the requirement for a Metamic coupon monitoring program derives from operating plant experience, where similar neutron-absorbing materials were discovered to have degraded.²⁶⁸ A proposed license condition, which would be incorporated into the Vogtle COLs, would require Southern to

²⁶² Tr. at 271-72.

²⁶³ *Id.* at 271.

²⁶⁴ *Id.* at 253 (Sparkman).

²⁶⁵ *Id.* (Sparkman).

²⁶⁶ *Id.* (Sparkman).

²⁶⁷ *Id.* at 273.

²⁶⁸ *Id.*

implement its Metamic coupon monitoring program prior to initial fuel load.²⁶⁹ In response to questioning, Southern confirmed that its Metamic coupon monitoring program serves to provide an early warning system to catch degradation if it occurs, rather than simply providing proof that degradation has been prevented.²⁷⁰

b. Auxiliary Systems

Southern first discussed the raw water system.²⁷¹ The system has two sub-systems, a river water sub-system and a well water sub-system. The river water sub-system provides “water for make[-]up to the circulating water system, natural draft cooling tower basins[,] and fill water for the circulating water system,” as well as “dilution water for the Units 3 and 4 blow[-]down sump, [and] for [radioactive] waste discharge when the circulating water system is not available.”²⁷² The well water sub-system “provides make-up for the service water system, mechanical draft cooling tower basins, the potable water system, fire protection system, yard fire water systems, and de-mineralized water treatment system,” as well as “lubrication cooling water to the circulating water system pumps and . . . for miscellaneous plant uses.”²⁷³

The Staff provided a similar description, noting in addition that the design of the raw water system is outside the scope of the AP1000 DCD.²⁷⁴ The Staff explained that

²⁶⁹ *Id.* See Ex. NRC000004, COL FSER, Proposed License Condition 9.1, app. A at A-6.

²⁷⁰ Tr. at 282.

²⁷¹ *Id.* at 253.

²⁷² *Id.* at 254 (Sparkman).

²⁷³ *Id.* (Sparkman).

²⁷⁴ *Id.* at 273-74.

its review focused on ensuring that the raw water system, which is not a safety-related system, will not have an adverse effect on systems that perform safety-significant functions.²⁷⁵ To this end, the Staff issued a series of requests for additional information; the Staff represented that Southern's responses led the Staff to conclude that failure of the raw water system would not affect the ability of safety-related structures, systems, and components to perform their safety-related functions. The Staff noted particularly that the raw water system is not situated close to any safety-related structures, systems, or components, and therefore water from a postulated break in the system would not affect them.²⁷⁶

The Staff also determined that the design of the raw water system is adequate to prevent contamination of the facility and the environment. To explain the bases for this determination, the Staff indicated, first, that the raw water system operates at a higher system pressure than the systems with which it has direct interface; because of this pressure differential, flow of contamination into the raw water system is not feasible.²⁷⁷ Second, the Staff pointed out that there is no direct interconnection between this system and any potential sources of contamination.²⁷⁸

c. Radiation Protection

Regarding the "as low as is reasonably achievable," or ALARA program,²⁷⁹ which is part of the Radiation Protection Program, Southern explained that the COL application

²⁷⁵ *Id.*

²⁷⁶ *Id.* at 274.

²⁷⁷ *Id.* See, e.g., Ex. NRC000004, COL FSER, § 9.2.11.4, at 9-37.

²⁷⁸ Tr. at 274-75.

²⁷⁹ ALARA:
(continued . . .)

incorporates the DCD by reference, but supplements it “to address radiation exposure to construction workers.”²⁸⁰ The Staff explained that exposure to construction workers assigned to Unit 4 is the most conservative or bounding (between Units 3 and 4) and thus formed the basis for its analysis.²⁸¹ The annual whole body dose to these workers, of 23.8 millirem, is well below the annual 100 millirem limit for members of the public (defined to include these workers).²⁸² The Staff confirmed that the information included in the FSAR demonstrated compliance with dose requirements as well as radiation survey requirements.²⁸³

Southern stated that the COL application includes operational procedures to “minimize contamination of the facility and environment, facilitate eventual decommissioning[,] and minimize generation of radioactive waste.”²⁸⁴ The Staff confirmed that it is a COL applicant’s responsibility to demonstrate how procedures for operation will comply with the regulatory requirements for minimizing contamination, set

means making every reasonable effort to maintain exposures to radiation as far below the dose limits . . . as is practical consistent with the purpose for which the licensed activity is undertaken, taking into account the state of technology, the economics of improvements in relation to state of technology, the economics of improvements in relation to benefits to the public health and safety, and other societal and socioeconomic considerations, and in relation to utilization of nuclear energy and licensed materials in the public interest.

10 C.F.R. § 20.1003.

²⁸⁰ Tr. at 254 (Sparkman). See Ex. NRC000001 at Part 2, COL FSAR, at 12.4-7, Table 12.4-201.

²⁸¹ Tr. at 276.

²⁸² *Id.* See 10 C.F.R. §§ 20.1003 and 20.1301.

²⁸³ Tr. at 276. See 10 C.F.R. §§ 20.3101 and 20.1302.

²⁸⁴ Tr. at 255 (Sparkman). See 10 C.F.R. § 20.1406.

out in 10 C.F.R. § 20.1406. In finding that Southern meets these requirements, the Staff noted that Southern developed a groundwater monitoring program that extends beyond typical programs used in operating plants. The Staff evaluated and accepted this program as part of its evaluation of the COL application.²⁸⁵ The Staff also noted that Southern's site-specific exterior radioactive waste discharge piping design includes features that will control the unplanned or undetected release of radioactivity into the environment.²⁸⁶

d. Initial Test Programs

The Staff explained that there are seven first-plant-only tests and two first-three-plant-only tests.²⁸⁷ All of these tests will be mandated by license conditions.²⁸⁸ Three of the first-plant-only tests are preoperational: (1) In-Containment Refueling Water Storage Tank Heatup; (2) Pressurizer Surge Line Stratification Evaluation; and (3) Reactor Vessel Internals Vibration Testing. Two apply during initial criticality and low power testing: (1) Natural Circulation Tests; and (2) Passive Residual Heat Removal Heat Exchanger. The final two first-plant-only tests occur during power ascension testing: (1) Rod Cluster Control Assembly Out of Bank Measurements; and (2) Load Follow Demonstration.²⁸⁹ The two first-three-plant-only tests are conducted prior to fuel load:

²⁸⁵ Ex. NRC000004, COL FSER, §§ 12.3.4 to 12.3.5, at 12-19 to 12-23.

²⁸⁶ Tr. at 275.

²⁸⁷ *Id.* at 277 (discussing Ex. NRCR00013, Safety Panel 4, Staff Slides 39 and 40). Southern reviewed testing incorporated by reference from the DCD; the testing reviewed includes some testing required only for the first plant, and some required for the first three plants to be constructed using the AP1000 design. Tr. at 255-57.

²⁸⁸ Tr. at 277.

²⁸⁹ Ex. NRC000013, Safety Panel 4, Staff Slide 39.

(1) Core Makeup Tank Heated Recirculation Tests; and (2) Automatic Depressurization System Blow-Down Test.²⁹⁰

In response to a question about the relationship between the “Natural Circulation Test” and the station blackout rule, 10 C.F.R. § 50.63, the Staff explained that the “Natural Circulation Test” is specific to the AP1000 design, and that other tests demonstrate that the AP1000 design features will perform as required to mitigate the effects of a station blackout.²⁹¹ The Staff identified the following DCD-mandated tests related to station blackout: (1) Plant Trip from 100 Percent Power; (2) Passive Core Cooling System Testing; (3) Passive Containment Cooling System Testing; (4) Class 1E DC Power and Uninterruptible Power Supply Testing; (5) Loss of Offsite Power; and (6) Main Control Room Emergency Habitability System Testing.²⁹² The Staff explained that the AP1000 does not rely on AC power sources during design-basis events. The AP1000 passive systems automatically establish safe-shutdown conditions, and can maintain safe shutdown for 72 hours after a loss of onsite and offsite power sources, without operator action.²⁹³ As additional background information, the Staff listed a number of features of the AP1000 design that mitigate the consequences of a station blackout.²⁹⁴

²⁹⁰ *Id.*, Staff Slide 40.

²⁹¹ Tr. at 293-94.

²⁹² Ex. NRC000015, Staff Post-Hearing Response, at 5-6 (Item K).

²⁹³ *Id.* at 5 (Item K).

²⁹⁴ *Id.* (Item K).

6. *Environmental Overview Panel*

We asked this panel to describe the process used to develop the Vogtle COL SEIS given the referenced ESP, and to summarize the Staff's SEIS analysis and conclusions with respect to certain resource areas, as follows:

- Overview of the [S]taff's conclusions in the SEIS, including a general explanation of the role of the Vogtle ESP FEIS;
- Description of the [S]taff's evaluation process, including:
 - Staff guidance
 - Assessment of the applicant's process for identifying new and significant information
 - How the [S]taff's analysis was informed by interactions with the public and with local governmental agencies at the Federal, State, and local level;
- Summary of the [S]taff's analysis and conclusions in the SEIS with respect to novel or non-routine environmental areas encompassed by the review.
 - The [] novel issue of how the COL environmental review accounted for ESP amendment requests that the applicant submitted during the COL review, with a focus on the resulting change in the [S]taff's conclusion from the ESP FEIS regarding impacts to terrestrial ecology.²⁹⁵

a. *Overview*

The EIS prepared in connection with the ESP evaluated the impacts at the Vogtle site of building and operating two new units of the AP1000 reactor design. Because Southern addressed additional topics that are optional for ESP applicants, including analyses of the economic, technical, and other costs and benefits of the project, and the evaluation of alternative energy sources, the Staff reviewed those issues at the ESP stage, leaving no unresolved environmental issues.²⁹⁶ As a result, Southern limited its environmental review for the COL application to conducting a comprehensive review of

²⁹⁵ Revised Scheduling Note at 5 (unnumbered).

²⁹⁶ See Ex. NRC000003, Staff Testimony, at 21.

the ESP EIS to identify any new and significant information with the potential to alter the conclusions reached in the ESP EIS.²⁹⁷ For context, Southern and the Staff both provided an overview of the issues considered in the ESP EIS.²⁹⁸

b. The Staff's Evaluation Process

The Staff described its COL application review process, performed in accordance with 10 C.F.R. § 51.92 and the Environmental Standard Review Plan.²⁹⁹ The COL environmental review was conducted by a twenty-five member multidisciplinary team drawn from the Staff and from contractors at the Pacific Northwest National Laboratory.³⁰⁰ The Staff audited Southern's process for identifying new and significant information in August 2008, and conducted a second audit in September 2009 to verify Southern's adherence to this process.³⁰¹ The Staff's site audits included tours of potential transmission rights-of-way, the Savannah River intake structure location, and cultural and historic resource sites.³⁰²

The Staff also searched independently for new and significant information. The Staff stated that it contacted the State of Georgia Historic Preservation Officer, the Georgia Department of Natural Resources, the South Carolina Department of Natural Resources, the U.S. Fish and Wildlife Service, the U.S. Army Corps of Engineers, the

²⁹⁷ Tr. at 299.

²⁹⁸ *Id.* at 299-304, 305-12.

²⁹⁹ *Id.* at 305-06. See generally "Environmental Standard Review Plan: Standard Review Plans for Environmental Reviews for Nuclear Power Plants" NUREG-1555, Vols. 1 and 2 (Oct. 1999) (ML003702134, ML003701937) (Environmental SRP).

³⁰⁰ Tr. at 312.

³⁰¹ *Id.* at 314.

³⁰² *Id.* at 314-15.

National Marine Fisheries Service (NMFS), and roughly thirty federally-recognized Indian Tribes, to collect pertinent information.³⁰³

The Staff explained that the Vogtle ESP application was the first to reference a certified reactor design instead of using the “plant parameter envelope” approach, where the specific reactor design will not be identified until later. This, as well as the close timing of the ESP and COL application submissions, reduced the likelihood of significant new information at the COL stage.³⁰⁴ The Staff also confirmed that its analysis considered potential changes resulting from all revisions, through Revision 19, of the AP1000 DCD.³⁰⁵

c. Summary of the Staff's Analysis and Conclusions

The Staff identified new information requiring additional analysis in connection with land use; this included additional acreage required for the fire training facility and the simulator building, and acreage designated as backfill sources, which would be disrupted temporarily.³⁰⁶ The Staff determined that this new information did not alter the impact level conclusion reached in the ESP EIS because the new acreage is located within the Vogtle site boundaries and the intended uses for the acreage are consistent with its commercial zoning and with the Burke County comprehensive plan.³⁰⁷

The Staff evaluated information from an updated traffic study together with a new Environmental Protection Agency (EPA) ozone standard in the National Ambient Air

³⁰³ *Id.* at 315-16.

³⁰⁴ *Id.* at 308-09.

³⁰⁵ *Id.* at 332.

³⁰⁶ *Id.* at 317.

³⁰⁷ *Id.*

Quality Standards (NAAQS). Here again, the Staff's conclusions were unchanged from the ESP EIS: the meteorology and air quality results from the Staff's analysis of the new traffic study were consistent with the ESP EIS results, and Burke County retains its NAAQS attainment status, despite the revised ozone standard.³⁰⁸

The COL application contains a slight modification of the intake structure design relative to the design presented in the ESP application.³⁰⁹ The Staff determined that changes to the intake structure design did not significantly alter the width or the length of the intake canal, meaning that surface water and groundwater impacts during construction would remain localized and temporary, as determined in the ESP EIS.³¹⁰ The Staff concluded that the ESP EIS determinations for water-related impacts deriving from backfill material excavations remained valid for the new backfill source areas for two reasons: the new areas are included in Southern's national pollutant discharge elimination system permit, and the excavations will not intersect the water table or require de-watering.³¹¹ Also on the topic of water quality impacts, the Staff identified a three percent increase in total effluent discharge to the Savannah River. The Staff re-ran its thermal plume analysis model using this increase, and found no significant change in the size of the thermal plume, so the ESP EIS conclusion remained valid.³¹²

³⁰⁸ *Id.*

³⁰⁹ See Ex. NRC000001, Part 3, Applicant's Environmental Report, § 3.2.2, at 3-17; 3-19, Figure 3.1-1; and 3-20, Figure 3.2-1. See *also* Ex. NRC000006, COL SEIS, § 3.2.2, at 3-4.

³¹⁰ Tr. at 318.

³¹¹ *Id.*

³¹² *Id.*

Since the preparation of the ESP EIS, the NMFS proposed listing the Carolina and South Atlantic distinct population segment of the Atlantic sturgeon as an endangered species under the Endangered Species Act.³¹³ The Staff consulted with the NMFS and concluded that its previous analysis of impacts on the sturgeon remained valid.³¹⁴ Also related to aquatic impacts, the Staff noted that Southern confirmed its receipt of the required Clean Water Act § 401 certification from the Georgia Department of Natural Resources. Southern also confirmed receipt of the required Clean Water Act § 404, and Rivers and Harbors Act § 10 permits from the Army Corps of Engineers (Corps).³¹⁵ The Staff explained that receipt of these permits from the Corps confirmed its ESP EIS conclusion that the impacts on aquatic resources from construction and operation of the new units would be small.³¹⁶

The Staff stated that Southern signed a memorandum of understanding with the Georgia State Historic Preservation Officer to properly preserve a newly-fenced historic cemetery, demonstrating the company's commitment to protecting cultural and historic resources and mitigating impacts on those resources. As a result, the Staff found that its ESP EIS conclusion that impacts on cultural and historic resources would be moderate remained valid.³¹⁷

The Staff also reviewed new information related to energy alternatives, such as projected electricity demand reductions due to demand side management, and changes

³¹³ *Id.* at 319.

³¹⁴ *Id.*

³¹⁵ *Id.*

³¹⁶ *Id.* at 319-20.

³¹⁷ *Id.* at 320.

to the EPA's rules on new source pollutants under the Clean Air Act.³¹⁸ In connection with the former, the Staff explained that the demand reductions already were accounted for in Georgia Power Company's Integrated Resource Plan, so they were not available to offset the need for additional power.³¹⁹ With respect to the second, the Staff found that the EPA's rule change would not alter the comparative relationship between alternative energy sources in a meaningful way "because [greenhouse gas] emissions from the other energy source alternatives would not be sufficiently reduced to make them environmentally preferable to the proposed project."³²⁰ The Staff therefore concluded that the new information would not alter its analysis.³²¹

The Staff explained that because the work encompassed in the second LWA request was originally part of the first LWA request, the ESP EIS evaluated the environmental impacts of the second request. The COL FSEIS referenced this analysis, and verified the adequacy of the site redress plan for the second LWA.³²² The ESP EIS also evaluated three license amendment requests to obtain additional backfill from previously identified onsite borrow areas and to change the classification of the backfill. However, at the ESP stage the Staff did not evaluate the license amendment request to add new backfill borrow sources located onsite in previously undisturbed areas; this

³¹⁸ *Id.* at 320-21.

³¹⁹ *Id.* See also Ex. NRC000006, COL FSEIS, § 9.2, at 9-2 to 9-3.

³²⁰ Ex. NRC000006, COL FSEIS, § 9.2, at 9-3.

³²¹ Tr. at 321.

³²² *Id.* at 322. The site redress plan applies in the event that construction is terminated, that the COL application is denied or withdrawn, or that the LWA is revoked. *Id.* As part of its supplemental environmental analysis, the Staff "verified that the site redress plan discussed in the ESP EIS would adequately address the impacts of the activities requested under the second LWA." Ex. NRC000006, COL FSEIS, § 4.11, at 4-32.

request was evaluated as part of the COL environmental review.³²³ Here, the Staff found that the impacts on terrestrial ecology would change from small to moderate because of impacts on the sandhills milkvetch (a Georgia state-listed threatened plant species) and the Southeastern pocket gopher (a Georgia state-listed threatened mammal).³²⁴ The Staff indicated that Southern voluntarily mitigated the impacts on both of these species via onsite relocation efforts, and also committed to re-plant longleaf pine in disturbed areas where possible.³²⁵ In response to questions, the Staff confirmed that its site audits were not just paper audits: "We actually walked the site, we were able to see the relocation efforts . . . for the [p]ocket [g]opher and . . . the sandhills milkvetch."³²⁶

d. Severe Accident Concerns

We asked a series of questions about whether the severe accident analysis conducted as part of the ESP EIS considered accidents involving multiple units at the site in disaster scenarios analogous to the multi-layer disaster that occurred at Fukushima, Japan.³²⁷ Southern indicated that its ESP environmental report considered the overall risk that two or more reactors could experience concurrent accidents; however, the assumption is that these events are independent.³²⁸ Southern stated that given the limited external hazards, it is reasonable to expect that the risk would be

³²³ Tr. at 323. See Ex. NRC000006, COL FSEIS, § 4.1.1, at 4-2.

³²⁴ Tr. at 323; Ex. NRC000006, COL FSEIS, § 2.7.1, at 2-6.

³²⁵ *Id.* at 324.

³²⁶ *Id.* at 332 (Sutton).

³²⁷ *Id.* at 326-30, 334-38.

³²⁸ Ex. SNCR00011, Southern Post-Hearing Response, at 17 (Question 14).

dominated by an accident at a single unit.³²⁹ The Staff also provided additional detailed answers in its post-hearing response.³³⁰

Consistent with current review guidance,³³¹ the Staff's severe accident analysis did not consider concurrent accidents at more than one unit at the Vogtle site. For the COL, the Staff's environmental analysis of severe accidents tiered off the analysis in the ESP EIS—the COL FSEIS was, in essence, an update to the ESP EIS, created for the purpose of identifying and analyzing new and significant information. In the ESP EIS, the Staff compared the severe accident risks of the proposed reactors to the risks faced by other reactors, onsite and offsite, and to the safety goals in our Safety Goal Policy Statement.³³² Based on the Staff's calculations, the risks for the Westinghouse AP1000 reactor design at the Vogtle site are expected to be lower than those for current generation plants.³³³ This supports the Staff's conclusion "that the probability-weighted consequences of severe accidents at the Vogtle site would be [small]."³³⁴

The ESP EIS also evaluated cumulative impacts. For example, "the combined population dose risk for the two existing units plus the two new AP1000 reactors is about 3.8×10^{-2} person-Sv/Ryr. . . . [This] did not constitute a significant increase in the

³²⁹ *Id.*

³³⁰ See Ex. NRC000015, Staff Post-Hearing Response, at 7-9 (M, N, and O).

³³¹ See *generally* Environmental SRP, § 7.2, "Severe Accidents."

³³² See Safety Goals for the Operations of Nuclear Power Plants; Policy Statement; Republication, 51 Fed. Reg. 30,028 (Aug. 21, 1986).

³³³ Ex. NRC000015, Staff Post-Hearing Response, at 8 (Item N).

³³⁴ *Id.* at 7 (Item M). See also *id.* at 8 (Item N).

population dose risk.”³³⁵ The Staff reached similar conclusions for risks like “cost risk, early fatalities, and decontamination areas,” and ultimately determined that the cumulative severe accident impact of adding the new units would be small.³³⁶ In the COL FSEIS, the Staff found no new and significant information to change either its severe accident, or its cumulative severe accident, conclusions.³³⁷

The Staff explained that its severe accident analysis includes scenarios involving radiological releases into the environment. Consistent with Commission policy and NEPA requirements, this analysis looks at probability-weighted consequences. Severe accidents, like the accident at Fukushima Dai-ichi, are potentially high consequence but extremely low probability accidents, so considering their consequences without simultaneously accounting for risk “would distort the purpose of disclosing the reasonably anticipated impacts of the project.”³³⁸ The Staff explained that it evaluates the impacts of severe accidents in terms of health effects, economic costs, and land contamination—all in the context of risk.³³⁹ Moreover, the focus of the risk analysis is “on the probability and consequences of the postulated accident, not on independent damage attributable to the external event that may have initiated that accident.”³⁴⁰ Importantly, while the Staff has not conducted a formal probabilistic risk assessment or

³³⁵ *Id.* (Item M).

³³⁶ *Id.* (Item M).

³³⁷ *Id.* (Item M).

³³⁸ *Id.* at 8 (Item N).

³³⁹ *Id.* (Item N).

³⁴⁰ *Id.* at 9 (Item O).

any other quantitative evaluation as part of the AP1000 DCD, it has considered a range of postulated severe accidents and consequences of these accidents.³⁴¹

C. Sufficiency of the Staff's Safety Review

We have conducted an independent review of the sufficiency of the Staff's safety findings, with particular attention to the topics discussed above in the Staff and Southern panel presentations. For each of the topics discussed in these presentations, we determine that the Staff's review was reasonably supported in logic and fact and sufficient to support its findings. We make the same determination for topics not explicitly discussed at the hearing or in today's decision, including topics addressed in the FSER, and topics on which we asked pre- or post-hearing questions.

In accordance with the notice of hearing for this uncontested proceeding,³⁴² based on our review of the rationale underlying the Staff's conclusions, we determine that the Staff's review of the combined license application was adequate to support the Staff's findings that: (1) the applicable standards and requirements of the Atomic Energy Act and our regulations have been met; (2) all required notifications to other agencies or bodies have been made; (3) there is reasonable assurance that the facilities will be constructed and will operate in conformity with the license, the provisions of the AEA, and our regulations; (4) the applicant is technically and financially qualified to engage in the activities authorized; and (5) issuance of the license will not be inimical to the common defense and security or the health and safety of the public.

³⁴¹ *Id.* at 8 (Item N).

³⁴² See Notice of Hearing at 50,768.

We also find that the Staff's review of the application for the limited work authorizations was adequate to support the Staff's findings that: (1) the applicable standards and requirements of the Atomic Energy Act and our regulations pertinent to the activities to be conducted under the limited work authorizations were met; (2) the applicant is technically qualified to engage in the activities authorized; (3) issuance of the limited work authorizations will provide reasonable assurance of adequate protection to public health and safety and will not be inimical to the common defense and security; and (4) there are no unresolved safety issues relating to the activities to be conducted under the limited work authorizations that would constitute good cause for withholding the authorizations.

D. Sufficiency of the Staff's Environmental Review

We also conducted an independent review of the Staff's supplemental environmental analysis. Our determination on the Staff's environmental analysis—including with respect to those topics not expressly addressed at the hearing—takes into account the particular requirements of NEPA, discussed briefly below.

As a general matter, NEPA Section 102(2)(A) requires that the NRC use “a systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts” in decisionmaking that may impact the environment.³⁴³ Here, given that an EIS was prepared at the ESP stage, the Staff's review was framed by the requirements of 10 C.F.R. § 51.92. Under that provision, the Staff prepared a supplemental EIS, focusing on issues related to the impacts of construction and operation for which new and significant information had

³⁴³ NEPA § 102(2)(A), 42 U.S.C. § 4332(2)(A).

been identified. Our particular focus was to ensure that this as well as all other applicable NEPA requirements were met.

In the area of impacts of the proposed action³⁴⁴—here, issuance of COLs and LWAs—the Staff, in its review of new and significant information, identified a change in impacts associated with terrestrial ecology, as discussed in today’s decision. Other than in the area of terrestrial ecology, however, no new and significant information was identified that would change the conclusions made in the ESP FEIS.³⁴⁵ The Staff did identify new, unavoidable adverse environmental impacts that would occur during construction and operation of the new units.³⁴⁶ In particular, the Staff determined that there would be an increase in the permanently disturbed land area, as well as additional land disturbance resulting from the development of additional onsite borrow areas.³⁴⁷ As discussed in its COL FSEIS, the Staff identified actions to mitigate these impacts, and concluded that no other information was identified that would change its conclusions regarding these impacts.³⁴⁸

An assessment of alternatives to the proposed action was prepared at the ESP stage.³⁴⁹ The Staff identified no new information in the areas of energy alternatives or

³⁴⁴ NEPA §§ 102(2)(C)(i); (2)(E); 42 U.S.C. §§ 4332(2)(C)(i), 4332(2)(E).

³⁴⁵ Ex. NRC000006, COL FSEIS, § 11.1.

³⁴⁶ NEPA § 102(2)(C)(ii), 42 U.S.C. § 4332(2)(C)(ii).

³⁴⁷ Ex. NRC000006, COL FSEIS, § 11.2. Development of the new borrow areas resulted in impacts of two State-listed species, the southeastern pocket gopher and the sandhills milkvetch (discussed above).

³⁴⁸ *Id.* See *id.* §§ 4.4.1 (discussing onsite relocation of these species, as well as Southern’s efforts to replant the disturbed area with longleaf pine).

³⁴⁹ NEPA § 102(2)(C)(iii), 42 U.S.C. § 4332(2)(C)(iii).

system design alternatives; the Staff therefore determined that its conclusions in this area made at the ESP stage remained valid.³⁵⁰ Under the no-action alternative, the NRC would not issue the COLs or the LWAs. The Staff concluded that, while there would be no environmental impacts associated with not issuing the COLs (save those associated with activities not within the definition of construction,³⁵¹ and any activities performed under an LWA prior to denial of the COLs), the power still would be needed. Environmental impacts would be associated with any alternative option at the site of implementation; as discussed above, the Staff determined that the alternative options evaluated would not be reasonable alternatives to providing new baseload power generation capacity.³⁵²

The NRC also is required to assess the relationship between local short-term uses of the environment and the long-term productivity of the environment.³⁵³ This review was performed as part of the cost-benefit analysis discussed in the ESP EIS.³⁵⁴ The Staff identified no information that would change the conclusions in the ESP FEIS.

³⁵⁰ *Id.* § 11.3. *See id.* §§ 9.2, 9.3.

³⁵¹ *See* 10 C.F.R. §§ 50.10(a); 51.4.

³⁵² Ex. NRC000006, COL FSEIS, §§ 11.3, 9.1. Pursuant to 10 C.F.R. § 51.92(c)(3), the FSEIS did not contain a separate discussion of alternative sites; these also were assessed at the ESP stage.

³⁵³ NEPA, § 102(2)(C)(iv), 42 U.S.C. § 4332(2)(C)(iv).

³⁵⁴ Ex. NRC000006, COL FSEIS, §§ 11.4, 11.6. *See generally* ESP FEIS § 11.6. Overall, the Staff determined that the benefits of the action (including societal and regional benefits) generally outweighed the costs (including internal costs (costs accruing to the applicant) and external costs (such as loss of regional productivity, environmental degradation, or loss of wildlife habitat). The Staff concluded at that time that the accrued benefits most likely would outweigh the economic, environmental, and social costs of building and operating the new units.

Finally, NEPA section 102 requires us to consider the irreversible and irretrievable commitments of resources associated with the proposed action.³⁵⁵ This review also was performed at the ESP stage. The Staff concluded at that time that the irretrievable commitments of resources during construction generally would be similar to that of any major construction project. During operation, uranium is the principal resource that would be irretrievably committed. Given the sufficient availability of uranium, the Staff concluded that the commitment would be of small consequence.³⁵⁶ The Staff, in its review, identified no new and significant information in this area.

We find that the relevant NEPA requirements have been met. To support this determination, we have assessed the Staff's (and the applicant's) process for identifying new and significant information, and find that the process was sufficient to identify new information that might be potentially significant concerning environmental issues addressed in the ESP EIS. We paid special attention to the topics discussed at the hearing. For each of the topics discussed at hearing, we find that the Staff's review was reasonably supported in logic and fact and sufficient to support the Staff's conclusions. We also reviewed the COL FSEIS, and, based on the assessments performed in that document, together with the balance of the information in the adjudicatory record, we make the same determination for topics not directly addressed at the hearing or in today's decision. Finally, in carrying out our review, we have considered particularly each of the requirements of NEPA section 102(2)(C), and find nothing in the record that would lead us to disturb the Staff's conclusions on those requirements. Overall, nothing

³⁵⁵ NEPA § 102(2)(C)(v), 42 U.S.C. § 4332(2)(C)(v).

³⁵⁶ Ex. NRC000006, COL FSEIS, § 11.5. *See generally* ESP FEIS, § 11.5.

in the adjudicatory record of this proceeding (including the contested proceeding) leads us to believe that the Staff's environmental findings are unreasonable. Therefore, as a result of our review of the Staff's supplemental environmental analysis, and in accordance with the notice of hearing for this uncontested proceeding,³⁵⁷ we find that the requirements of NEPA, § 102(2)(A), (C), and (E), and the applicable regulations in 10 C.F.R. Part 51, have been satisfied with respect to the combined license application. We independently considered the final balance among conflicting factors contained in the record of this proceeding and find that the proposed action, issuance of the combined licenses, should be taken. We also find, after weighing the environmental, economic, technical, and other benefits against environmental and other costs, and considering reasonable alternatives, that the combined licenses should be issued. Finally, we determine that the NEPA review conducted by the NRC Staff has been adequate.

For the application for the limited work authorizations, based on our review of the Staff's supplemental environmental analysis, and with respect to the activities to be conducted under the limited work authorizations, we find that the requirements of NEPA § 102(2)(A), (C), and (E), and the regulations in 10 C.F.R. Part 51, Subpart A, have been satisfied. We independently considered the balance among conflicting factors with respect to the limited work authorizations, contained in the record of the proceeding, and find that the proposed action, issuance of the limited work authorizations, should be taken. We also find that the site redress plan will adequately redress the activities performed under the limited work authorizations, if the limited work authorization

³⁵⁷ *Id.*

activities are terminated by the holder or the limited work authorizations are revoked by the NRC. Finally, based on our review of the Staff's consideration of new and significant information, we find that the NEPA review conducted by the NRC Staff for the limited work authorizations has been adequate.

E. Fukushima Dai-ichi

As a general matter, our review of recommended actions associated with lessons learned from the Fukushima Dai-ichi events is ongoing. The agency's Near-Term Report included twelve overarching recommendations for improving the safety of both new and operating nuclear reactors.³⁵⁸ As previously stated, it also determined that "continued operation and continued licensing activities do not pose an imminent risk to public health and safety."³⁵⁹ We approved and provided direction on certain near-term actions identified by the Near-Term Task Force to be initiated without delay and shortly thereafter approved the prioritization of all of the recommendations and supported the Staff's proposed actions on the top two tiers of recommendations.³⁶⁰

As we stated in CLI-11-5, we have in place well-established regulatory processes by which to impose any new requirements or other enhancements that may be

³⁵⁸ See, e.g., Near-Term Report at 69-70.

³⁵⁹ *Id.* at vii. See also *supra* at 22.

³⁶⁰ See Staff Requirements—SECY-11-0124—Recommended Actions to be Taken Without Delay from the Near-Term Task Force Report (Oct. 18, 2011) (ML112911571) (Staff Requirements—SECY-11-0124). Among other things, we directed that the agency "should strive to complete and implement the lessons learned from the Fukushima accident within five years—by 2016." *Id.* at 1. See also Staff Requirements—SECY-11-0137—Prioritization of Recommended Actions to be Taken in Response to Fukushima Lessons Learned (Dec. 15, 2011) (ML113490055).

needed.³⁶¹ The applicability of any new requirement will be determined when the justification is fully developed and we evaluate the Staff's bases. While these processes are well under way, it takes time to complete the steps necessary to ensure that any new requirements are technically justified and implemented appropriately. All affected nuclear plants will be required to comply with NRC direction resulting from lessons learned from the Fukushima accident, regardless of the timing of issuance of the affected licenses.³⁶² We therefore expect that the new Vogtle units will comply with all applicable "post-Fukushima" requirements.

Our paramount focus, always, is protecting public health and safety. We therefore agree fully with Chairman Jaczko that our responsibility is to make the best decisions for nuclear safety. The Fukushima events were significant, warranting enhancements in nuclear safety measures and we share the Chairman's commitment to implementing Fukushima-related enhancements and to nuclear safety generally. Nonetheless, we find ourselves in disagreement with the specific approach he offers in his dissent—namely, an across-the-board license condition requiring implementation of "all" Fukushima-related requirements prior to operation of the Vogtle plant. Such a license condition, in our view, cannot now be framed in meaningful terms. The Chairman's license-condition approach also is unnecessary, given the myriad of regulatory tools available to the NRC to implement Fukushima-related requirements as they emerge, including requirements applicable to new plants like Vogtle.

³⁶¹ See *generally Callaway*, CLI-11-5, 74 NRC at __ (slip op. at 24-25).

³⁶² As the Staff has stated, using our established regulatory processes for implementation of any post-Fukushima requirements on already-issued COLs would be comparable to the process used with operating reactors. See Ex. NRC000003, Staff Testimony, at 10.

We are confident that the Commission's approach—using rigorous, well-established processes rather than a loosely-defined license condition—will assure timely implementation of new requirements based on Fukushima lessons learned. As described above, we have already provided direction on certain Near-Term Task Force recommendations,³⁶³ and substantial future actions are imminent. For example, we expect to receive this month the Staff's proposal to issue orders imposing new requirements, and will take action on them shortly thereafter. These orders would apply not only to currently-operating plants, but to COL holders as well.

To date, our Fukushima lessons-learned effort has proved fruitful by virtue of thoughtful Staff analysis, stakeholder input, and continuing Commission attention. Just as we have committed to undertaking a systematic and methodical review of the events at Fukushima, a review that inevitably takes time, so must we be vigilant in following a stable, predictable licensing process. Imposing the license condition suggested by Chairman Jaczko would neither improve this effort nor make a difference in the operational safety of new reactors. Indeed, Chairman Jaczko's approach may unintentionally impact the Staff's disciplined work. The proposed license condition might in the end limit the flexibility necessary to ensure that any new requirements are implemented on carefully-considered schedules.

³⁶³ The Task Force recommended that design certifications and COL applications under active Staff review address Recommendation 4 (regarding prolonged station blackout mitigation) and Recommendation 7 (regarding spent fuel pool makeup capability and instrumentation) before licensing. Near-Term Report at 71. To the extent that these recommendations are not already addressed in the AP1000 certified design, we expect that any applicable site-specific requirements arising from these recommendations—whether imposed by order or by rule—will be applied to the Vogtle licenses, as necessary, prior to the commencement of plant operations.

Furthermore, because the agency continues to develop the technical basis for Fukushima-related requirements, the proposed license condition would lack sufficient details necessary to impose meaningful requirements.³⁶⁴ As we see the situation, a general license condition, without specific directives, that says (in effect) that the NRC is committed to applying and enforcing future, but yet-to-be-developed, safety requirements amounts largely to symbolism. Nuclear safety is not advanced by imposing overly-broad, ill-defined requirements.

We therefore see no compelling reason to depart from our existing regulatory processes and, for these reasons, we respectfully decline to impose the license condition suggested in Chairman Jaczko's dissent.

³⁶⁴ Such a broad-styled license condition would be unacceptably vague. See *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-00-13, 52 NRC 23, 34 (2000) ("sufficient details should be provided in the license so that the Staff's review is not subject to meaningful debate.").

III. CONCLUSION

We find that the Staff's review of the safety and environmental issues related to Southern's combined license and limited work authorization applications was sufficient to support the findings, identified in 10 C.F.R. §§ 52.97 and 51.107(a), for each of the combined licenses to be issued, and the findings identified in 10 C.F.R. §§ 50.10 and 51.107(d), with respect to the limited work authorizations. In addition, we direct the NRC Staff to include in the Vogtle COLs the condition described in today's decision, relative to the implementation of a surveillance program for squib valves. The Director of the Office of New Reactors therefore is authorized to issue the limited work authorizations and appropriate licenses authorizing construction and operation of Vogtle, Units 3 and 4.

IT IS SO ORDERED.

For the Commission

[NRC Seal]

/RA/

Annette L. Vietti-Cook
Secretary of the Commission

Dated at Rockville, Maryland,
this 9th day of February, 2012.

Chairman Gregory B. Jaczko, Dissenting**I. INTRODUCTION**

It is with great disappointment that I offer this dissent on the order for the uncontested portion of the hearing related to Southern Nuclear Operating Co. Vogtle Nuclear Power Plant, Units 3 and 4. This action represents years of hard work by the staff of the NRC, and I would like nothing more than to celebrate the completion of their efforts and this historic license. But, ultimately, my responsibility is to make what I believe is the best decision for nuclear safety. I simply cannot authorize issuance of these licenses without any binding obligation that these plants will have implemented the lessons learned from the Fukushima accident before they operate.

II. DISCUSSION

My analysis begins with the significance of the Fukushima accident. On March 11, 2011, a magnitude 9.0 earthquake, known as the Great East Japan Earthquake, occurred approximately 80 miles east of the coast of Japan and precipitated a large tsunami. These events caused widespread devastation, including extensive damage to the Fukushima Dai-ichi nuclear reactor facilities and a complete, sustained loss of electrical power to five reactors. These events had serious and unacceptable consequences, causing reactor core damage and uncontrolled releases of radioactive materials into the environment. These unprecedented and catastrophic events and their aftermath have provided real world experience that we are applying in comprehensive review of our regulatory requirements, programs and processes and their implementation.

That review is well under way and has already identified significant safety improvements. Most importantly, the review has identified safety improvements applicable to these new Vogtle reactor units that I believe must be implemented before operation to ensure adequate protection

of public health and safety. I do not support authorizing the issuance of COLs that will allow both construction and *operation*, without binding assurance that these issues will be addressed before the plant operates. Only by imposing a license condition can we ensure that all the lessons we learn from Fukushima are implemented before operation. I describe my reasoning in more detail below.

1. Nuclear Reactor Safety Enhancements Have Been Identified Based on New Information and Insights From the Fukushima Accident

The Fukushima accident was precipitated by natural disasters of historic proportions. For reasons not yet definitively established, the Fukushima reactor design and mitigation measures did not prevent serious consequences from these events. These events prompted us to take immediate action to address the safety of our nation's nuclear fleet. Within weeks of the Fukushima accident, the Commission established a task force responsible for making recommendations to the Commission on potential improvements to our regulatory system.¹ The Task Force's efforts represent an important first step in applying new insights from the Fukushima accident in our regulatory oversight of the nation's nuclear fleet.

The Task Force identified twelve overarching recommendations for improving safety of operating and new nuclear reactors.² These included measures to ensure protection against earthquakes and flooding, measures to minimize potential hazards from those events and measures to improve emergency preparedness and response.³ More broadly, the Task Force recommended strengthening our regulatory framework by making it more logical, systematic

¹ See "NRC Actions Following the Events in Japan," Staff Requirement—Tasking Memorandum COMGBJ-11-0002 (Mar. 23, 2011) (ML110800456).

² See *generally* Near-Term Report.

³ *Id.* at 69-70.

and coherent.⁴ Taken together, the recommendations were intended to clarify and strengthen our regulatory framework to protect against and mitigate the consequences of natural disaster, enhance emergency preparedness, and improve the effectiveness of our regulatory programs.⁵

We remain focused on completing a comprehensive review of the events at Fukushima and ensuring that the lessons from that review are incorporated as safety enhancements without delay. To accomplish this, we have taken steps to accelerate our review and currently expect to issue orders requiring initial actions by March 2012.⁶ Our goal is to complete and implement the lessons learned from the Fukushima accident by 2016.⁷

2. Commission Approved Safety Enhancements Must be Implemented to Ensure Reasonable Assurance of Safe Operation of New Vogtle Reactors

In considering whether to authorize issuance of these COLs, I am mindful of the regulatory findings underlying our decision. They require us to determine, among other things, that: (1) the applicable regulations have been met, (2) there is reasonable assurance that these new reactors will be constructed and will operate in conformity with our regulations, and (3) issuance of these licenses will not be inimical to the health and safety of the public.⁸ Based on the evidence presented during this hearing, I am convinced that the Staff's review was adequate to support those findings based on our regulatory requirements in place prior to the Fukushima accident. But that accident has fundamentally altered our understanding and appreciation of the

⁴ *Id.* at 69.

⁵ *Id.* at viii.

⁶ See Slides from Public Meeting, Status Update on Implementation of the NTTF Recommendations (Jan. 13, 2012) at 9 (ML120120491).

⁷ Staff Requirements—SECY-11-0124 at 1.

⁸ 10 C.F.R. § 52.97.

impacts of a catastrophic natural disaster. Therefore, I consider this licensing decision in light of those events.

We have already identified Fukushima recommendations that must be taken without delay.⁹ Our decision was premised on the Staff's assessment of which recommendations have the greatest potential for safety improvement in the near term.¹⁰ The Staff then took a broader look at the recommendations in the context of our regulatory framework and formed recommendations to prioritize them based on its judgment of relative safety enhancement.¹¹ Based on its analysis of those recommendations, the Staff has proposed moving forward under the presumption that they will be implemented as adequate protection measures.¹² Of particular relevance here, the Staff has recommended that two be implemented before issuance of a COL.³⁶⁵ Further, the ACRS has determined that the need for these safety improvements will not be negated or rendered inappropriate by the acquisition of new information as the Staff completes ongoing reviews and analyses.¹³ I agree with the Staff's conclusions and path forward, but the Commission has not yet determined whether implementation will be based on adequate protection.

⁹ See Staff Requirements--SECY-11-0124.

¹⁰ See *generally* SECY-11-0124.

¹¹ See *generally* SECY-11-0137.

¹² SECY-11-0124 at 6.

³⁶⁵ Near-Term Report at 71-72.

¹³ Abdel-Khalik, Said, Chairman, ACRS, letter to Chairman Gregory Jaczko, "Initial ACRS Review of (1) the NRC Near-Term Task Force Report on Fukushima and (2) Staff's Recommended Actions to be Taken Without Delay" (Oct. 13, 2011) (ML1129A006).

The expectation that newly licensed reactors would incorporate new, Fukushima-related safety enhancements was an implicit underpinning of our decision not to halt new reactor licensing proceedings in response to multiple petitions asking, among other things, that we stay this proceeding.¹⁴ We found no imminent safety reason to halt our new reactor licensing process because there was sufficient time to implement applicable new requirements before operation, saying:

[L]icensing decisions for pending COL applications are months and, in many cases, years away and fuel loading into completed reactors is still further away; continuation of these reviews poses no immediate threat to public health and safety. Our regulatory processes provide sufficient time and avenues to ensure that design certifications and COLs satisfy any Commission-directed changes before any new power plant commences operations. This is demonstrated by the implementation strategy for new reactor licensing outlined in the Near-Term Report. When we adopt the Task Force recommendations or require more, or different, actions associated with certified design or COL applications, we have the authority to ensure that certified designs and combined licenses include appropriate Commission-directed changes before operation. We therefore find no imminent risk to public health and safety or to the common defense and security that necessitates a stay of new reactor licensing actions or adjudications.¹⁵

Now that the decision to license the first COLs is before us, we have an obligation to exercise this authority and require that all new safety enhancements be implemented before these new reactors begin operation. Knowing that new safety enhancements are under development, some of which I consider necessary for adequate protection, I cannot support authorizing operation with no more than an expectation that they will be timely implemented.

¹⁴ *Callaway*, CLI-11-5, 74 NRC at ____.

¹⁵ *Id.* at ____ (slip op. at 23–25) (footnotes omitted).

3. The Vogtle COLs Must Require Implementation of Fukushima Safety Enhancements Before Operation

We must include a binding requirement that all Fukushima-related safety enhancements be implemented before operation of the COLs. Unless we impose this requirement now, when the licenses are issued, we cannot be certain that they will be implemented before operation or, indeed, at all for two reasons. The first is our so-called “backfit” regulations that allow licensed reactors to avoid compliance with new safety enhancements based on considerations like implementation costs. The second is the difficulty of requiring timely compliance with new safety requirements that are not tied down in the license.

First, I will address the backfit regulations. These came about because of the evolving nature of our regulatory framework and the perception that it was causing unjustified regulatory instability and unpredictability. Over time, advances in our technical capabilities and knowledge have led to regulatory refinements that have significantly enhanced the safety of our nuclear fleet. But these improvements are not applied to every nuclear reactor. For example, when we impose new regulatory requirements that are important safety enhancements but not deemed necessary to ensure adequate protection of public health and safety, the NRC often does not require existing licensees to implement them based on considerations such as whether they are cost beneficial.¹⁶ As a consequence, the design and level of protection from natural phenomena differ among existing operating reactors depending on when the plant was constructed and licensed for operation.

While I can appreciate reasons for using this approach for reactors that were designed and constructed long before the new requirements could have been anticipated, I see no reason to relieve new reactor licensees from compliance with safety enhancements that arise from our

¹⁶ See 10 C.F.R. §§ 52.98(a) and 50.109(a)(3).

Fukushima review. Only limited, safety-related construction activities have been started at Vogtle units 3 and 4.¹⁷ Construction is expected to be completed in 2016,¹⁸ the same year we expect to have implemented all of the Fukushima recommendations. The process of completing and implementing Fukushima-related safety enhancements is proceeding expeditiously and transparently. We expect to issue a number of orders imposing new requirements relating to flooding, seismic events and station blackouts as well as information requests¹⁹ in March 2012. While the content of these orders and letters has already been discussed with licensees²⁰ they are only the initial phase of our post-Fukushima regulatory actions. As we move forward, we will continue to engage stakeholders and share our findings and initiatives. The accelerated pace of our work and the transparency of our regulatory processes will help minimize any disruptions or delays in the operation of the new reactors.

Secondly, I address the difficulty of requiring timely resolution of significant safety issues and prompt implementation of new requirements intended to address those safety issues. Our experience has shown that even when we identify serious safety concerns, licensee resolution of those concerns and implementation of necessary changes can be subject to lengthy delays. The starkest examples of these long standing safety issues are fire protection and emergency core cooling system sump performance (i.e., GSI-191). In both cases, we have longstanding compliance issues. For fire protection, compliance with our rules is necessary to ensure that a

¹⁷ The activities under way are site-preparation activities permitted by the first LWA.

¹⁸ <http://www.southerncompany.com/nuclearenergy/plan.aspx>

¹⁹ See *generally* 10 C.F.R. § 50.54(f).

²⁰ The draft 50.54(f) letters have been made available to the public. See Miller, G. Edward Project Manager, Office of New Reactor Regulation, to Robert J. Pascarelli (Jan. 13, 2012) (making publicly available the draft letter section 50.54(f) letter and enclosures) (ML12013A224) (package).

fire cannot disable or impede the function of equipment needed to safely shutdown a reactor. For sump performance, resolution of the issues is necessary to ensure that accident generated debris cannot impede the cooling of the reactor core following an accident. These long-standing safety issues have not been completely resolved for decades.

This history demonstrates the importance of using our regulatory tools to require compliance with our expectations. On the day before the Fukushima accident, any nuclear professional or regulator would likely have told you that a natural disaster causing a loss of containment at three reactors simultaneously anywhere in the world was not a credible event we need be concerned about. If nothing else, the Fukushima accident has demonstrated the potential consequences of that type of complacency. I believe one of the primary lessons we should take from the accident is the need to take proactive and decisive regulatory action. As I explain below, we have the regulatory tools to require that all Fukushima enhancements are implemented before operation in this license. We should not simply hope for the best. Any risk of incomplete implementation, delayed implementation or both is not acceptable when we have the regulatory tools to require timely and complete implementation.

4. A License Condition is The Appropriate Regulatory Vehicle to Require Implementation of Fukushima Safety Enhancements Before Operation

For the reasons discussed above, I am convinced we must include a condition requiring implementation of all Fukushima-related safety enhancements before operation into the COL. Anticipating the need to impose this license condition, I asked the Staff to recommend language for such a condition in my post-hearing questions. My questions followed submission of the Staff's information paper stating that the Commission could choose to adopt some or all of the Near-Term Task Force recommendations and implement them in the COLs through license

conditions or, alternatively, issue the COLs and later modify, add, or delete any terms or conditions of the COLs to reflect any new Commission requirements.²¹

In its response, the Staff declined to provide the requested language, citing two reasons. First, the Staff objected that the license condition would have to be drafted “such that it could not be interpreted as evidence that the staff does not have reasonable assurance of adequate protection of the public health and safety at the time the COL is issued.”²² But this is not the Staff’s decision to make in a mandatory hearing—it is a decision for the Commission. And, for the reasons discussed above, I cannot find reasonable assurance without the license condition.

The Staff also said that it did not have sufficient information to draft a viable license condition. But the Staff has performed an extensive assessment of the Tier 1 Task Force recommendations to determine the regulatory activities that will be necessary to implement them along with an estimated schedule and resource impacts.²³ To take one example, the Staff recommended issuing orders requiring licensees to reevaluate and upgrade seismic and flooding protection of structures systems and components for each operating reactor.²⁴ The Staff concluded that current regulatory guidance is sufficient to permit licensee reevaluations,²⁵ and suggested continued stakeholder interactions to discuss and define how compliance can be

²¹ See Ex. NRC00003, Staff Testimony, at 9.

²² See Ex. NRC000015, Staff Post-Hearing Response, at 12.

²³ SECY-11-0137.

²⁴ Enclosure to SECY-11-0137, “Staff Assessment and Prioritization of NTTF Recommendations,” at 4.

²⁵ *Id.* at 5.

achieved.²⁶ This regulatory recommendation, like those for the remaining Tier 1 recommendations, is sufficiently concrete and specific to include in a license condition.

While we do not yet know the precise details of all new safety requirements, this does not—as the Staff suggests—mean that this license condition would be invalid. All Fukushima-related requirements are subject to review and approval by the Commission and will be implemented through our normal regulatory processes. By the time verification is necessary, we will know the precise details of those requirements. This satisfies the test set forth by the Commission in *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-00-13, 52 NRC 23, 34 (2000), that the Staff verification be a straightforward matter of applying a defined set of requirements, i.e., a ministerial action. I do not consider the fact we do not yet know the precise details of all those requirements to be an obstacle from requiring this or any other new licensee from coming into compliance before initiating operations. Most importantly, the timing of when those details are developed does not diminish the ability of a license condition to ensure compliance. All licensees must comply—at all times—with the conditions of their licenses. In contrast, as I discuss above, regulations issued after the license can be subject to “backfit” exceptions and, in practice, lengthy delays in licensee compliance. Therefore, a license condition is the strongest regulatory tool for ensuring that all Fukushima-related safety enhancements are imposed before operation.

My judgment is informed by the Commission’s actions following the most serious accident at a reactor in the United States, the Three Mile Island (TMI) accident that occurred on March 28, 1979. Like Fukushima, the TMI accident prompted us to undertake a comprehensive reassessment of the safety of the operations of our nation’s nuclear reactors. While that was

²⁶ *Id.* at 6.

under way, the Commission implemented a “licensing pause” to ensure that lessons learned from the accident were appropriately accounted for with respect to operating reactors and new reactor applications that were under review.

The comprehensive review following the TMI accident, like our review of the Fukushima accident, resulted in recommendations for significant safety enhancements. Following TMI, the Commission expressly considered the applicability of those recommendations to pending license applications for operation of new nuclear reactors. The Commission identified near term recommendations that new operating licensees would be required to implement before operation. License conditions were imposed requiring compliance with those recommendations, called “near term operating license requirements,” before fuel load. One such license²⁷ included conditions requiring completion of actions from the TMI Action Plan, Near Term Operating License (NTOL) Requirements, dated February 6, 1980.

While the license conditions described requirements generally, precise details were missing because they had not yet been developed. Notably, for all of the conditions, the license said they “shall be completed to the satisfaction of the Commission.”²⁸ The precise details concerning implementation were developed and documented later, in NUREG-0737 “Clarification of TMI Action Plan Requirements” issued in November 1980, and 10 C.F.R. § 50.34(f), “Additional TMI-related requirements,” promulgated in January 1982.²⁹

²⁷ Ross, D.F., Office of Nuclear Reactor Regulation, NRC, letter to J.H. Ferguson, Virginia Electric and Power Co. “North Anna Power Station, Unit No. 2 – Issuance of License NPF-7” (Apr. 11, 1980) (ML013520351).

²⁸ *Id.* at 5.

²⁹ See Final Rule, Licensing Requirements for Pending Construction Permit and Manufacturing License Applications, 47 Fed. Reg. 2301 (Jan.15, 1982).

Thus, within one year of the TMI accident, the Commission had not only identified the actions that needed to be implemented to improve safety, but had taken decisive regulatory actions to ensure those actions would be implemented prior to the operation of new reactors. Then, as now, we had identified actions to enhance safety but had not yet developed all of the implementing details. I believe we should follow that example by imposing a license condition requiring that all Fukushima recommendations are implemented before these new reactor units are allowed to operate.

Imposing this license condition should not place an undue burden on this or any future COL holder. We are working to have all Fukushima recommendations implemented by 2016, the same year that construction of these new reactors is expected to be complete. We have already shared detailed information regarding our expectations in the draft 50.54(f) letters and will continue to apprise COL applicants and licensees as our work proceeds. In this critical time, when the public is naturally rethinking the future of nuclear energy, it is essential that our actions support public confidence in the safety of our nation's nuclear reactors.

I am confident that we can authorize the issuance of these COLs now with a license condition requiring compliance with Fukushima safety enhancements before operation. If, as the Staff suggests, our regulatory processes have not proceeded to a point where we can impose this license condition, then we cannot be ready to issue these COLs. Ultimately, I cannot find reasonable assurance that these reactors will be operated safely without that requirement in the license, whether it is issued now or in the future.

III. CONCLUSION

I agree with my colleagues that the Staff's review was sufficient to support issuance of these licenses under the regulatory requirements in effect before the Fukushima accident. But, unlike my colleagues, I do not believe we should authorize the operation of these new reactors without imposing a license condition that requires the implementation of all Fukushima-related

safety enhancements before operation. The recent accident at Fukushima already has, and will continue to, provide valuable information and insights that will improve our regulatory requirements, programs and processes and, with their implementation, improve the safety of our nuclear reactors. Fortunately, catastrophic accidents like these happen extremely rarely. But when they do, they provide invaluable real world experience and information about events we can normally only hypothesize and consequences we can normally only project in mathematical models. In the aftermath of the catastrophic events at Fukushima, I cannot authorize the operation of these new reactors until we fully synthesize and analyze that information and ensure that all the lessons we learn are fully implemented. If our regulatory processes have not proceeded to a point where we can require implementation before operation as a license condition, then we are not yet ready to issue these licenses.

§ 424.21(c) of subchapter E, there shall appear on the label contiguous to the product name a statement to indicate the use of sodium alginate, calcium carbonate, lactic acid, and calcium lactate.

* * * * *

■ 14. In § 381.133, revise paragraph (b)(9)(xviii) to read as follows:

§ 381.133 Generically approved labeling.

* * * * *

(b) * * *

(9) * * *

(xviii) Changes reflecting a change in the quantity of an ingredient shown in the formula without a change in the order of predominance shown on the label, provided that the change in the quantity of ingredients complies with any minimum or maximum limits for the use of such ingredients prescribed in subpart P of this part and § 424.21(c) of subchapter E;

* * * * *

Done in Washington, DC, on December 23, 2011.

Alfred V. Almanza,
Administrator.

[FR Doc. 2011-33427 Filed 12-29-11; 8:45 am]

BILLING CODE 3410-DM-P

NUCLEAR REGULATORY COMMISSION

10 CFR Part 52

RIN 3150-A181

[NRC-2010-0131]

AP1000 Design Certification Amendment

AGENCY: Nuclear Regulatory Commission.

ACTION: Final rule.

SUMMARY: The U.S. Nuclear Regulatory Commission (NRC or Commission) is amending its regulations to certify an amendment to the AP1000 standard plant design. The amendment replaces the combined license (COL) information items and design acceptance criteria (DAC) with specific design information, addresses the effects of the impact of a large commercial aircraft, incorporates design improvements, and increases standardization of the design. This action is necessary so that applicants or licensees intending to construct and operate an AP1000 design may do so by referencing this regulation (AP1000 design certification rule (DCR)), and need not demonstrate in their applications the safety of the certified design as amended. The applicant for

this amendment to the AP1000 design is Westinghouse Electric Company, LLC (Westinghouse).

DATES: The effective date of this rule is December 30, 2011. The incorporation by reference of certain material specified in this regulation is approved by the Director of the Office of the Federal Register as of December 30, 2011. The applicability date of this rule for those entities who receive actual notice of this rule is the date of receipt of this rule.

ADDRESSES: You can access publicly available documents related to this action (see Section VI. Availability of Documents) using the following methods:

- *NRC's Public Document Room (PDR):* The public may examine and have copied, for a fee, publicly available documents at the NRC's PDR, O1-F21, One White Flint North, 11555 Rockville Pike, Rockville, Maryland 20852.

- *NRC's Agencywide Documents Access and Management System (ADAMS):* Publicly available documents created or received at the NRC are available online in the NRC Library at <http://www.nrc.gov/reading-rm/adams.html>. From this page, the public can gain entry into ADAMS, which provides text and image files of the NRC's public documents. If you do not have access to ADAMS or if there are problems in accessing the documents located in ADAMS, contact the NRC's PDR reference staff at 1-(800) 397-4209, (301) 415-4737, or by email to pdr.resource@nrc.gov.

- *Federal Rulemaking Web site:* Public comments and supporting materials related to this final rule can be found at <http://www.regulations.gov> by searching on Docket ID NRC-2010-0131. Address questions and concerns regarding NRC dockets to Carol Gallagher; telephone at (301) 492-3668; email: Carol.Gallagher@nrc.gov.

FOR FURTHER INFORMATION CONTACT: Ms. Serita Sanders, Office of New Reactors, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; telephone at (301) 415-2956; email: serita.sanders@nrc.gov.

SUPPLEMENTARY INFORMATION:

I. Background

II. Summary of Analysis of Public Comments on the AP1000 Proposed Rule

- A. Overview of Public Comments
- B. Description of Key Structures of the AP1000 Design
- C. Significant Public Comments and Overall NRC Responses

III. Discussion

- A. Technical Evaluation of Westinghouse Amendment to the AP1000 Design
- B. Changes to Appendix D

- C. Immediate Effectiveness of Final Rule: Provision of Actual Notice to Southern Nuclear Operating Company

IV. Section-by-Section Analysis

- A. Scope and Contents (Section III)
- B. Additional Requirements and Restrictions (Section IV)
- C. Applicable Regulations (Section V)
- D. Issue Resolution (Section VI)
- E. Processes for Changes and Departures (Section VIII)
- F. Records and Reporting (Section X)
- V. Agreement State Compatibility
- VI. Availability of Documents
- VII. Voluntary Consensus Standards
- VIII. Finding of No Significant Environmental Impact: Availability
- IX. Paperwork Reduction Act Statement
- X. Regulatory Analysis
- XI. Regulatory Flexibility Act Certification
- XII. Backfitting and Issue Finality
- XIII. Congressional Review Act

I. Background

Title 10 of the Code of Federal Regulations (10 CFR), Part 52, "Licenses, Certifications, and Approvals for Nuclear Power Plants," Subpart B, presents the process for obtaining standard design certifications. Section 52.63, "Finality of standard design certifications," provides criteria for determining when the Commission may amend the certification information for a previously certified standard design in response to a request for amendment from any person.

The NRC originally approved the AP1000 design certification in a final rule in 2006 (71 FR 4464; January 27, 2006). The final AP1000 DCR incorporates by reference Revision 15 of the design control document (DCD) (ADAMS Accession No. ML053460400), which describes the AP1000 certified design. During its initial certification of the AP1000 design, the NRC issued a final safety evaluation report (FSER) for the AP1000 as NUREG-1793, "Final Safety Evaluation Report Related to Certification of the AP1000 Standard Design," in September 2004 (ADAMS Accession No. ML043570339) and Supplement No. 1 to NUREG-1793 (ADAMS Accession No. ML053410203).

From March 2006 through May 2007, NuStart Energy Development, LLC (NuStart)¹ and Westinghouse provided the NRC with a number of technical reports (TRs) for pre-application review of a possible amendment to the approved AP1000 certified design, in order to: (1) close specific, generically applicable COL information items (information to be supplied by COL

¹ The NuStart member companies are: Constellation Generation Group, LLC, Duke Energy Corporation, EDF-International North America, Inc., Entergy Nuclear, Inc., Exelon Generation Company, LLC, Florida Power and Light Company, Progress Energy, and Southern Company Services, Inc.

applicants/holders) in the AP1000 certified standard design; (2) identify standard design changes resulting from the AP1000 detailed design efforts; and (3) provide specific standard design information in areas or for topics where the AP1000 DCD was focused on the design process and acceptance criteria. TRs typically addressed a topical area (e.g., redesign of a component, structure or process) and included the technical details of a proposed change, design standards, analyses and justifications as needed, proposed changes to the DCD, and Westinghouse's assessment of the applicable regulatory criteria (e.g., the assessment of the criteria in 10 CFR part 52, Appendix D, Section VIII, "Processes for Changes and Departures"). The NRC identified issues associated with the TRs and engaged Westinghouse in requests for additional information and meetings during the pre-application phase to resolve them.

On May 26, 2007, Westinghouse submitted, via transmittal letter (ADAMS Accession No. ML071580757), an application to amend the AP1000 DCR. The application included Revision 16 of the DCD (ADAMS Accession No. ML071580939). This application was supplemented by letters dated October 26 (ADAMS Accession No. ML073120415), November 2 (ADAMS Accession No. ML073090471), and December 12, 2007 (ADAMS Accession No. ML073610541), and January 11 (ADAMS Accession No. ML080150513) and January 14, 2008 (ADAMS Accession No. ML080220389). The application noted, in part, that:

(1) Generic amendments to the design certification, including additional design information to resolve DAC and design-related COL information items, as well as design information to make corrections and changes, would result in further standardization and improved licensing efficiency for the multiple COL applications referencing the AP1000 DCR that were planned for submittal in late 2007 and early 2008.

(2) Westinghouse, in conjunction with NuStart, has been preparing TRs since late 2005. These TRs were developed with input, review, comment, and other technical oversight provided by NuStart members, including the prospective AP1000 COL applicants. Submittal of these TRs to the NRC was initiated in March 2006. The TRs contain discussion of the technical changes and supplemental information that is used

to support the detailed information contained in the DCD.

In Attachment 2 to the May 26, 2007, application, Westinghouse identified the criteria of 10 CFR 52.63(a)(1) that apply to the changes described in each TR and associated COL information items, if applicable.

On January 18, 2008, the NRC notified Westinghouse that it accepted the May 26, 2007, application, as supplemented, for docketing (Docket No. 52-006) and published a notice of acceptance (ADAMS Accession No. ML073600743) in the **Federal Register** (73 FR 4926; January 28, 2008). On September 22, 2008, Westinghouse submitted Revision 17 to the AP1000 DCD. Revision 17 contained changes to the DCD that had been previously accepted by the NRC in the course of its review of Revision 16 of the DCD. In addition, Revision 17 proposed changes to DAC in the areas of piping design (Chapter 3), instrumentation and control (I&C) systems (Chapter 7) and human factors engineering (HFE) (Chapter 18).

The NRC issued guidance on the finalization of design changes in Interim Staff Guidance (ISG) DC/COL-ISG-011, "Finalizing Licensing-basis Information," (ADAMS Accession No. ML092890623), which describes various categories of design changes that should not be deferred and those that should be included in the DCR.

By letter dated January 20, 2010, Westinghouse submitted a list of design change packages that would be included in Revision 18 of the AP1000 DCD (ADAMS Accession No. ML100250873). A number of subsequent submittals were made by Westinghouse to narrow the focus of those design changes to the categories of changes that should not be deferred, as recommended by DC/COL-ISG-011.

Revision 18 to the AP1000 DCD (ADAMS Accession Nos. ML103480059 and ML103480572) was submitted on December 1, 2010, and contains both proposed changes previously described in the design change packages and changes already accepted by the NRC in the review process of Revision 17 to the AP1000 DCD.

In the course of its ongoing review of the amendment application, the NRC determined that changes from information in Revision 15 to the DCD were needed. In response to NRC questions, Westinghouse proposed such changes. Once the NRC was satisfied

with these DCD markups, they were documented in the advance safety evaluation report (SER) as confirmatory items (CIs). The use of CIs is restricted to cases where the NRC has reviewed and approved specific DCD proposals. With the review of Revision 18, the NRC has confirmed that Westinghouse has made those changes to the DCD accepted by the NRC that were not addressed in Revision 17 to the AP1000 DCD. For the final rule, the NRC has completed the review of the CIs and prepared a FSER reflecting that action. The CIs were closed based upon an acceptable comparison between the revised DCD text and the text required by the CI. As further discussed later, Revision 19 is the version being certified in the final rule.

In order to simplify the NRC's review of the design change documentation, and to simplify subsequent review by the NRC's Advisory Committee on Reactor Safeguards (ACRS), the design changes pursuant to DC/COL-ISG-011 are reviewed in a separate chapter (Chapter 23) of the FSER. This chapter indicates which areas of the DCD are affected by each design change and the letters from Westinghouse that submitted them. In some cases, the NRC's review of the design changes reviewed in Chapter 23 may be incorporated into the chapters of the FSER where this material would normally be addressed because of the relationship between individual design changes and the review of prior DCD changes from Revisions 16 and 17 of the DCD.

The Westinghouse Revision 18 DCD includes an enclosure providing a cross-reference to the DCD changes and the applicable 10 CFR 52.63(a)(1) criteria. Revision 17 provides a similar cross-reference within the September 22, 2008, Westinghouse letter for those changes associated with the revised DCD. Revision 16, on the other hand, uses TRs to identify the DCD changes and lists the corresponding applicable 10 CFR 52.63(a)(1) criteria via Westinghouse letter, dated May 26, 2007 (Table 1). Revision 19 has a cross-reference similar to Revisions 17 and 18.

As of the date of this document, the application for amendment of the AP1000 design certification has been referenced in the following COL applications:

Vogtle, Units 3 and 4	Docket No. 05200025/6	73 FR 33118.
Bellefonte Nuclear Station, Units 3 and 4	Docket No. 05200014/5	73 FR 4923.
Levy County, Units 1 and 2	Docket Nos. 05200029/30	73 FR 60726.
Shearon Harris, Units 2 and 3	Docket Nos. 05200022/3	73 FR 21995.
Turkey Point, Units 6 and 7	Docket Nos. 05200040/1	74 FR 51621.

Virgil C. Summer, Units 2 and 3	Docket Nos. 05200027/8	73 FR 45793.
William States Lee III, Units 1 and 2	Docket Nos. 05200018/9	73 FR 11156.

II. Summary of Analysis of Public Comments on the AP1000 Proposed Rule

A. Overview of Public Comments

The NRC published the proposed rule amending the AP1000 DCR in the **Federal Register** on February 24, 2011 (76 FR 10269). The public comment period for the proposed rule closed on May 10, 2011. The NRC received a large number of comment submissions for the proposed rule (AP1000 rulemaking) from members of the public, non-governmental organizations, and the nuclear industry. A comment submission means a communication or document submitted to the NRC by an individual or entity, with one or more distinct comments addressing a subject or an issue. A comment, on the other hand, refers to statements made in the submission addressing a subject or issue.

The NRC received more than 13,500 comment submissions, which appear to be variations of two letters with largely similar content. These comment submissions also contained approximately 100 separate comments. The NRC also received 66 additional comment submissions containing over 100 comments. Finally, the NRC received four “petitions” to suspend or terminate this rulemaking, which are being treated as public comments. The petitions set forth approximately 39 comments. As stated in the proposed rule, “Comments received after May 10, 2011 will be considered if it is practical to do so, but assurance of consideration of comments received after this date cannot be given.” The NRC determined that it was practical to consider comment submissions received on or before June 30, 2011. Five of the comment submissions were received after the 75-day comment period closed, and the NRC has addressed these late-filed comment submissions as part of this final rule (the numbers above reflect those late-filed comments, which were deemed practical to consider). These late comment submissions consisted of one petition, two submissions requesting the NRC to reconsider comments made during the initial AP1000 DC rulemaking, and two submissions with supplemental information to support suspending this rulemaking. The NRC also received several comment submissions after June 30, 2011. The NRC deemed that it was not practical to consider, in this

rulemaking, comments received after June 30, 2011 and, therefore, does not provide responses to those comments. The NRC has briefly reviewed them to ensure that they contain no health and safety matters.

There were several commenters in favor of completing the AP1000 rulemaking, while some were unconditionally opposed to completing the proposed amendment to the AP1000 design. The vast majority of commenters favored delaying (in some fashion) the AP1000 amendment rulemaking until lessons are learned from the Fukushima Daiichi Nuclear Power Plant (Fukushima) accident that occurred on March 11, 2011, and the NRC applies the lessons learned to U.S. nuclear power plants, including the AP1000 design.

Before responding to specific comments based upon the Fukushima Daiichi Nuclear Power Plant Event, the NRC is providing this discussion about the ongoing actions underway in response to this event. The Commission created a Near-Term Task Force (NTTF) to conduct an analysis of the lessons that can be learned from the event. The task force was established to conduct a systematic and methodical review of NRC processes and regulations to determine whether the NRC should make additional improvements to its regulatory system. The NTTF issued a report (ADAMS Accession No. ML111861807) evaluating currently available technical and operational information from the event, and presented a set of recommendations to the Commission. The task force concluded that continued operation and continued licensing activities do not pose an imminent risk to public health and safety. Among other recommendations, the NTTF supports completing the AP1000 design certification rulemaking activity without delay (see pages 71–72 of the report).

In an August 19, 2011, Staff Requirements Memoranda (SRM) (ADAMS Accession No. ML112310021), the Commission set forth actions related to the NTTF report together with a schedule for the conduct of those actions. Two of those actions have been completed and are documented in the following reports: “Recommended Actions to Be Taken Without Delay from the Near-Term Task Force Report,” September 9, 2011 (SECY–11–0124) (ADAMS Accession No. ML11245A127) and “Prioritization of Recommended

Actions To Be Taken In Response to Fukushima Lessons Learned,” October 3, 2011 (SECY–11–0137) (ADAMS Accession No. ML11269A204).

The NTTF recommendations relevant to the AP1000 design certification are limited to: Seismic and flooding protection (Recommendation 2); mitigation of prolonged station blackout (Recommendation 4); and enhanced instrumentation and makeup capability for spent fuel pools (Recommendation 7). The task force concluded that, by the nature of its passive design and inherent 72-hour coping capability, the AP1000 design has many of the features and attributes necessary to address the Task Force recommendations, and the NRC concludes that no changes to the AP1000 DCR are required at this time. Moreover, even if the Commission concludes at a later time that some additional action is needed for the AP1000, the NRC has ample opportunity and legal authority to modify the AP1000 DCR to implement NRC-required design changes, as well as to take any necessary action to ensure that holders of COLs referencing the AP1000 also make the necessary design changes.

The NRC organized the comments on the AP1000 amendment into the following subject areas: Fukushima-related, shield building, containment, severe accident mitigation design alternative (SAMDA), spent fuel, environmental, other AP1000 topics, and general concerns. Some comments opposed the AP1000 rulemaking until purported shield building flaws are corrected. Many comments opposed completing the AP1000 rulemaking for reasons outside the scope of this rulemaking. For example, many comments opposed the completion of the AP1000 rulemaking until there is resolution of high level radioactive waste storage issues.

Due to the large number of comments received and the length of the NRC responses provided, this section of the statement of considerations (SOC) for the final rule amending the AP1000 design certification only provides a summary of the categories of comments with a general description of the resolution of those comments. A detailed description of comments and the NRC’s response is contained in a comment response document, which is available electronically through ADAMS Accession No. ML113480018.

B. Description of Key Structures of the AP1000 Design

This section is provided to help readers understand the issues and the NRC's responses. The following is a brief description of the three design features that were commented on, and a summary of the design changes that are being approved by the AP1000 amendment.

Containment

The containment vessel is a single steel pressure vessel, inside which is located the reactor vessel with the nuclear fuel, the steam generators, the refueling water storage tank, and various equipment for power generation, refueling, and emergency response, and supporting electric power, control, and communications equipment.

The steel containment building stands independently inside the shield building. The containment's primary purpose is to retain pressure up to the maximum "design pressure" should an accident occur in which the reactor vessel or associated equipment releases reactor coolant into the containment atmosphere. The containment also acts as the passive safety-grade interface to the ultimate heat sink.

The primary containment vessel prevents the uncontrolled release of radioactivity to the environment. The AP1000 primary containment consists of a cylindrical steel shell with ellipsoidal upper and lower heads. The steel thickness is increased in the transition region where the cylindrical shell enters the foundation concrete to provide additional margin in consideration of corrosion.

Safety-related coatings are applied to both the interior and exterior surfaces of the containment vessel. These coatings have several functions. For the exterior surface, the corrosion-resistant paint or coating for the containment vessel is specified to enhance surface wetability and film formation, as well as for corrosion protection. Wetability and film formation are important to the passive cooling function. For the interior containment surfaces, the coatings are designed to remain intact within the zone-of-influence of any postulated pipe break (or to result in settling of any resultant debris) to facilitate heat transfer to the containment vessel and for corrosion protection. Periodic inspections are required of the containment internal and external surfaces and of the coatings on those surfaces.

As the interface to the ultimate heat sink (the surrounding atmosphere), the primary containment is an integral

component of the passive containment cooling system. The exterior of the containment vessel provides a surface for evaporative film cooling and works in conjunction with the natural draft airflow created by the shield building baffle and chimney arrangement to reduce the pressure and temperature of the containment atmosphere following a design-basis accident (DBA). The source of water for the evaporative cooling is the passive containment cooling water storage tank, located at the top of the shield building.

Design changes within the scope of the amendment with respect to the containment vessel are certain details about coatings with respect to long-term core cooling capability and the calculated peak accident pressure (from correction of errors). Other changes included addition of a vacuum relief system to provide protection for external pressure events.

Shield Building

The shield building performs multiple functions (e.g., to provide a biological shield to high-energy radiation, to support the primary containment cooling water storage tank on the roof, to shield the steel containment from high-velocity debris that may be generated by tornadoes or other natural phenomena, to protect the containment from aircraft impact, and to function as a "chimney" to enhance airflow over the primary steel containment to remove heat from the containment and reduce containment pressure in the event that post-accident cooling of the containment would be necessary). While other designs have included shield buildings of reinforced concrete, with the exception of the AP600 design, they did not perform cooling functions. The shield building is not intended to be a pressure retaining structure or to mitigate the effects of a containment failure. The shield building construction is primarily a steel-concrete composite module wall, with a reinforced concrete roof and reinforced concrete where the wall meets the foundation. The wall is appropriately reinforced and sized where the composite wall module joins the reinforced concrete sections and as appropriate to accommodate seismic loads and aircraft loads. This design is new to the amendment; previously the structure was all reinforced concrete.

The shield building and the containment are designed with a gap, or annulus, that ensures that both the shield building and steel containment are physically separate, excluding their foundation, and are considered to be "freestanding." In the shield building, air flows from the environment through

openings in the shield building wall. The air then flows down along an interior baffle, turns toward the steel containment vessel, and then rises alongside the steel containment vessel where it absorbs heat. This heated air naturally rises and is then exhausted through the chimney located in the center of the primary containment cooling water storage tank.

Design changes to the passive containment cooling system and shield building principally involve the redesign of the shield building to a steel-composite design, with related changes to air inlet sizing, height of the building, and gratings above the chimney opening. Revised safety analyses were performed to confirm adequate containment pressure control, capability of the shield building to withstand external events (tornado, seismic), as well as aircraft impact assessment. The shield building functions to protect the containment and facilitate passive containment cooling were not changed in the current amendment.

Spent Fuel Pool

The spent fuel pool (SFP) is a safety-related structure that is housed in the auxiliary building, which provides protection from aircraft impact or other external hazards.

For the first 72 hours after loss of normal SFP cooling, including response to a station blackout (SBO) event, the SFP relies upon the natural heat capacity of the water in the pool to absorb the heat from spent fuel elements, and boil the water in the pool. Thus, the safety-related means of heat removal for 72 hours is by heat-up of the volume of water in the pool and in safety-related water sources such as the cask washdown pit. The AP1000 design (as initially certified) included safety-related water level indication with readout and alarm in the main control room. A nonsafety-related spent fuel pool cooling system is also installed. Onsite, protected sources of water are available for up to 7 days, controlled from areas away from the pool. During high heat load conditions in the pool, two sources of alternating current (ac) power are required to be available. Water can be sprayed into the pool from two nozzle headers on opposite sides of the pool. A cross-connection also exists to the residual heat removal system. Those design features needed to provide make-up water after 72 hours and up to 7 days, such as the passive containment cooling water ancillary storage tank, and ancillary diesel generators, are protected from external hazards including the

safe-shutdown earthquake (SSE), tornado, and flooding.

Design changes within the scope of the current amendment are the number of fuel assemblies stored, the rack designs for new and spent fuel storage, the criticality analysis for spent fuel in the pool (including use of boron material attached to the storage cells), installation of spray headers, and credit for additional water sources for pool makeup.

C. Significant Public Comments and Overall NRC Responses

Comment: Many comments noted the NRC staff nonconcurrence on the shield building design and requested that the NRC should reconsider the views expressed in the nonconcurrence.

NRC Response: The NRC disagrees with these comments. Professional opinions may vary, and the NRC has mechanisms in place for making differing views known.

NRC employees can choose to exercise the nonconcurrence process as a way of communicating their views and ensuring their opinions are heard by NRC management. The NRC staff individual who authored the nonconcurrence used this open process to express concerns regarding the safety of the AP1000 shield building design. The specific concerns and staff response to the nonconcurrence are publically available (ADAMS Accession No. ML103370648).

The NRC concluded that the AP1000 shield building design is safe, meets the Commission's regulations, and provides reasonable assurance that the building will remain functional under design-basis loads. The comments did not offer new information on the matters related to the nonconcurrence nor did they include a rationale showing the NRC's resolution of the technical matters raised in the nonconcurrence to be incorrect. No change was made to the final rule, DCD, or environmental assessment (EA) as a result of these comments.

Comment: One comment noted that the spent fuel racks' design in Revision 18 increased the density. The higher density fuel pools require boron shields between stored assemblies to reduce the risk of criticality. The comment stated that such re-racking introduces potential partial loss of cooling water, possible fire of spent fuel assemblies, and release of large inventories of cesium-137 and other radionuclides.

NRC Response: The NRC agrees that, under the proposed amendment of the AP1000 DCR, the capacity of the spent fuel pool racks would be increased from 619 to 889 (rather than 884 as asserted

by the comment) fuel assemblies, and that the increased density of fuel assemblies being stored in the spent fuel pool requires the use of boron shields as part of the amendment.

However, the NRC disagrees with this comment's assertion that the increased capacity and density would introduce potential loss of cooling water, resulting in a possible fire of spent fuel assemblies and large releases of radionuclides. The comment did not explain how increased fuel capacity and concomitant increase in density of the spent fuel pool would "introduce" potential loss of cooling water as compared with the capacity and density described in DCD Revision 15. The NRC does not believe that the increased capacity and density leads to a new (previously un-described or unconsidered) way of losing spent fuel pool cooling water. The NRC evaluated the proposed increase in fuel assembly capacity and density, and the effectiveness of the Westinghouse-proposed boron shields to ensure against re-criticality of the spent fuel stored in the spent fuel pool. The AP1000 DCD Revision 18 SFP criticality analysis was reviewed following the guidance found in NUREG-0800 Section 9.1.1, Revision 3, "Criticality Safety of Fresh and Spent Fuel Storage and Handling," to ensure that the applicant is in compliance with the applicable regulations (General Design Criterion 62, "Prevention of Criticality in Fuel Storage and Handling," and 10 CFR 50.68, "Criticality Accident Requirements"). These requirements are generally performance-based with limitations on the reactivity values, and as such, there are no specific physical design requirements such as minimum geometric spacing which must be met. The AP1000 SFP criticality analysis demonstrates that, with the proposed storage arrangement of the SFP, the reactivity requirements are met, and no regulations are violated. Therefore, the NRC determined that the AP1000 spent fuel pool storage arrangement is acceptable. No change was made to the rule, the DCD, or the EA as a result of this comment.

Comment: Several comments stated that given the recent event at the Fukushima plant in Japan, the 75-day comment period is not adequate and should be extended.

NRC Response: The NRC disagrees with this comment, and believes that the 75-day public comment period, which is consistent with most other NRC technical rulemakings, is adequate. The Commission established a NTTF to review relevant NRC regulatory requirements, programs, and processes,

and their implementation, and to recommend whether the agency should make near-term improvements to its regulatory system. The public comment period for the proposed rule on the AP1000 design certification amendment closed on May 10, 2011, and the NTTF issued its report (ML111861807) on July 12, 2011. The NTTF considered the AP1000 design certification amendment in its report and noted that it has passive safety systems. By nature of their passive designs and inherent 72-hour coping capability for core, containment, and spent fuel pool cooling, the AP1000 designs have many of the design features and attributes necessary to address the NTTF recommendations. The NTTF supports completing the AP1000 design certification rulemaking activities without delay.

The NRC believes that the AP1000 final rulemaking can and should proceed without extending the public comment period because: (i) The NRC has determined that the AP1000 design certification amendment meets current regulations; (ii) the NRC will provide an opportunity for the public to provide input on NTTF recommendations, and (iii) if the NRC imposes additional requirements on the AP1000 design, existing regulations already define the process for doing so. No change was made to the rule, the DCD, or the EA as a result of this comment.

Comment: One comment questioned whether the NRC endorsed NQA-1-1994 for work performed for the AP1000 project, where the NRC documented that NQA-1-1994 adequately meets the NRC requirements in the Code of Federal Regulations, and whether the Westinghouse's AP1000 design meets the requirements of 10 CFR Part 50, Appendix B.

NRC Response: The NRC has, in application-specific requests for NRC approval of quality assurance programs, approved the use of NQA-1-1994 as an acceptable method to meet the requirements of Appendix B to 10 CFR Part 50. The NRC's approvals of NQA-1-1994 have been documented in NRC SERs on those requests.

The NRC believes that the AP1000 design meets the requirements of 10 CFR Part 50, Appendix B. By letter dated February 23, 1996 (ADAMS Accession No. ML11280A309), the NRC issued a safety evaluation report approving Revision 1 of the Westinghouse Quality Systems Manual (Westinghouse Quality Assurance (QA) Manual). The Westinghouse QA Manual is based upon the guidance in NQA-1-1994. The NRC found that the Westinghouse QA Manual meets all the

requirements of Appendix B. In addition, the NRC concluded in its FSER for the amendment that Revision 5 of the Westinghouse Quality Systems Manual, as described in the AP1000 Design Control Document, Revision 17, meets the criteria of Appendix B with respect to AP1000 quality assurance. No change was made to the final rule, the DCD, or the EA as a result of this comment.

Comment: Several comments claimed the containment design was flawed because the containment cooling method includes convective air flow and because the steel containment could be subject to corrosion. As a result, they state that Westinghouse has not satisfactorily proved that the thin steel containment shell over the reactor would be effective during severe accidents.

NRC Response: The NRC considers these comments to be outside the scope of the rulemaking amending the AP1000 DCR. These features of the AP1000 design that demonstrate that the containment shell would be effective during severe accident conditions, as well as resistant to corrosion have already been certified with Revision 15. The proposed amendment to the AP1000 design does not propose any modification to these features and, therefore, the comment is outside the scope of this rulemaking.

The NRC considers a single metal containment vessel to be acceptable if it meets the requirements of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section III, Subsection NE. This part of the ASME Code contains requirements for the material, design, fabrication, examination, inspection, testing, and overpressure protection of metal containment vessels. Many such vessels are in use at operating nuclear power plants. The AP1000 containment is designed to meet ASME requirements for a pressure of 6.9 kPa (59 psi) and a temperature of 149 degrees C (300 degrees F). Its thickness includes an allowance for corrosion that may occur over the 60-year design life of the plant.

The AP1000 containment building has an additional function—transferring heat from containment to the atmosphere. The staff has reviewed the applicant's analysis, which shows that the containment building and the shield building, working as a system, would transfer heat to the atmosphere during severe accidents as well as design-basis earthquakes. Experiments were conducted to demonstrate that these predictions are based upon physical phenomena that can be relied upon to work even when there is no ac power.

In short, Westinghouse has demonstrated that the containment building is robust and will perform its safety functions effectively if a severe accident occurs at an AP1000 plant.

The commenters did not offer any basis for Westinghouse to revise its design or for the NRC to revise its evaluation. No change was made to the final rule, the DCD, or the EA as a result of these comments.

Comment: Many comments stated that Westinghouse has not proven that the reactor could be properly cooled in conditions similar to those at Fukushima.

NRC Response: The NRC considers these comments to be outside the scope of the rulemaking amending the AP1000 DCR. The Fukushima event involved an extended SBO (loss of offsite and onsite ac power). Westinghouse has shown that the AP1000 includes design features that keep the reactor properly cooled under these conditions. The features of the AP1000 design ensuring that the reactor can be properly cooled in an extended SBO are already part of the certified design for the AP1000, and are not being changed or modified by this final rule amending the AP1000 design. Therefore, these comments are out of scope for this rulemaking.

In addition, even if these comments are assumed to be within the scope of the rulemaking, the NRC disagrees with the comment. If a severe accident occurs, seriously damaging the core, the AP1000 containment can be adequately cooled for 3 days—even if a loss-of-coolant accident (LOCA) occurred and without any ac power—because the AP1000 containment is cooled by gravity-fed water from a tank located at the top of the containment. After 3 days with no ac power, only a small “ancillary” generator is needed. This generator is used to power a small pump that re-fills the tank that supplies water to the outside surface of the containment. The generator could be brought to the site; however, in an AP1000 design, two such generators are installed in a seismically qualified structure (along with fuel and supporting equipment). After 1 week, the containment can be cooled indefinitely as long as fuel for at least one ancillary generator is provided and there is water to replenish the water tank above the shield building, as discussed in the DCD.

These comments did not present any basis that would support an NRC determination that the AP1000 design is deficient in this regard. No change was made to the final rule, the DCD, or the EA as a result of these comments.

Comment: Some comments stated that there are significant unresolved technical issues related to Revision 19 changes and that the NRC has not fully disclosed its analysis of these weaknesses, and the existence of such weaknesses is evidenced by the concerns identified by Dr. Susan Sterrett, Mr. Arnie Gundersen of Fairwinds Associates, and Dr. John Ma.

NRC Response: The NRC disagrees with this comment. As discussed in more detail in the comment response document, the NRC concludes these issues were either resolved as part of the initial AP1000 rulemaking, or are resolved as part of this rulemaking. Elsewhere in this notice, NRC discusses the Revision 19 changes and summarizes the response to the other technical issues.

Comment: Many comments expressed views that nuclear power plants are too expensive or too dangerous, or that alternative energy sources should be pursued.

NRC Response: The NRC considers these comments to be outside the scope of the rulemaking amending the AP1000 DCR. The NRC has concluded that the AP1000 design meets its regulatory requirements, and the comments do not offer any basis that this is not supported. Other issues about expense or alternative energy sources are outside the scope of the rulemaking amending the AP1000 DCR. A design certification rule is not an NRC license or authorization for construction or operation. No change was made to the final rule, the DCD, or the EA as a result of these comments.

Comment: Many comments expressed concerns about nuclear waste.

NRC Response: These comments address matters that are outside the scope of the rulemaking amending the AP1000 DCR. These comments do not address whether the AP1000 design changes, as reflected in the amendment application and evaluated in the NRC's SER and EA, meet the applicable NRC requirements. No change was made to the final rule, the DCD, or the EA as a result of these comments.

III. Discussion

A. Technical Evaluation of Westinghouse Amendment to the AP1000 Design

Westinghouse's request to amend the AP1000 design contained several classes of changes. Each class is discussed below:

Editorial Changes

Westinghouse requested changes to the AP1000 DCD to correct spelling,

punctuation, grammar, designations, and references. None of these changes make substantive changes to the certified design, and NUREG-1793, "Final Safety Evaluation Report Related to Certification of the AP1000 Standard Design," Supplement 2 (SER) does not address these changes.

Changes To Address Consistency and Uniformity

Westinghouse requested changes to the currently-approved AP1000 DCD (Revision 15) to achieve consistency and uniformity in the description of the certified design throughout the DCD. For example, a change to the type of reactor coolant pump (RCP) motor is evaluated in Chapter 5 of the SER on the application for the AP1000 amendment; Westinghouse requested that wherever this RCP motor is described in the DCD, the new description of the changed motor be used. The NRC reviewed the proposed change (to be used consistently throughout the DCD) to ensure that the proposed changes needed for uniformity and consistency are technically acceptable and do not adversely affect the previously approved design description. The NRC's bases for approval of these changes are set forth in the SER for the AP1000 amendment.

Substantive Technical Changes to the AP1000 Design (other than those needed for compliance with the AIA rule)

Among the many technical changes to the currently-approved DCD Revision 15 that are proposed by Westinghouse for inclusion in Revision 19 of the AP1000 DCD, the NRC selected 15 substantive changes for specific discussion in this final rule document, based on their safety significance:

- Removal of HFE DAC from the DCD.
- Change to I&C DAC and Inspections, Tests, Analyses, and Acceptance Criteria (ITAACs).
- Minimization of Contamination.
- Extension of Seismic Spectra to Soil Sites and Changes to Stability and Uniformity of Subsurface Materials and Foundations.
- Long-Term Cooling.
- Control Room Emergency Habitability System.
- Changes to the Component Cooling Water System (CCWS).
- Changes to I&C Systems.
- Changes to the Passive Core Cooling System (PCCS)—Gas Intrusion.
- Integrated Head Package (IHP)—Use of the QuickLoc Mechanism.
- Reactor Coolant Pump Design.
- Reactor Pressure Vessel (RPV) Support System.
- SFP Decay Heat Analysis and Associated Design Changes.

- Spent Fuel Rack Design and Criticality Analysis.
- Vacuum Relief System.

The NRC evaluated each of the proposed changes and concluded that they are acceptable. The NRC's bases for approval of these changes are set forth in the FSER for the AP1000 amendment and are summarized in Section XII, "Backfitting and Issue Finality," of this document, as part of the discussion as to how each of the 15 changes satisfy the criteria in 10 CFR 52.63(a).

Changes To Address Compliance With the AIA Rule

Westinghouse requested changes to the AP1000 design in order to comply with the requirements of the AIA rule, 10 CFR 50.150. The NRC confirmed that Westinghouse has adequately described key AIA design features and functional capabilities in accordance with the AIA rule and conducted an assessment reasonably formulated to identify design features and functional capabilities to show, with reduced use of operator action, that the facility can withstand the effects of an aircraft impact. In addition, the NRC determined that there will be no adverse impacts from complying with the requirements for consideration of aircraft impacts on conclusions reached by the NRC in its review of the original AP1000 design certification. The NRC's bases for approval of these changes are set forth in the FSER for the AP1000 amendment. As a result of these changes, the AP1000 design will achieve the Commission's objectives of enhanced public health and safety and enhanced common defense and security through improvement of the facility's inherent robustness to the impact of a large commercial aircraft at the design stage.

AP1000 Design Control Document Changes Since Revision 18

Introduction

The NRC staff's (staff's) review of DCD Revision 18 (ADAMS Accession No. ML103260072) identified a few areas where the DCD wording should be revised for clarity, to resolve internal inconsistencies, or to provide updated versions of referenced technical reports. In addition, three technical issues were noted: a load combination for the shield building, the method used to evaluate tank sloshing, and containment peak pressure analysis error correction. As a result of these activities, Westinghouse submitted Revision 19 of the DCD on June 13, 2011 (ADAMS Accession No. ML11171A315), and this is the version of the DCD that is being certified by this final rule. The NRC has determined that

none of the changes from Revision 18 to Revision 19 of the DCD require an additional opportunity for public comment. These changes, which are organized into five subject areas, are discussed below.

The NRC has also determined, in its review of Revision 19, that three of the five subject areas must be identified as Tier 2* matters in the Section VIII of the final rule. The NRC has determined that none of the three new Tier 2* designations in Section VIII.B.6 of the rule require an additional opportunity for public comment. The bases for the NRC's determinations are set forth below.

DCD Structural Design Information and Shield Building Tier 2* Information

Revision 18 of the DCD moved some design details regarding structures, including the shield building, from supporting Westinghouse documents into the DCD itself. Some of the details were marked as Tier 2*, based upon initial NRC staff comments. For example, information about penetrations was brought out of TR-9 into the DCD, and the shield building structural description was added to Section 3.8.4 in Revision 18.

The advanced final safety evaluation report (AFSER) included a confirmatory item to verify that the DCD appropriately reflected all necessary details regarding the structural design and shield building, and clearly showed which design details were to be Tier 2* (see AFSER Section 3.8.4 under ADAMS Accession No. ML103430502). The staff was able to close the confirmatory item after Westinghouse submitted Revision 19 of the DCD by verifying the appropriate structural details were in the DCD and the design details were identified as Tier 2*. These DCD revisions enhanced the description of the design and were not a result of changes to the design itself. Westinghouse report GLR-603, submitted on March 28, 2011 (ADAMS Accession No. ML110910541), was the nonproprietary version of the report that presented shield building information to be made Tier 2*, in addition to the DCD information separately added to Section 3.8 and Appendix 3H. The scope of the report was materials, connection details, and tie bar spacing.

Use of steel composite modules was the heart of the revised shield building design, including the NRC's determination that existing consensus standards are not technically applicable in all respects to the analysis for such modules. This was a key factor in the NRC conclusion that design details about the shield building are Tier 2* so

that any future changes to that information by the COL would receive prior staff review and approval. The staff considered the existing rule language as it relates to Tier 2* designation for structural information. For example, the existing rule includes use of ACI-349, definition of critical locations and thicknesses, nuclear island structural dimensions, and design summary of critical sections. Some of the critical sections are within the shield building, and ACI-349 was part of the design criteria. However, the staff concluded, during the course of final rule preparation, that the rule would be more clear if the use of steel composite module details that are designated in the DCD as Tier 2* was explicitly stated in the final rule (at Section VIII.B.6.c) and requested that Westinghouse designate this information at Tier 2* in Revision 19 of the DCD. Westinghouse included this change in Revision 19. As a result of the Tier 2* markings, a conforming change is being made to the final rule language to Section VIII.B.6.c about the categories of Tier 2* information that would expire at fuel load.

The NRC does not believe that the DCD changes or the designation of this information as Tier 2* in the final rule require re-noticing. The material was publicly available in referenced reports, the staff's intention that the composite steel module design be designated Tier 2* was clear at the time of the public comment period, and there were no comments regarding the extent of Tier 2* inclusion in Revision 18.

Implementation of Revision 18 Commitments for the Shield Building Load Combinations for Shield Building

In the NRC staff's follow-up to an apparent editorial error in a table in the Westinghouse shield building report, the staff determined that Westinghouse had not documented in its calculations the numerical combination of the loads for external temperature conditions (minus 40 degrees F) and a safe-shutdown earthquake (SSE). On April 12, 2011, the staff requested Westinghouse to document in the shield building report the numerical combination of loads for extreme ambient thermal loads and SSE loads, as specified in DCD Table 3.8.4-1 for steel structures and Table 3.8.4-2 for concrete structures. See meeting summary dated May 17, 2011 (ADAMS Accession No. ML111440298). By letter dated June 15, 2011, Westinghouse responded to this request (ADAMS Accession No. ML111950098), and concluded that the current design is

acceptable when the load combinations are explicitly analyzed. The analysis results are discussed in detail in Revision 4 of the shield building report. Changes were made to the DCD to reflect the results of this load combination analysis, but the changes did not involve any changes to the methodology or the design of the shield building. The specific DCD changes were the addition of Section 3.8.4.5.5 to discuss the load combination analysis, and updating of tables of results in Appendix 3H. No change to the language of the AP1000 DCR in 10 CFR part 52, Appendix D was made as a result of the DCD changes.

The NRC does not believe these DCD changes require re-noticing because Revision 18 of the DCD stated that the design would be verified using the required load combinations, and these load combinations had previously been approved by the NRC for use in AP1000 analyses similar to those for the shield building elements requiring reanalysis. There was no change to the methodology or the actual design of the shield building was needed, and there was no change to the language of the AP1000 DCR. The also NRC notes that the June 16, 2011 "petition" (filed by John Runkle) that requested the NRC terminate the rulemaking specifically raised the three technical issues in Revision 19, including the load combination topic.

Passive Containment Cooling Water Storage Tank

During the analysis of the thermal plus earthquake load combination for the passive containment cooling water storage tank (located on top of the shield building), Westinghouse determined that it had not performed an analysis of hydrodynamic loads using an equivalent static analysis as stated in Westinghouse's response (ADAMS Accession No. ML102650098) to an action item from the NRC's shield building report review (documented in AFSEER Chapter 3, ADAMS Accession No. ML103430502). Instead, the analysis had been done by response spectrum analysis. Both the equivalent static method and the response spectrum method had previously been approved by the NRC for use in the AP1000 design for structural analyses as described in Revision 18 of the DCD. This issue was discussed in a May 17, 2011, public meeting (see meeting summary dated May 26, 2011 (ADAMS Accession No. ML111430775)). In response, Westinghouse performed the analysis with the equivalent static method and presented the results in the revised shield building report and in

DCD Revision 19 as follows. The use of the equivalent static method for the tank is discussed in Section 3.7 and Appendix 3G, and a table and figure were added to Appendix 3H. The revised shield building report included the results of the load combination for the containment cooling water storage tank using the equivalent static analytical method, which demonstrated that the design remained adequate when evaluated using the equivalent static analytical method. No change to the language of the AP1000 DCR in 10 CFR Part 52, Appendix D was made as a result of the DCD changes.

The NRC does not believe these DCD changes require re-noticing. Revision 18 of the DCD stated that the design would be verified through the use of the equivalent static method, and that method had been previously approved by the NRC for AP1000 analyses equivalent to that performed for the containment cooling water tank. No change to the actual design of the tank was needed, and there was no change to the language of the AP1000 DCR. The NRC also notes that one of the petitions (dated June 16, 2011) that the NRC is responding to in the comment response document specifically raised this issue and the NRC has provided an answer similar to that described above.

Debris Limits

In its December 20, 2010, letter on long-term core cooling (ADAMS Accession No. ML103410348), the ACRS concluded that the regulatory requirements for long-term core cooling for design-basis accidents have been adequately met, based on cleanliness requirements specified in the amendment. In particular, the amount of latent debris that might be present in the containment is an important parameter. The ACRS further stated that any future proposed relaxation of the cleanliness requirements will require substantial additional data and analysis. In their January 24, 2011, (ADAMS Accession No. ML110170006) report on the Vogtle COL application, which references the AP1000 design, the ACRS recommended that the containment interior cleanliness limits on latent debris should be included in the Technical Specifications (TSs) for the Vogtle plant.

In a letter dated February 23, 2011 (ADAMS Accession No. ML110590455), Westinghouse proposed DCD markups to designate information in Section 6.3 including debris sources such as latent debris (and the amount of fiber) as Tier 2*. Revision 19 of the DCD includes changes to mark selected information as Tier 2*.

The NRC made a conforming change to the final rule language to provide a new item as Section VIII.B.6.b(7), "Screen design criteria," for this new type of Tier 2* information. The NRC believes that inclusion of debris limits in the AP1000 DCD as Tier 2* information, rather than including such limits in each plant referencing the AP1000, represents a better regulatory approach for achieving the intent of the ACRS. Inclusion of debris limits in the AP1000 and its designation as Tier 2* would ensure that there is consistency across all referencing plants with respect to debris control, and ensures NRC regulatory control of any future relaxations of the limits, as discussed in the staff's March 3, 2011, response to the ACRS (ADAMS Accession No. ML110350198).

The NRC does not believe that this change to the DCD marking or to the final rule language requires renoting because the ACRS letter, the staff response, and the Westinghouse letter, were all publicly available during the comment period, and the public had a fair opportunity to comment on this matter. In this regard, the staff notes that the April 6, 2011, "petition" (filed by John Runkle) that requested the NRC to suspend the AP1000 amendment rulemaking, included discussion about this topic with specific reference to the ACRS letter (ADAMS Accession No. ML1108A077). Numerous other comment submissions pointed to this petition as part of their comments. This lends support to the NRC's view that the public had adequate notice and an opportunity to comment on this matter. In addition, the inclusion of debris limits as Tier 2* represents a new limitation, not present in the prior revisions of the AP1000 DCD, which will require a referencing COL holder to use debris limits as specified in the AP1000 DCD. Given that the designation of the debris limits as Tier 2* represents a new restriction agreed to by Westinghouse, a matter on which the NRC received public comment, the staff does not believe that an additional opportunity for public comment need be provided on the inclusion of debris limits in Revision 19 of the DCD and the designation of those limits as Tier 2*.

Heat Sinks and Containment Pressure Analysis

In its December 13, 2010, letter on the AP1000 design certification, the ACRS identified an error in the previously certified Revision 15 of the DCD (ADAMS Accession No. ML103410351) concerning the containment cooling analysis. The error affected the time at which steady-state film coverage is

achieved on the exterior of the containment vessel. In a February 5, 2011, letter, the NRC staff agreed with the ACRS, and indicated that Westinghouse agreed that the error existed and should be corrected. The letter also indicated that the NRC staff would monitor Westinghouse's corrective actions and review any needed revisions to the DCD (ADAMS Accession No. ML103560411).

In the course of correcting the steady-state film coverage error, after the proposed rule was published, Westinghouse identified other errors and modeling updates in supporting analyses that affected the calculated post-accident peak containment pressure (the highest peak pressure in the event of a large break loss-of-coolant accident). The net impact of correcting the steady-state film error and the subsequent Westinghouse-identified errors and modeling updates was an increase in calculated peak containment pressure from 57.8 psig to 59.2 psig, which would have exceeded the 59 psig post-accident peak containment pressure acceptance criterion in the existing AP1000 DCR.

Therefore, as part of the revised analysis to account for all the identified errors, Westinghouse relied upon a limited number of existing structural elements (gratings) within the containment as heat sinks, in order to remain within the 59 psig post-accident peak containment pressure acceptance criterion. Westinghouse's revised analysis used the NRC-approved methodology in the existing AP1000 DCR containment pressure calculation, and the method for crediting heat sink capacity as described in Westinghouse documents WCAP-15846 (proprietary) and WCAP-15862 (nonproprietary) "WGOthic Application to AP600 and AP1000," Revision 1, March 2004, which are incorporated by reference in the previously certified Revision 15 of the DCD. In addition, the Westinghouse-revised analysis used the NRC-approved 59 psig post-accident peak containment pressure acceptance criterion in the existing AP1000 DCD, Revision 15.

The staff safety evaluation of the Westinghouse revised analysis is included in Sections 23.X and 23.Y of the FSER (ADAMS Accession No. ML112061231). Table 6.2.1.1-10 of Revision 19 of the DCD includes the credited elements. The ACRS reviewed the Westinghouse corrections, and agreed that Westinghouse's revised analysis continues to demonstrate that the containment will be able to withstand the post-accident peak containment pressure (ADAMS Accession No. ML11256A180), and that

the reevaluated pressure is based on a sufficiently conservative methodology. The final AP1000 rule language designates this "heat sink data for containment analysis" by adding it as a new Tier 2* item in Section VIII.B.6.b(8). The NRC decided to control any future changes to the credited elements by designating the material as Tier 2* because the geometry and location of the heat sinks could impact their effectiveness.

The NRC does not believe that the revisions to Table 6.2.1.1-10 of Revision 19 of the DCD require renoting for several reasons. The gratings to be credited as heat sinks were already part of the approved AP1000 design and were not part of the proposed amendment to the AP1000 DCR described design. Thus, the actual DCD did not involve any new design elements being added. The use of heat sinks as part of the containment pressure calculation and the method for crediting heat sink capacity were described in the DCD Revision 15. The criterion for evaluating the acceptability of the change continues to be the calculated post-accident peak containment pressure of 59 psig. Therefore, the revised Westinghouse analysis did not involve the use of any previously unapproved design methodologies or acceptance criteria; the methodology used and the acceptance criterion (59 psig post-accident peak containment pressure) is in the already-approved AP1000 DCR. Finally, crediting of the gratings as heat sinks in the revised analysis did not introduce any new safety issues not previously addressed. Therefore, the NRC does not believe that opportunity for public comment need be provided on the rule language change.

The NRC does not believe that the designation of the heat sink as Tier 2* requires renoting. As discussed above, the Tier 2* change is a direct result of the Westinghouse revised analysis that does not warrant an additional opportunity for public comment. The designation of this information as Tier 2* adds a new limitation, not present in the prior revisions of the AP1000 DCD, which limits a referencing combined license applicant/holder to alter the heat sink information for the grating and all other heat sinks credited in the containment peak pressure analysis. Given that the designation of the heat sink information as Tier 2* represents a new restriction agreed to by Westinghouse, the staff does not believe that opportunity for public comment need be provided on the Westinghouse revised analysis and the designation of the heat sink information as Tier 2*.

B. Changes to Appendix D

1. Scope and Contents (Section III)

The purpose of Section III is to describe and define the scope and contents of this design certification and to set forth how documentation discrepancies or inconsistencies are to be resolved. Paragraph A is the required statement of the Office of the Federal Register (OFR) for approval of the incorporation by reference of Tier 1, Tier 2, and the generic TSs into this appendix. The NRC is updating the revision number of the DCD that is incorporated by reference to the revision Westinghouse provided to the NRC in its application for amendment to this DCR. In this final rule, the revision of the DCD that is incorporated by reference is Revision 19.

The effect of this incorporation by reference is that the incorporated material has the same legal status as if it were published in the **Federal Register** and in NRC's regulations at 10 CFR part 52. This material, like any other properly issued regulation, has the force and effect of law. The AP1000 DCD was prepared to meet the technical information contents of application requirements for design certifications under 10 CFR 52.47(a) and the requirements of the OFR for incorporation by reference under 1 CFR part 51. One requirement of the OFR for incorporation by reference is that the applicant for the design certification (or amendment to the design certification) makes the generic DCD available upon request after the final rule becomes effective. Therefore, paragraph A identifies a Westinghouse representative to be contacted to obtain a copy of the AP1000 DCD.

The AP1000 DCD is electronically accessible under ADAMS Accession No. ML11171A500, at the OFR, and at www.regulations.gov by searching under Docket ID NRC-2010-0131. Copies of the generic DCD are also available at the NRC's PDR. Questions concerning the accuracy of information in an application that references Appendix D will be resolved by checking the master copy of the generic DCD in ADAMS. If a generic change (rulemaking) is made to the DCD by the revision process provided in Section VIII of Appendix D, then, at the completion of the rulemaking process, the NRC would request approval of the Director, OFR, for the revised incorporation by reference and revise its copies of the generic DCD, provide a revised copy to the OFR, and notify the design certification applicant to change its copy. The Commission requires that the design certification applicant maintain

an up-to-date copy of the master DCD under Section X.A.1 of Appendix D because it is likely that most applicants intending to reference the standard design will obtain the generic DCD from the design certification applicant. Plant-specific changes to and departures from the generic DCD will be maintained by the applicant or licensee that references Appendix D in a plant-specific DCD under Section X.A.2 of Appendix D.

The NRC is also making a change to paragraph D. Paragraph D establishes the generic DCD as the controlling document in the event of an inconsistency between the DCD and the design certification application or the FSER for the certified standard design. The revision renumbers paragraph D as paragraph D.1, clarifies this requirement as applying to the initial design certification, and adds a similar paragraph D.2 to indicate that this is also the case for an inconsistency between the generic DCD and the amendment application and the NRC's associated FSER for the amendment.

2. Additional Requirements and Restrictions (Section IV)

Section IV of this appendix sets forth additional requirements and restrictions imposed upon an applicant who references this appendix. Paragraph A sets forth the information requirements for these applicants. Paragraph A.3 requires the applicant to physically include, not simply reference, the proprietary information (PI) and safeguards information (SGI) referenced in the AP1000 DCD, or its equivalent, to ensure that the applicant has actual notice of these requirements. The NRC revised paragraph A.3 to indicate that a COL applicant must include, in the plant-specific DCD, the sensitive unclassified non-safeguards information (SUNSI) (including PI) and SGI referenced in AP1000 DCD. This revision addresses a wider class of information (SUNSI) to be included in the plant-specific DCD, rather than limiting the required information to PI. The requirement to include SGI in the plant-specific DCD would not change.

The NRC also added a new paragraph A.4 to indicate requirements that must be met in cases where the COL applicant is not using the entity that was the original applicant for the design certification (or amendment) to supply the design for the applicant's use. Paragraph A.4 requires that a COL applicant referencing Appendix D to 10 CFR Part 52 include, as part of its application, a demonstration that an entity other than Westinghouse is qualified to supply the AP1000 certified design unless Westinghouse supplies

the design for the applicant's use. In cases where a COL applicant is not using Westinghouse to supply the AP1000 certified design, this information is necessary to support any NRC finding under 10 CFR 52.73(a) that the entity is qualified to supply the certified design.

3. Applicable Regulations (Section V)

The purpose of Section V is to specify the regulations applicable and in effect when the design certification is approved (*i.e.*, as of the date specified in paragraph A, which is the date of publication of this rule in the **Federal Register**). The NRC is redesignating paragraph A as paragraph A.1 to indicate that this paragraph applies to that portion of the design that was certified under the initial design certification. The NRC is further adding a new paragraph A.2, similar to paragraph A.1, to indicate the regulations that would apply to that portion of the design within the scope of this amendment, as approved by the Commission and signed by the Secretary of the Commission.

4. Issue Resolution (Section VI)

The purpose of Section VI is to identify the scope of issues that were resolved by the Commission in the original certification rulemaking and, therefore, are "matters resolved" within the meaning and intent of 10 CFR 52.63(a)(5).

Paragraph B presents the scope of issues that may not be challenged as a matter of right in subsequent proceedings and describes the categories of information for which there is issue resolution. Paragraph B.1 provides that all nuclear safety issues arising from the Atomic Energy Act of 1954 (the Act), as amended, that are associated with the information in the NRC's FSER related to certification of the AP1000 standard design (ADAMS Accession No. ML112061231) and the Tier 1 and Tier 2 information and the rulemaking record for Appendix D to 10 CFR part 52, are resolved within the meaning of 10 CFR 52.63(a)(5). These issues include the information referenced in the DCD that are requirements (*i.e.*, "secondary references"), as well as all issues arising from PI and SGI, which are intended to be requirements. Paragraph B.2 provides for issue preclusion of PI and SGI.

The NRC revised paragraph B.1 to extend issue resolution to the information contained in the NRC's FSER (Supplement No. 2), Appendix 1B of Revision 19 of the generic DCD, and the rulemaking record for this amendment. In addition, the NRC revised paragraph B.2 to extend issue

resolution to the broader category of SUNSI, including PI, referenced in the generic DCD.

The NRC also revised paragraph B.7, which identifies as resolved all environmental issues concerning severe accident mitigation design alternatives (SAMDA) arising under the National Environmental Policy Act of 1969 (NEPA) associated with the information in the NRC's final EA for the AP1000 design and Appendix 1B of the generic DCD (Revision 15) for plants referencing Appendix D to 10 CFR part 52 whose site parameters are within those specified in the SAMDA evaluation. The NRC revised this paragraph to identify all resolved environmental issues concerning SAMDA associated with the information in the NRC's final EA for this amendment and Appendix 1B of Revision 19 of the generic DCD for plants referencing Appendix D to 10 CFR part 52 whose site parameters are within those specified in the SAMDA evaluation.

Finally, the NRC is revising paragraph E, which provides the procedure for an interested member of the public to obtain access to SUNSI (including PI) and SGI for the AP1000 design in order to request and participate in proceedings, as identified in paragraph B, involving licenses and applications that reference Appendix D to 10 CFR part 52. The NRC is replacing the current information in this paragraph with a statement that the NRC will specify at an appropriate time the procedure for interested persons to review SGI or SUNSI (including PI) for the purpose of participating in the hearing required by 10 CFR 52.85, the hearing provided under 10 CFR 52.103, or in any other proceeding relating to Appendix D to 10 CFR part 52 in which interested persons have a right to request an adjudicatory hearing. The NRC will follow its current practice of establishing the procedures by order when the notice of hearing is published in the **Federal Register** (e.g., Florida Power and Light Co., Combined License Application for the Turkey Point Units 6 and 7, Notice of Hearing, Opportunity To Petition for Leave To Intervene and Associated Order Imposing Procedures for Access to Sensitive Unclassified Non-Safeguards Information and Safeguards Information for Contention Preparation (75 FR 34777; June 18, 2010); Notice of Receipt of Application for License; Notice of Consideration of Issuance of License; Notice of Hearing and Commission Order and Order Imposing Procedures for Access to Sensitive Unclassified Non-Safeguards Information and Safeguards Information for Contention Preparation; In the

Matter of AREVA Enrichment Services, LLC (Eagle Rock Enrichment Facility) (74 FR 38052; July 30, 2009)).

In the four currently approved design certifications (10 CFR part 52, Appendices A through D), paragraph E presents specific directions on how to obtain access to PI and SGI on the design certification in connection with a license application proceeding referencing that DCR. The NRC is changing this because these provisions were developed before the terrorist events of September 11, 2001. After September 11, 2001, Congress changed the statutory requirements governing access to SGI, and the NRC revised its rules, procedures, and practices governing control and access to SUNSI and SGI. The NRC now believes that generic direction on obtaining access to SUNSI and SGI is no longer appropriate for newly approved DCRs. Accordingly, the specific requirements governing access to SUNSI and SGI contained in paragraph E of the four currently approved DCRs will not be included in the DCR for the AP1000. Instead, the NRC will specify the procedures to be used for obtaining access at an appropriate time in the COL proceeding referencing the AP1000 DCR. The NRC will include the new rule language in any future amendments or renewals of the currently existing DCRs, as well as in new (*i.e.*, initial) DCRs. However, the NRC will not initiate rulemaking to change paragraph E of the existing DCRs, in an effort to minimize unnecessary resource expenditures by both the original DCR applicant and the NRC.

5. Processes for Changes and Departures (Section VIII)

The purpose of Section VIII of this appendix is to set forth the processes for generic changes to, or plant-specific departures (including exemptions) from, the DCD. The Commission adopted this restrictive change process in order to achieve a more stable licensing process for applicants and licensees that reference this DCR. The change processes for the three different categories of Tier 2 information, namely, Tier 2, Tier 2*, and Tier 2* with a time of expiration, are presented in paragraph B.

Departures from Tier 2 that a licensee may make without prior NRC approval are addressed under paragraph B.5 (similar to the process in 10 CFR 50.59). The NRC is modifying Section VIII to address the change control process specific to departures from the information required by 10 CFR 52.47(a)(28) to address the NRC's AIA requirements in 10 CFR 50.150.

Specifically, the NRC revised paragraph B.5.b to indicate that the criteria in this paragraph for determining if a proposed departure from Tier 2 requires a license amendment do not apply to a proposed departure affecting information required by 10 CFR 52.47(a)(28) to address 10 CFR 50.150. In addition, the NRC redesignated paragraphs B.5.d, B.5.e, and B.5.f as paragraphs B.5.e, B.5.f, and B.5.g, respectively, and added a new paragraph B.5.d. Paragraph B.5.d requires an applicant or licensee who proposed to depart from the information required by 10 CFR 52.47(a)(28) included in the final safety analysis report (FSAR) for the standard design certification to consider the effect of the changed feature or capability on the original assessment required by 10 CFR 50.150(a). The FSAR information required by the AIA rule, which is subject to this change control requirement, includes the descriptions of the design features and functional capabilities incorporated into the final design of the nuclear power facility and the description of how the identified design features and functional capabilities meet the assessment requirements in 10 CFR 50.150(a)(1). The objective of the change controls is to determine whether the design of the facility, as changed or modified, is shown to withstand the effects of the aircraft impact with reduced use of operator actions. In other words, the applicant or licensee must continue to show, with the modified design, that the acceptance criteria in 10 CFR 50.150(a)(1) are met with reduced use of operator actions. The AIA rule does not require an applicant or a licensee implementing a design change to redo the complete AIA to evaluate the effects of the change. The NRC believes it may be possible to demonstrate that a design change is bounded by the original design or that the change provides an equivalent level of protection, without redoing the original assessment.

Consistent with the NRC's intent when it issued the AIA rule, under this section, plant-specific departures from the AIA information in the FSAR would not require a license amendment, but may be made by the licensee upon compliance with the substantive requirements of the AIA rule (*i.e.*, the AIA rule acceptance criteria). The applicant or licensee is required to document, in the plant-specific departure, how the modified design features and functional capabilities continue to meet the assessment requirements in 10 CFR 50.150(a)(1), in accordance with Section X of Appendix D to 10 CFR part 52. Applicants and

licensees making changes to design features or capabilities included in the certified design may also need to develop alternate means to cope with the loss of large areas of the plant from explosions or fires to comply with the requirements in 10 CFR 50.54(hh). The addition of these provisions to Appendix D to 10 CFR part 52 is consistent with the NRC's intent when it issued the AIA rule in 2009, as noted in the SOC for that rule (74 FR 28112; June 12, 2009).

Paragraph B.6 of Appendix D to 10 CFR Part 52 provides a process for departing from Tier 2* information. The creation of, and restrictions on changing, Tier 2* information resulted from the development of the Tier 1 information for the ABWR design certification (Appendix A to 10 CFR part 52) and the ABB-CE [ASEA Brown Boveri—Combustion Engineering] System 80+ design certification (Appendix B to 10 CFR part 52). During this development process, these applicants requested that the amount of information in Tier 1 be minimized to provide additional flexibility for an applicant or licensee who references these appendices. Also, many codes, standards, and design processes that would not be specified in Tier 1, but were acceptable for meeting ITAAC, were specified in Tier 2. The result of these actions was that certain significant information only exists in Tier 2 and the Commission did not want this significant information to be changed without prior NRC approval. This Tier 2* information was identified in the generic DCD with italicized text and brackets (see Table 1–1 of the AP1000 DCD Introduction for a list of the Tier 2* items). Although the Tier 2* designation was originally intended to last for the lifetime of the facility, like Tier 1 information, the NRC determined that some of the Tier 2* information could expire when the plant first achieves full power (100 percent), after the finding required by 10 CFR 52.103(g), while other Tier 2* information must remain in effect throughout the life of the facility. The factors determining whether Tier 2* information could expire after the first full power was achieved were whether the Tier 1 information would govern these areas after first full power and the NRC's determination that prior approval was required before implementation of the change due to the significance of the information. Therefore, certain Tier 2* information listed in paragraph B.6.c would cease to retain its Tier 2* designation after full power operation is first achieved following the NRC finding

under 10 CFR 52.103(g). Thereafter, that information would be deemed to be Tier 2 information that would be subject to the departure requirements in paragraph B.5. By contrast, the Tier 2* information identified in paragraph B.6.b would retain its Tier 2* designation throughout the duration of the license, including any period of license renewal.

The NRC is revising certain items designated as Tier 2*. As discussed in the proposed rule, the Commission is adding an item to Section VIII.B.6.b for reactor coolant pump type. In addition, a new item was added to paragraph B.5.b for RCP type. The NRC determined that certain specific characteristics of the RCP were significant to the safety review and that prior approval of changes affecting those characteristics would be required. This Tier 2* designation does not expire.

In the final rule, two additional items are being added to Section VIII.B.6.b. First, in its December 20, 2010, letter on long-term core cooling, the ACRS concluded that the regulatory requirements for long-term core cooling for designbasis accidents have been adequately met, based on cleanliness requirements specified in the amendment. In particular, the amount of latent debris that might be present in the containment is an important parameter. The ACRS further stated that any future proposed relaxation of the cleanliness requirements will require substantial additional data and analysis. In their January 24, 2011, report on the Vogtle COL application, which references the AP1000 design, the ACRS recommended that the containment interior cleanliness limits on latent debris should be included in the TSs. In a letter dated February 23, 2011, Westinghouse proposed DCD markups to designate information in Section 6.3 including debris sources such as latent debris (and the amount of fiber) as Tier 2*. The NRC believes this is a better approach to achieving the intent of the ACRS for regulatory control of any future relaxations of the limits and would thus require prior NRC approval, as discussed in the staff's March 3, 2011, response to the ACRS. Revision 19 includes DCD changes to mark selected information as Tier 2*. No changes to the content itself were made. The NRC made a conforming change to the final rule language to provide a new item as Section VIII.B.6.b(7), entitled "Screen design criteria," for this new type of Tier 2* information.

The second change, which was also discussed in the December 13, 2010, ACRS letter report on the DC amendment, concerned an error ACRS identified in the previously certified

Revision 15, concerning the containment cooling analysis. The error affected the time at which steady-state film coverage is achieved on the exterior of the containment vessel. In the corrected analysis, the calculated peak containment pressure for a LOCA increases somewhat, but remains below the design pressure. In the course of reviewing the correction of the error for the peak containment pressure, after the proposed rule was published, Westinghouse identified other errors in supporting analyses that affect the calculated post-accident peak containment pressure. The net impact is an increase in calculated peak containment pressure in the event of a large break LOCA (the highest peak pressure) of about 0.3 psi. As part of the revised analysis for all of the changes, Westinghouse relied upon a limited number of structural elements within the containment as heat sinks for the peak pressure analysis in order to maintain margin to the design limit. The NRC's safety evaluation is included in the FSER. Table 6.2.1.1–10 of Revision 19 of the DCD includes the credited elements. The final rule language designates this "heat sink data for containment analysis" by adding it as new Tier 2* in Section VIII.B.6.b(8). Because the geometry and location of the heat sinks could impact their effectiveness, the staff decided to control any future changes to the credited elements by designating the material as Tier 2*.

As discussed in the proposed rule, the NRC is clarifying some of the Tier 2* designations for structural requirements, with respect to Tier 2* information that expires at first full power operation. The item on human factors engineering (HFE) moved from paragraph B.5.b to paragraph B.5.c, with the effect that the Tier 2* designation on that information expires after full power operation is achieved rather than never expiring. In the final rule, an additional item (paragraph B.6.c(16)) is added to provide Tier 2* designation for certain details about the steel composite modules (as identified within the DCD); the designation expires at first full power operation. The NRC concludes that the details are the key elements of this unique design, and therefore warrant Tier 2* regulatory control.

The NRC also concluded that the Tier 2* designation is not necessary for the specific Code edition and addenda for the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), as listed in item VIII.B.6.c(2). At the time of the initial certification, the NRC determined that this information should be Tier 2*.

Subsequently, 10 CFR Part 50 was modified to include provisions in 10 CFR 50.55a(b)(1)(iii) to provide restrictions in the use of certain editions/addenda to the ASME Code, Section III, that the NRC found unacceptable. In addition, 10 CFR 50.55a(c)(3), (d)(2) and (e)(2), for reactor coolant pressure boundary, Quality Group B Components, and Quality Group C Components, respectively, provide regulatory controls on the use of later edition/addenda to the ASME Code, Section III, through the conditions NRC established on use of paragraph NCA-1140 of the Code. As a result, these rule requirements adequately control the ability of a licensee to use a later edition of the ASME Code and addenda such that Tier 2* designation is not necessary. Thus, the Tier 2* item in paragraph B.6.c(2) for ASME Code was modified to be limited to ASME Code piping design restrictions as identified in Section 5.2.1.1 of the AP1000 DCD and to include certain Code cases, including Code Case N-284-1, as discussed in Section 3.8.2.2 and other Code cases as designated in Table 5.2-3 of the DCD (Code Case N-284-1 is the only case currently specified in Appendix D to 10 CFR Part 52). The NRC retained the Tier 2* designation for applying ASME Code, Section III, Subsection NE to containment design, by moving this provision to the end of Section VIII.B.6.c(14). Section 3.8.2.2 of the DCD identifies the specific edition and addenda for containment design (2001 Edition of ASME Code, Section III, including 2002 Addenda) with the Tier 2* markings.

6. Records and Reporting (Section X)

The purpose of Section X is to set forth the requirements that apply to maintaining records of changes to and departures from the generic DCD, which would be reflected in the plant-specific DCD. Section X also sets forth the requirements for submitting reports (including updates to the plant-specific DCD) to the NRC. Paragraph A.1 requires that a generic DCD and the PI and SGI referenced in the generic DCD be maintained by the applicant for this rule. The NRC revised paragraph A.1 to replace the term "proprietary information," or PI, with the broader term "sensitive unclassified non-safeguards information," or SUNSI. Information categorized as SUNSI is information that is generally not publicly available and encompasses a wide variety of categories. These categories include information about a licensee's or applicant's physical protection or material control and

accounting program for special nuclear material not otherwise designated as SGI or classified as National Security Information or Restricted Data (security-related information), which is required by 10 CFR 2.390 to be protected in the same manner as commercial or financial information (*i.e.*, they are exempt from public disclosure). This change is necessary because the NRC is approving PI and security-related information. This change also ensures that Westinghouse (as well as any future applicants for amendments to the AP1000 DCR who intend to supply the certified design) are required to maintain a copy of the applicable generic DCD, and maintain the applicable SUNSI (including PI) and SGI—developed by that applicant—that were approved as part of the relevant design certification rulemakings.

The NRC notes that the generic DCD concept was developed, in part, to meet OFR requirements for incorporation by reference, including public availability of documents incorporated by reference. However, the PI and SGI were not included in the public version of the DCD. Only the public version of the generic DCD is identified and incorporated by reference into this rule. Nonetheless, the SUNSI for this amendment was reviewed by the NRC and, as stated in paragraph B.2, the NRC considers the information to be resolved within the meaning of 10 CFR 52.63(a)(5). Because this information is in the nonpublic version of the DCD, this SUNSI (including PI) and SGI, or its equivalent, is required to be provided by an applicant for a license referencing this DCR.

In addition, the NRC is adding a new paragraph A.4.a that requires the applicant for the AP1000 design to maintain a copy of the AIA performed to comply with the requirements of 10 CFR 50.150(a) for the term of the certification (including any period of renewal). The NRC added a new paragraph A.4.b that requires an applicant or licensee who references this appendix to maintain a copy of the AIA performed to comply with the requirements of 10 CFR 50.150(a) throughout the pendency of the application and for the term of the license (including any period of renewal). The addition of paragraphs A.4.a and A.4.b is consistent with the NRC's intent when it issued the AIA rule in 2009 (74 FR 28112; June 12, 2009).

C. Immediate Effectiveness of Final Rule; Provision of Actual Notice to Southern Nuclear Operating Company

The NRC is making this final rule immediately effective, and is also providing notice of this final rule (including the NRC-approved DCD, Revision 19) to Southern Nuclear Operating Company (SNOC). Under a provision of the Administrative Procedure Act (APA), 5 U.S.C. 553(d), there ordinarily must be a 30-day waiting period before a new rule is effective, subject to certain exceptions, including "good cause:"

The required publication or service of a substantive rule shall be made not less than 30 days before its effective date, except: (1) A substantive rule which grants or recognizes an exemption or relieves a restriction; (2) interpretive rules and statements of policy; or (3) as otherwise provided by the agency for good cause found and published with the rule.

Consistent with the APA, 10 CFR 2.807 provides that the NRC may make a rule effective in less than 30 days after publication in the **Federal Register** upon making the good cause finding as noted in the third exception listed in 5 U.S.C. 553(d). For the following reasons, the NRC has determined that good cause exists for making this design certification rulemaking immediately effective.

Good cause can be demonstrated by any number of circumstances. Here the circumstances demonstrate that the basis for the 30-day waiting period—to allow those regulated by a new rule time to conform their activities to it—is absent. Several sources of guidance on Section 553(d) support the NRC's good cause finding for this rulemaking.

Specifically, in the legislative history of the 30-day provision, the final report of the House Committee on the Judiciary offered the following explanation of the "good cause" exception in 5 U.S.C. 553(d)(3):

[The purpose of the 30-day delay is to] afford persons affected a reasonable time to prepare for the effective date of a rule or rules or to take any other action which the issuance of rules may prompt * * *. Many rules * * * may be made operative in less than 30 days * * * because the parties subject to them may during the usually protracted hearing and decision procedures anticipate the regulation. (Senate Document (S. Doc. No.) 79-249, Administrative Procedure Act: Legislative History 259-60 (1946))

Additional guidance is found in the Attorney General's Manual on the APA, which provides:

The requirement of publication not less than thirty days prior to the effective date may be shortened by an agency 'upon good

cause found and published with the rule'. This discretionary exception was provided primarily to take care of the cases in which the public interest requires the agency to act immediately or within a period less than thirty days. Senate Hearings (1941) pp. 70, 441, 588, 650, 812, 1506. *Where the persons concerned request that a rule be made effective within a shorter period, this circumstance would ordinarily constitute good cause.* Also, it is clear from the legislative history that for good cause an agency may put a substantive rule into effect immediately; in such event, the requirement of prior publication is altogether absent, and the rule will become effective upon issuance as to persons with actual notice, and as to others upon filing with the Division of the **Federal Register** in accordance with section 7 of the **Federal Register** Act. Senate Hearings (1941) pp. 594, 599, 1340, 1455. (U.S. Department of Justice, Attorney General's Manual on the Administrative Procedure Act 37 (1947) (*emphasis added*))

In light of this background, the NRC believes that there is good cause for making this final rule amending the AP1000 DCR immediately effective.

On May 27, 2011, one of the first COL applicants to which this amended AP1000 DCR would potentially apply, SNOG, submitted a "white paper" that set forth alternatives to making the final AP1000 rule effective 30 days after publication (ADAMS Accession No. ML11152A189). Thereafter, SNOG submitted a July 20, 2011, letter (ADAMS Accession No. ML11210B421), indicating that making the certified design rule immediately effective would serve important policy objectives.² SNOG's letter thus requested Commission action. During the *Vogtle* uncontested, or "mandatory," hearing held by the Commission on SNOG's applications for a COL and a limited work authorization (LWA), SNOG reiterated its request that the NRC issue the COL and LWA immediately upon Commission affirmation of the final rule amending the AP1000 DCR. Transcript of *Vogtle* COL Mandatory Hearing at 22–23, 350 (September 27, 2011; ADAMS Accession No. ML11305A228).

Here, SNOG, which is likely to use (and be bound by) the AP1000 DCR in the short-term if the Commission otherwise authorizes issuance of the COL, wishes the rule be made immediately effective. Given SNOG's longstanding awareness of and participation in the AP1000 rulemaking, it does not need the 30-day waiting

period to come into compliance with the final rule. Under the Attorney General's Manual, *supra*, at 37, SNOG's request that the rule be made effective in a shorter time period constitutes good cause to waive the 30-day waiting period. As noted previously, the extensive process for consideration of this design certification rulemaking would clearly constitute a situation where "the parties subject to [the regulation] may during the usually protracted hearing and decision procedures anticipate the regulation." S. Doc. No. 79–249, Administrative Procedure Act: Legislative History 259–60 (1946). In fact, that "anticipation" is clearly manifested in SNOG's use of the design certification rulemaking, as well as use by other applicants for COLs referencing the AP1000 DCR, which would occur only after the completion of a public process that includes NRC adjudicatory processes for each COL application. The determination of good cause regarding the effective date of the final AP1000 rule is separate from, and does not prejudice, the licensing determinations that are otherwise required in the COL proceedings.

Finally, the NRC is providing actual service of the final AP1000 rule (including the NRC-approved DCD, Revision 19) to SNOG concurrently with the NRC's transmission of the final rule to the OFR for publication.³ Thus, either before, or simultaneous with, any issuance of a COL for *Vogtle* (and any other COL application referencing the AP1000, upon request), SNOG (and any other COL applicant referencing the AP1000, upon request) will have actual notice of the requirements of the final AP1000 rule and Revision 19 of the DCD for which their NRC-licensed activities under the COL must conform.

The immediately effective rule cannot be used by anyone until the agency has made the necessary health and safety findings and completed the environmental review processes that necessarily precede the issuance of a COL relying on the design certification rulemaking. Each finding necessary under the Atomic Energy Act would have been made through public rulemaking and the NRC's adjudicatory processes that serve to allow consideration of public input before the agency issues its determination on an application referencing the AP1000. The rule itself does not force anyone to take

action immediately based on its effective date because it does not compel, but rather permits, action. Therefore, from the standpoint of regulatory efficiency, delaying issuance of a licensing decision when the decision is ready to be issued is not in the public interest, whether the decision is to deny or grant the requested license.

On October 14, 2011, counsel for several organizations who were previously admitted as Joint Intervenor in the contested portion of the *Vogtle* COL proceeding indicated that they would be adversely affected by the issuance of an immediately effective rule. Letter from Mindy Goldstein, Counsel for Southern Alliance for Clean Energy, Georgia Women's Action for New Directions, and Center for a Sustainable Coast (Goldstein Letter) (ADAMS Accession No. ML11287A054).⁴ The Goldstein Letter states that SNOG has requested a waiver of 10 CFR 2.807 during the uncontested hearing, which the letter states is an improper forum, and that waiver of 10 CFR 2.807 would not afford them time to prepare for issuance of the *Vogtle* COL or LWA. The Goldstein Letter states that a waiver of 10 CFR 2.807 is required to be submitted under 10 CFR 2.335. The Goldstein Letter explains that when the DCR becomes effective, a COL and LWA will be issued, resulting in a nuclear power plant that will affect all persons located near the site. The *Vogtle* Joint Intervenor believe the 30-day effective period is necessary to determine whether they wish to appeal the rule and seek a stay of construction.

First, a waiver of 10 CFR 2.807 is not required to make a rule immediately effective; a rule can be made immediately effective pursuant to the requirements of 10 CFR 2.807. The Commission in this rulemaking has determined to use the good cause exception to the 30-day effective date for the rulemaking and thus, is acting consistently with the provisions of 10 CFR 2.807 rather than waiving its provisions.

Second, as noted previously in the discussion of the legislative history of the 30-day effective date provision, the primary purpose of the 30-day requirement is to allow affected persons time to comply with the new rule. The final rule amending the AP1000 design

² The letter by SNOG, requesting that the final rule amending the AP1000 DCR be made effective before 30 days after **Federal Register** publication, was filed on the docket for the *Vogtle* Electric Generating Plant, Units 3 and 4 (Docket Nos. 52–025–COL and 52–026–COL) (*Vogtle*). SNOG's request is more appropriately addressed in this rulemaking proceeding to amend the AP1000 DCR.

³ The NRC would also provide actual notice of the final AP1000 rule to any other COL applicant upon request. On the date of the transmission of the final rule package to the OFR, the NRC will issue an announcement of its transmission and make the final rule package as transmitted to the OFR available on the NRC Web site.

⁴ Because the Goldstein Letter was submitted in response to SNOG's request, which is being considered in this AP1000 design certification rulemaking, the NRC is, in its discretion, considering the Goldstein Letter here as well. Therefore, the NRC need not address the matters raised in the Goldstein Letter with respect to SNOG's compliance with the adjudicatory requirements in 10 CFR 2.335.

certification is focused on the conduct of regulatory activities licensed by the NRC. But, the *Vogtle* Joint Intervenor is neither current NRC licensee who must comply with the final rule amending the AP1000 rule, nor applicants for NRC licenses referencing the final AP1000 rule. Thus, the final AP1000 rule imposes no substantive legal obligations on them. The NRC does not believe that the Goldstein Letter describes any legally-cognizable harm within the scope of protection afforded to third parties by the APA's 30-day waiting period provision. That an immediately effective AP1000 rule may facilitate issuance of a COL for the *Vogtle* plant does not appear to adversely affect the rights or capability of any public stakeholder to do what they would otherwise do if the AP1000 rule were made effective 30 days after publication in the **Federal Register**. Whether the AP1000 rule is immediately effective or not does not change any public stakeholder's legal rights or options; it merely affects the timing of asserting such rights or exercising those options.

Further, the Commission is not aware of any regulatory history indicating that the purpose of the 30-day effective date is tied to or affects appeal rights. Regardless of the immediate effectiveness of the rule, the *Vogtle* Joint Intervenor may seek legal action on the immediately effective rule in Federal court, or they may file an appropriate motion in the *Vogtle* COL proceeding if they satisfy the requirements in 10 CFR Part 2 to reopen the record and submit late-filed contentions. See 10 CFR 2.309, 2.326. Thus, an immediately effective AP1000 rule does not foreclose, or render moot, challenges to the rule, including stay remedies. For these reasons, the NRC concludes that making the final AP1000 rule immediately effective would not adversely affect these organizations or any other public stakeholders.

In sum, the NRC finds good cause for making the final rule amending the AP1000 DCR immediately effective upon publication in the **Federal Register**. Therefore, the NRC is making the final rule immediately effective. In addition, there is sufficient reason to provide prompt actual notice of this final rule (including the NRC-approved DCD, Revision 19) to SNOC (and potentially to any other combined license applicant referencing the amended AP1000 DCR in its application).

IV. Section-by-Section Analysis

The following discussion sets forth each amendment to the AP1000 DCR

being made in this final rule. All section and paragraph references are to the provisions in the amendment to Appendix D to 10 CFR part 52, unless otherwise noted.

A. Scope and Contents (Section III)

The NRC is amending Section III, Scope and Contents, to revise paragraph A to update the revision number of the DCD, from Revision 15 to Revision 19, approved for incorporation by reference by the Office of the Federal Register; update the contact information of the Westinghouse representative to be contacted should a member of the public request a copy of the generic DCD; and update other locations (e.g., the NRC's PDR) where a member of the public could request a copy of or otherwise view the generic DCD.

The NRC is revising paragraph D to establish the generic DCD as the controlling document in the event of an inconsistency between the DCD and either the application or the FSER for the certified standard design. This clarification further distinguishes between the conflict scenarios presented in paragraphs D.1 (for the initial certification of the design) and D.2 (for Amendment 1 to the design).

B. Additional Requirements and Restrictions (Section IV)

The NRC is amending Section IV, Additional Requirements and Restrictions, to set forth additional requirements and restrictions imposed upon an applicant who references Appendix D to 10 CFR part 52. Paragraph A sets forth the information requirements for these applicants. The NRC is revising paragraph A.3 to replace the term "proprietary information" with the broader term "sensitive unclassified non-safeguards information."

The NRC is also adding a new paragraph A.4 to indicate requirements that must be met in cases where the COL applicant is not using the entity that was the original applicant for the design certification (or amendment) to supply the design for the applicant's use.

C. Applicable Regulations (Section V)

The NRC is revising paragraph A to distinguish between the regulations that were applicable and in effect at the time the initial design certification was approved (paragraph A.1) and the regulations that are applicable and in effect as of the effective date of the final rule (paragraph A.2).

D. Issue Resolution (Section VI)

The NRC is amending Section VI, Issue Resolution, by revising paragraph

B.1 to provide that all nuclear safety issues arising from the Act that are associated with the information in the NRC's FSER (NUREG-1793), the Tier 1 and Tier 2 information (including the availability controls in Section 16.3 of the generic DCD), and the rulemaking record for Appendix D to 10 CFR Part 52 are resolved within the meaning of 10 CFR 52.63(a)(5). These issues include the information referenced in the DCD that are requirements (i.e., secondary references), as well as all issues arising from SUNSI (including PI) and SGI, which are intended to be requirements. This paragraph is revised to extend issue resolution beyond that of the previously certified design to also include the information in Supplement No. 2 of the 2011 FSER (Supplement 1 supported the initial certification) and the rulemaking record associated with Amendment 1 to the AP1000 design.

The NRC is revising paragraph B.2 to replace the term "proprietary information" with the broader term "sensitive unclassified non-safeguards information."

Paragraph B.7 is revised to extend environmental issue resolution beyond that of the previously certified design to also include the information in Amendment 1 to the AP1000 design and Appendix 1B of Revision 19 of the generic DCD.

A new paragraph E is added to allow the NRC to specify at the appropriate time the procedures for interested persons to obtain access to PI, SUNSI, and SGI for the AP1000 DCR. Access to such information is for the sole purpose of requesting or participating in certain specified hearings, such as (1) the hearing required by 10 CFR 52.85 where the underlying application references Appendix D to 10 CFR Part 52; (2) any hearing provided under 10 CFR 52.103 where the underlying COL references Appendix D to 10 CFR part 52; and (3) any other hearing relating to Appendix D to 10 CFR Part 52 in which interested persons have the right to request an adjudicatory hearing.

E. Processes for Changes and Departures (Section VIII)

The NRC is revising Section VIII to address the change control process specific to departures from the information required by 10 CFR 52.47(a)(28) to address the NRC's AIA requirements in 10 CFR 50.150. Specifically, the NRC is revising the introductory text of paragraph B.5.b to indicate that the criteria in this paragraph for determining if a proposed departure from Tier 2 requires a license amendment do not apply to a proposed departure affecting information required

by 10 CFR 52.47(a)(28) to address aircraft impacts.

In addition, the NRC is redesignating paragraphs B.5.d, B.5.e, and B.5.f as paragraphs B.5.e, B.5.f, and B.5.g, respectively, and adding a new paragraph B.5.d. Paragraph B.5.d requires an applicant referencing the AP1000 DCR, who proposes to depart from the information required by 10 CFR 52.47(a)(28) to be included in the FSAR for the standard design certification, to consider the effect of the changed feature or capability on the original 10 CFR 50.150(a) assessment.

The NRC is revising certain items designated as Tier 2*. As discussed in the proposed rule, the NRC is adding an item to Section VIII.B.6.b for RCP type. In addition, a new item is added to paragraph B.5.b for RCP type. The NRC determined that certain specific characteristics of the RCP were significant to the safety review and that prior approval of changes affecting those characteristics would be required. This Tier 2* designation does not expire.

In the final rule, two additional items are added to Section VIII.B.6.b. Section VIII.B.6.b(7) provides Tier 2* designation for certain analysis assumptions related to latent debris and the effects on screens and fuel assemblies in post-LOCA conditions where debris is transported to the recirculation sump and into the in-containment refueling water storage tank. Finally, new paragraph VIII.B.6.b(8) is added to include the containment heat sinks credited in the peak pressure analysis. The Tier 2* designation for the requirements in this section of the rule does not expire.

As discussed in the proposed rule, the NRC is clarifying some of the Tier 2* designations for structural requirements, with respect to Tier 2* information that expires at first full power operation. The item on HFE moved from paragraph B.5.b to paragraph B.5.c, with the effect that the Tier 2* designation on that information expires after full power operation is achieved rather than never

expiring. In the final rule, an additional item (paragraph B.6.c(16)) is added to provide Tier 2* designation for certain details about the steel composite modules (as identified within the DCD); the designation expires at first full power operation.

Finally, the NRC also concluded that the Tier 2* designation was not necessary for the specific Code edition and addenda for the ASME Code as listed in paragraph VIII.B.6.c(2). Thus, the item in paragraph VIII.B.6.c(2) for ASME Code was modified to be limited to piping and welding restrictions identified in Section 5.2.1.1, and to include certain Code cases, N-284-1 is discussed in Section 3.8.2.2 and other code cases designated as Tier 2* are listed in Table 5.2-3. The NRC retained the Tier 2* designation for applying ASME Code Section III to containment design, by moving this provision to the end of Section VIII.B.6.c(14). Section 3.8.2.2 identifies the specific edition and addenda for containment design (2001 Edition of ASME Code, Section III, including 2002 Addenda).

F. Records and Reporting (Section X)

The NRC is amending Section X, Records and Reporting, to revise paragraph A.1 to replace the term “proprietary information” with the broader term “sensitive unclassified non-safeguards information.” Paragraph A.1 is revised to require the design certification amendment applicant to maintain the SUNSI, which it developed and used to support its design certification amendment application. This would ensure that the referencing applicant has direct access to this information from the design certification amendment applicant, if it has contracted with the applicant to provide the SUNSI to support its license application. The AP1000 generic DCD and the NRC-approved version of the SUNSI would be required to be maintained for the period that Appendix D to 10 CFR part 52 may be referenced.

The NRC is also adding a new paragraph A.4.a, which requires Westinghouse to maintain a copy of the AIA performed to comply with the requirements of 10 CFR 50.150(a) for the term of the certification (including any period of renewal). This provision, which is consistent with 10 CFR 50.150(c)(3), would facilitate any NRC inspections of the assessment that the NRC decides to conduct.

Similarly, the NRC is adding a new paragraph A.4.b, which requires an applicant or licensee who references Appendix D to 10 CFR Part 52 to maintain a copy of the AIA performed to comply with the requirements of 10 CFR 50.150(a) throughout the pendency of the application and for the term of the license (including any period of renewal).

V. Agreement State Compatibility

Under the “Policy Statement on Adequacy and Compatibility of Agreement States Programs,” approved by the Commission on June 20, 1997, and published in the **Federal Register** (62 FR 46517; September 3, 1997), this rule is classified as compatibility “NRC.” Compatibility is not required for Category “NRC” regulations. The NRC program elements in this category are those that relate directly to areas of regulation reserved to the NRC by the Act or the provisions of this section. Although an Agreement State may not adopt program elements reserved to the NRC, it may wish to inform its licensees of certain requirements by a mechanism that is consistent with the particular State’s administrative procedure laws. Category “NRC” regulations do not confer regulatory authority on the State.

VI. Availability of Documents

The NRC is making the documents identified below available to interested persons through one or more of the following methods, as indicated. To access documents related to this action, see the **ADDRESSES** section of this document.

Document	PDR	Web	ADAMS
SECY-11-0145, “Final Rule—AP1000 Design Certification Amendment”	X	X	ML112380823
AP1000 Final Rule Environmental Assessment	X	X	ML113480019
AP1000 Final Rule Public Comment Response Document	X	X	ML113480018
SECY-11-0002, “Proposed Rule—AP1000 Design Certification Amendment”	X	X	ML103000397
AP1000 Proposed Rule Federal Register Notice	X	X	ML103000412
AP1000 Proposed Rule Environmental Assessment	X	X	ML103000415
NUREG-1793, Supplement 2 to Final Safety Evaluation Report for Revision 19 to the AP1000 Standard Design Certification (publicly available)	X	X	ML112061231
NUREG-1793, Final Safety Evaluation Report Related to Certification of the AP1000 Standard Design, September 2004	X	X	ML043570339
NUREG-1793, Supplement 1 to Final Safety Evaluation Report Related to Certification of the AP1000 Standard Design	X	X	ML053410203

Document	PDR	Web	ADAMS
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	X	X	ML111040355 ML111110862
AP1000 Design Control Document (DCD), Revision 19, Transmittal Letter	X	X	ML11171A315
AP1000 DCD, Revision 19 (Public Version)	X	X	ML11171A500
Redacted Version of Dissenting View on AP1000 Shield Building Safety Evaluation Report With Respect to the Acceptance of Brittle Structural Model to be Used for the Cylindrical Shield Building Wall, December 3, 2010 ...	X	X	ML103370648
AP1000 Containment Cleanliness—DCD Markup for Revision 19, February 23, 2011	X	X	ML110590455
Interim Staff Guidance DC/COL-ISG-011, “Finalizing Licensing-basis Information”	X	X	ML092890623
Design Changes Submitted by Westinghouse, Revision 18	X	X	ML100250873
AP1000 Technical Reports (Appendix)	X	X	ML103350501
TR-34, AP1000 Standard COL Technical Report Submittal of APP-GW-S2R-010, “Extension of Nuclear Island Seismic Analysis to Soil Sites,” Revision 5, February 28, 2011	X	X	ML110691050
TR-26, “AP1000 Verification of Water Sources for Long-Term Recirculation Cooling Following a LOCA,” Revision 8	X	X	ML102170123
TR-34, APP-GW-GLN-016, “AP1000 Licensing Design Change Document for Generic Reactor Coolant Pump,” Revision 0, November 17, 2006	X	X	ML063250306
TR-54, “Spent Fuel Storage Racks Structure and Seismic Analysis,” Revision 4	X	X	ML101580475
TR-65, “Spent Fuel Storage Racks Criticality Analysis,” Revision 2	X	X	ML100082093
TR-97, “Evaluation of the Effect of the AP1000 Enhanced Shield Building Design on the Containment Response and Safety Analysis,” Revision 3	X	X	ML11168A041
TR-98, AP1000 COL Standard Technical Report Submittal of APP-GW-GLN-098, “Compliance with 10CFR20.1406,” (Technical Report Number 98), Revision 0, April 10, 2007	X	X	ML071010536
TR-103, “Fluid System Changes,” Revision 2	X	X	ML072830060
TR-108, AP1000 Standard COL Technical Report Submittal of APP-GW-GLN-108, “AP1000 Site Interface Temperature Limits,” Revision 2, September 28, 2007	X	X	ML072750137
TR-111, AP1000 Standard COL Technical Report Submittal of APP-GW-GLN-111, “Component Cooling System and Service Water System Changes Required for Increased Heat Loads,” Revision 0, May 25, 2007	X	X	ML071500563
TR-134, AP1000 Standard COL Technical Report Submittal of APP-GW-GLR-134, “AP1000 DCD Impacts to Support COLA Standardization,” Revision 0, October 26, 2007	X	X	ML073120415
AP1000 Standard COL Technical Report Submittal of APP-GW-GLR-134, “AP1000 DCD Impacts to Support COLA Standardization,” Revision 1, December 12, 2007	X	X	ML073610541
AP1000 Standard COL Technical Report, APP-GW-GLR-134, “AP1000 DCD Impacts to Support COLA Standardization,” Revision 3, January 14, 2008	X	X	ML080220389
NRC Acceptance Review of AP1000 Design Certification Amendment Application, November 2, 2007	X	X	ML073090471
AP1000 Piping DAC/Component COL Information Item 3.9–2 Acceptance Issue, Revision 16, January 11, 2008	X	X	ML080150513
AP1000 License Report APP-GW-GLR-603, Revision 0, “AP1000 Shield Building Design Details for Select Wall and RC/SC Connections”	X	X	ML110910541
AP1000 Design Control Document (DCD), Revision 18, Transmittal Letter	X	X	ML103480059
Westinghouse AP1000 DCD, Revision 18 (public version)	X	X	ML103480572
Advanced Final Safety Evaluation Report for Revision 18 to the AP1000 Standard Design Certification (publicly available)	X	X	ML103260072
AP1000 DCD Transmittal Letter, Revision 17	X	X	ML083220482
AP1000 DCD, Revision 17	X	X	ML083230868
AP1000 DCD Transmittal Letter, Revision 16	X	X	ML071580757
AP1000 DCD, Revision 16	X	X	ML071580939
NRC Notice of Acceptance, Revision 16	X	X	ML073600743
AP1000 DCD, Revision 15	X	X	ML053460400
December 13, 2010, ACRS Letter to Chairman (Report on FSER to AP1000 DCD)	X	X	ML103410351
December 20, 2010, ACRS Letter to Chairman (Long-Term Core Cooling)	X	X	ML103410348
January 19, 2011, ACRS Letter to EDO (Aircraft Impact)	X	X	ML110210462
January 24, 2011, ACRS Letter to EDO (Containment interior cleanliness limits on latent debris in Technical Specifications)	X	X	ML110350282
EDO response to January 24, 2011 ACRS Letter	X	X	ML110480429
May 17, 2011, ACRS Letter to EDO	X	X	ML11144A188
Regulatory History of Design Certification	X	X	ML003761550
Commission Memorandum and Order, CLI-11-05, September 9, 2011	X	X	ML11252B074
Commission Memo and Order on Petitions to Suspend adjudicatory, licensing, and rulemaking activities	X	X	ML112521039
ABWR Final Rule	X	X	ML111040636
ABWR Proposed Rule	X	X	ML102100129
Request for ACRS to Waive review of the AP1000 DCR final rule	X	X	ML112420188
ACRS Waiver of review of AP1000 DCR final rule	X	X	ML11266A070
Design Report for the AP1000 Enhanced Shield Building	X	X	ML111950098
SER Approving Rev. 1 of the Westinghouse Quality Systems Manual	X	X	ML11280A309
ACRS Letter on AP1000 Long-Term Cooling	X	X	ML103410348
ACRS Letter on Staff’s review of Vogtle, including discussion of containment interior cleanliness	X	X	ML110170006
Staff’s response to ACRS’ January 24, 2011, Letter	X	X	ML110350198
Petition to Suspend AP1000 DCR Rulemaking	X	X	ML110970673
Green Ticket for Runkle Petition	X	X	ML11108A077
ACRS letter on AP1000 DCD Revision 19 and Staff’s Review	X	X	ML11256A180
Petition to Suspend AP1000 DCR Rulemaking	X	X	ML111110851
Emergency Petition	X	X	ML111110862
Petition to Terminate the Rulemaking on Design Certification of the AP1000	X	X	ML11171A014

Document	PDR	Web	ADAMS
AP1000 Proposed Rule Package (Rule, FRN, and EA)	X	X	ML103000394
ISG-01, "Seismic Issues Associated with High Frequency Ground Motion"	X	X	ML081400293
Green Ticket Containing Letter from Congressman Markey	X	X	ML110680273
Cover letter for Response to Congressman Markey, August 15, 2011	X	X	ML11080A015
Near-Term Task Force Review of Fukushima	X	X	ML111861807
SRM responding to Near-Term Task Force Report and Recommendations	X	X	ML112310021
Response to Congressman Markey Letter	X	X	ML112450407
Revision 19 to the AP1000 Design Control Document and the AP1000 Final Safety Evaluation Report	X	X	ML11256A180
Advanced Final Safety Evaluation Report, Section 3.8.4	X	X	ML103430502
Presentation Slides "AP1000 Shield Building Design," Meeting with NRC Staff, May 17, 2011 (Proprietary and Non-Proprietary)	X	X	ML111440298
Summary of a Category 1 Meeting With Westinghouse Electric Company Regarding AP1000 Shield Building Design Methodology, May 17, 2011	X	X	ML111430775
G20100734/LTR-10-0528/EDATS: SECY-2010-0595—Ltr. Said Abdel-Khalik re: Report on the Final Safety Evaluation Report Associated with the Amendment to the AP1000 Design Control Document	X	X	ML103560411
Transmittal of WEC Shield Building Action Item 21	X	X	ML102650098
White Paper—Requirements for COL and LWA Issuance, Relative to the Finalization of Standard Design Certification Rulemaking	X	X	ML11152A189
G20110559/LTR-11-0429/EDATS: SECY-2011-0429—Ltr. Stephen E. Kuczynski re: Vogtle Electric Generating Plant Units 3 and 4 Combined License Application—Final Standard Design Certification Rulemaking for LWA—B Request	X	X	ML11210B421
Order (Adopting Proposed Transcript Corrections, Admitting Post-Hearing Responses, and Closing the Record of the Proceeding)	X	X	ML11305A228
Southern Nuclear Operating Company's Request to Waive the Requirements of 10 CFR 2.807	X	X	ML11287A054

VII. Voluntary Consensus Standards

The National Technology Transfer and Advancement Act of 1995, Public Law 104-113, requires that Federal agencies use technical standards that are developed or adopted by voluntary consensus standards bodies unless using such a standard is inconsistent with applicable law or is otherwise impractical. In this final rule, the NRC is approving an amendment to the AP1000 standard plant design for use in nuclear power plant licensing under 10 CFR parts 50 or 52. Design certifications (and amendments thereto) are not generic rulemakings establishing a generally applicable standard with which all parts 50 and 52 nuclear power plant licensees must comply. Design certifications (and amendments thereto) are NRC approvals of specific nuclear power plant designs by rulemaking. Furthermore, design certifications (and amendments thereto) are initiated by an applicant for rulemaking, rather than by the NRC. For these reasons, the NRC concludes that the National Technology Transfer Advancement Act of 1995 does not apply to this final rule.

VIII. Finding of No Significant Environmental Impact: Availability

The Commission has determined under NEPA, and the Commission's regulations in subpart A, "National Environmental Policy Act; Regulations Implementing Section 102(2)," of 10 CFR part 51, "Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions," that this DCR is not a major Federal action significantly affecting the quality of the

human environment and, therefore, an environmental impact statement (EIS) is not required. The basis for this determination, as documented in the final EA, is that the Commission has made a generic determination under 10 CFR 51.32(b)(2) that there is no significant environmental impact associated with the issuance of an amendment to a design certification. This amendment to 10 CFR part 52 does not authorize the siting, construction, or operation of a facility using the amended AP1000 design; it only codifies the amended AP1000 design in a rule. The NRC will evaluate the environmental impacts and issue an EIS as appropriate under NEPA as part of the application for the construction and operation of a facility referencing this amendment to the AP1000 DCR. In addition, as part of the final EA for the amendment to 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. According to 10 CFR 51.30(d), an EA for a design certification amendment is limited to the consideration of whether the design change, which is the subject of the proposed amendment renders a SAMDA previously rejected in the earlier EA to become cost beneficial, or results in the identification of new SAMDAs, in which case the costs and benefits of new SAMDAs and the bases for not incorporating new SAMDAs in the design certification must be addressed. Based upon review of Westinghouse's evaluation, the NRC concludes that the proposed design

changes: (1) Do not cause a SAMDA previously rejected in the EA for the initial AP1000 design certification to become cost-beneficial; and (2) do not result in the identification of any new SAMDAs that could become cost beneficial.

The NRC prepared a final EA following the close of the comment period for the proposed standard design certification. With the issuance of this final rule, all environmental issues concerning SAMDAs associated with the information in the final EA and Appendix 1B of the AP1000 DCD Tier 2 will be considered resolved for plants referencing Amendment 1 to the AP1000 design whose site parameters are within those specified in SAMDA evaluation. The existing site parameters specified in the SAMDA evaluation are not affected by this design certification amendment.

The final EA, upon which the NRC's finding of no significant impact is based, and Revision 19 of the AP1000 DCD are available as discussed in Section IV, Availability of Documents. The NRC sent a copy of the EA and final rule to every State Liaison Officer and no comments were received.

IX. Paperwork Reduction Act Statement

This final rule contains new or amended information collection requirements that are subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*). These requirements were approved by the Office of Management and Budget, approval number 3150-0151.

The burden to the public for these information collections is estimated to average 3 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the information collection. Send comments on any aspect of these information collections, including suggestions for reducing the burden, to the Information Services Branch (T-5F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by Internet electronic mail to INFOCOLLECTS.RESOURCE@NRC.gov; and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0151), Office of Management and Budget, Washington, DC 20503.

Public Protection Notification

The NRC may not conduct or sponsor, and a person is not required to respond to, a request for information or an information collection requirement unless the requesting document displays a currently valid OMB control number.

X. Regulatory Analysis

The NRC has not prepared a regulatory analysis for this final rule. The NRC prepares regulatory analyses for rulemakings that establish generic regulatory requirements applicable to all licensees. Design certifications are not generic rulemakings in the sense that design certifications do not establish standards or requirements with which all licensees must comply. Rather, design certifications are Commission approvals of specific nuclear power plant designs by rulemaking, which then may be voluntarily referenced by applicants for COLs. Furthermore, design certification rulemakings are initiated by an applicant for a design certification, rather than the NRC. Preparation of a regulatory analysis in this circumstance would not be useful because the design to be certified is proposed by the applicant rather than the NRC. For these reasons, the Commission concludes that preparation of a regulatory analysis is neither required nor appropriate.

XI. Regulatory Flexibility Act Certification

Under the Regulatory Flexibility Act of 1980, 5 U.S.C. 605(b), the Commission certifies that this final rule will not have a significant economic impact upon a substantial number of small entities. The final rule provides for certification of an amendment to a nuclear power plant design. Neither the

design certification amendment applicant, nor prospective nuclear power plant licensees who reference this DCR, fall within the scope of the definition of "small entities" set forth in the Regulatory Flexibility Act, or the size standards established by the NRC (10 CFR 2.810). Thus, this rule does not fall within the purview of the Regulatory Flexibility Act.

XII. Backfitting and Issue Finality

The NRC has determined that this final rule meets the requirements of the backfit rule, 10 CFR 50.109, and the requirements governing changes to DCRs in 10 CFR 52.63(a)(1).

The final rule does not constitute backfitting as defined in the backfit rule (10 CFR 50.109) with respect to operating licenses under 10 CFR Part 50 because there are no operating licenses referencing this DCR.

Westinghouse requested many changes to the currently approved AP1000 DCD Revision 15 to correct spelling, punctuation, or similar errors, which result in text that has the same essential meaning. The NRC concludes that these Westinghouse-requested changes, which are editorial in nature, neither constitute backfitting as defined in 10 CFR 50.109(a)(1), nor are these changes inconsistent with the issue finality provisions of 10 CFR 52.63 or 10 CFR 52.83. The backfitting and issue finality provisions were not meant to apply to such editorial changes in as much as such changes would have insubstantial impact on licensees with respect to their design and operation, and are not the kind of changes falling within the policy considerations that underlie the backfit rule and the issue finality provisions of 10 CFR 52.63 and 10 CFR 52.83.

Westinghouse also made proposed changes to Revision 15 of the AP1000 DCD, which the NRC understands were the result of requests to Westinghouse from COL applicants referencing the AP1000 design, to achieve consistency in description and approach in different portions of the DCD. In the absence of a generic change to the AP1000, the referencing COL applicants stated to Westinghouse and the NRC that each would likely take plant-specific departures to address the inconsistency. While this could result in more consistency within any given COL application, it would result in inconsistencies among the different referencing COLs, which is inconsistent with the overall standardization goal of 10 CFR part 52. Accordingly, the NRC concludes that the Westinghouse-requested changes to the AP1000 to address consistency do not constitute

backfitting under the backfit rule (in as much as they are voluntary) and are not otherwise inconsistent with the issue finality provisions of 10 CFR 52.63 and 52.83.

Westinghouse also proposed numerous substantive changes to the AP1000 design described in Revision 15 of the DCD, including, but not limited to, minor component design details, replacement of a design feature with another having similar performance (e.g., turbine manufacturer, power for the auxiliary boiler), and changes allowing additional capability for operational flexibility (e.g., liquid waste holdup tanks, unit reserve transformer). Westinghouse included within its application a detailed list of each DCD content change and the basis for concluding that one or more of the criteria in 10 CFR 52.63(a)(1) are satisfied for each change.

In the course of the NRC review of the technical changes proposed by Westinghouse, the NRC considered the basis offered by Westinghouse and made conclusions about whether the criteria of 10 CFR 52.63(a) were satisfied. These conclusions are included in the chapters of the FSER under ADAMS Accession No. ML112061231. The NRC concluded that all of these changes met at least one of the criteria in 10 CFR 52.63(a) and are not otherwise inconsistent with the issue finality provisions of 10 CFR 52.63 and 52.83. Fifteen of the most significant changes are discussed below, to show that each of the 15 substantive changes to the AP1000 certified design meet at least one of the criteria in 10 CFR 52.63(a)(1)(i) through (a)(1)(vii) and, therefore, do not constitute a violation of the finality provisions in that section.

A. 10 CFR 52.63 Criterion (a)(1)(iv): Provides the Detailed Design Information To Be Verified Under Those ITAAC, Which Are Directed at Certification Information (i.e., DAC)

Title: Removal of Human Factors Engineering Design Acceptance Criteria from the Design Control Document.

Item: 1 of 15.

Description of Change: The ITAAC Design Commitments for HFE are in Tier 1, Table 3.2-1. In Revision 17 of the AP1000 DCD, Westinghouse proposed deletion of the Human Factors DAC (Design Commitments 1 through 4) and provided sufficient supporting documentation to meet the requirements of these ITAAC. Design Commitment 1 pertains to the integration of human reliability analysis with HFE design. Design Commitment 2 pertains to the HFE task analysis. Design Commitment 3 pertains to the human-system

interface. Design Commitment 4 pertains to the HFE program verification and validation implementation. The information developed by Westinghouse to satisfy these ITAAC is included in Chapter 19 of the DCD.

Location within the Safety Evaluation (SER) where the changes are principally described: The details of the NRC's evaluation of Westinghouse's design features associated with the HFE DAC are in Sections 18.7.6 (Design Commitment 1), 18.5.9 (Design Commitment 2), 18.2.8 (Design Commitment 3), and 18.11 (Design Commitment 4) of the FSER.

Evaluation of the Criteria in 10 CFR 52.63(a)(1): The additional information included in Tier 2 provides detailed design information on human factors design that would otherwise have to be addressed through verification of implementation of the human factors DAC. Therefore, the changes to the DCD eliminate the need for DAC on human factors and meet the finality criteria in 10 CFR 52.63(a)(1)(iv).

Title: Change to Instrumentation and Control DAC and Associated ITAAC.

Item: 2 of 15.

Description of Change: In the proposed revision to DCD Chapter 7, Westinghouse chose the Common Q platform to implement the Protection and Safety Monitoring System (PMS) and removed all references to the Eagle 21 platform. This design change, coupled with the development of other information about the PMS system definition design phase, was the basis for Westinghouse's proposed removal of its Tier 1, Chapter 2, Section 2.5.2, Design Commitment 11(a) Design Requirements phase from Table 2.5.2-8, "Inspections, Tests, Analyses, and Acceptance Criteria," for the PMS.

In its proposed revision to the DCD in Chapter 7, Westinghouse altered its design for the Diverse Actuation System (DAS) by implementing it with Field Programmable Gate Array (FPGA) technology instead of microprocessor-based technology. Additional information about the design process for the DAS was added as the basis for Westinghouse's proposed completion of its Tier 1, Chapter 2, Section 2.5.1, Design Commitments 4(a) and 4(b) Design Requirements and System Definition phases from Table 2.5.1-4 "Inspections, Tests, Analyses, and Acceptance Criteria" for the DAS.

Location within the Safety Evaluation (SER) where the changes are principally described: The details of the NRC's evaluation of Westinghouse's design features associated with I&C DAC and ITAAC are in Sections 7.2.2.3.14, 7.2.5, 7.8.2, 7.9.2, and 7.9.3 of the FSER.

Evaluation of the Criteria in 10 CFR 52.63(a)(1): Westinghouse provided additional information that incorporates the results of the design process implementation for the PMS and DAS (which both support completion of Design Commitment 11(a) from Table 2.5.2-8 and 4a and 4b from Table 2.5.1-4, respectively) into the DCD. The additional information included in Tier 2 provides detailed design information on I&C design that would otherwise have to be addressed through verification of implementation of the I&C DAC. Therefore, the changes to the DCD eliminate the need for DAC on I&Cs and meet the finality criteria in 10 CFR 52.63(a)(1)(iv).

B. 10 CFR 52.63 Criterion (a)(1)(vii): Contributes to Increased Standardization of the Certification Information

The changes in the AP1000 amendment generally fall into one of two categories: (1) Changes that provide additional information or a greater level of detail not previously available in the currently-approved version of the AP1000 DCD (Revision 15); or (2) changes requested by COL applicants referencing the AP1000 who would plan to include these changes in their application as departures if they were not approved in the AP1000 DCR amendment. The Commission concludes that both categories of changes meet the 10 CFR 52.63 criterion of "contributes to increased standardization." The bases for the Commission's conclusions, including each category of change, are discussed below.

Additional and More Detailed Information

Westinghouse proposes that the DCD be changed by adding new, more detailed design information that expands upon the design information already included in the DCD. This information would be used by every COL referencing the AP1000 DCR. Incorporating these proposed changes into the AP1000 DCR as part of this amendment contributes to the increased standardization of the certification information by eliminating the possibility of multiple departures. Therefore, these changes enhance standardization, and meet the finality criterion for changes in 10 CFR 52.63(a)(1)(vii).

Changes for Which COL Applicants Would Otherwise Request Departures

Westinghouse proposes several changes to its DCD with the stated purpose of contributing to increased

standardization. Westinghouse represents that these changes were requested by the lead COL applicants currently referencing the AP1000. The NRC, in meetings with these applicants as part of the "Design-Centered Working Group" process for jointly resolving licensing issues, confirmed that these applicants requested these changes and committed to pursue plant-specific departures from the AP1000 if Westinghouse did not initiate such changes to the AP1000 DCR. Such departures may be pursued by individual COL applicants (and licensees) as described in part VIII, "Processes for Changes and Departures" of the AP1000 DCR (Appendix D to 10 CFR part 52). Incorporating these proposed changes into the AP1000 DCR as part of this amendment contributes to the increased standardization of the certification information by eliminating the possibility of multiple departures. Therefore, all Westinghouse-initiated changes for the purpose of eliminating plant-specific departures enhance standardization, and meet the finality criterion for changes in 10 CFR 52.63(a)(1)(vii).

Title: Minimization of Contamination (10 CFR 20.1406(b)).

Item: 3 of 15.

Description of Change: In DCD Section 12.1.2.4, Westinghouse discussed features incorporated into the amended design certification to demonstrate compliance with 10 CFR 52.47(a)(6), which requires that a design certification application include the information required by 10 CFR 20.1406(b), which was adopted in 2007 as part of the general revisions to 10 CFR Part 52. This regulation requires design certification applicants whose applications are submitted after August 20, 1997, to describe how the design will minimize, to the extent practicable, contamination of the facility and the environment, facilitate decommissioning and minimize the generation of radioactive waste. The DCD changes are documented in Westinghouse Technical Report 98, "Compliance with 10 CFR 20.1406" (APP-GW-GLN-098), Revision 0 (ADAMS Accession No. ML071010536). Westinghouse evaluated contaminated piping, the SFP air handling systems, and the radioactive waste drain system to show that piping and components utilize design features that will prevent or mitigate the spread of contamination within the facility or the environment. Westinghouse has incorporated modifications and features such as elimination of underground radioactive tanks, RCPs without mechanical seals, fewer embedded pipes, less radioactive

pipings in the auxiliary building and containment vessel, and monitoring the radwaste discharge pipeline to demonstrate that the AP1000 design certification, as amended, will be in compliance with the subject regulation and Regulatory Guidance (RG) 4.21, "Minimization of Contamination and Radioactive Waste Generation: Life-Cycle Planning" (June 2008).

Location within the SER where the changes are principally described: The details of the NRC's evaluation of Westinghouse's design features are in Section 12.2 of the FSER.

Evaluation of the Criteria in 10 CFR 52.63(a)(1)(vii): Inclusion in the DCD of the more detailed information about the features for minimization of contamination provides additional information to be included in the DCD for the AP1000 that increases standardization of the AP1000 design. Thus, the changes meet the finality criterion for changes in 10 CFR 52.63(a)(1)(vii).

Title: Extension of Seismic Spectra to Soil Sites and Changes to Stability and Uniformity of Subsurface Materials and Foundations.

Item: 4 of 15.

Description of Change: In AP1000 DCD Tier 2, Sections 2.5.2 and 3.7, Westinghouse extended the AP1000 design to sites with five soil profiles, ranging from hard rock to soft soil, for Category I structures, systems, and components. The certified design included only hard rock conditions. To support the technical basis for the extension, Westinghouse provided: Seismic analysis methods, procedures for analytical modeling, soil-structure interaction analysis with three components of earthquake motion, and interaction of non-seismic Category I structures with seismic Category I structures. Also, in DCD Section 2.5.4, Westinghouse extended the AP1000 design with "Stability and Uniformity of Subsurface Materials and Foundations," where the DCD presents the requirements related to subsurface materials and foundations for COL applicants referencing AP1000 standard design. The site-specific information includes excavation, bearing capacity, settlement, and liquefaction potential. On February 28, 2011, Westinghouse submitted Revision 5 to TR-03, "Extension of Nuclear Island Seismic Analysis to Soil Sites," and summarized the report in DCD Appendix 3G, to provide more detail about its analyses.

Location within the SER where the changes are principally described: The details of the NRC's evaluation of Westinghouse's design features associated with extension of seismic

spectra to soil sites are in Section 3.7 of the FSER. The details of the NRC's evaluation of Westinghouse's design features associated with stability and uniformity of subsurface materials and foundations are in Sections 2.5.2 and 2.5.4 of the FSER.

Evaluation of the Criteria in 10 CFR 52.63(a)(1): Westinghouse submitted a change to the DCD that provides the seismic design and supporting analysis for a range of soil conditions representative of expected applicants for a COL referencing the AP1000 design. As a result, the certified design can be used at more sites without the need for departures to provide site-specific analyses or design changes, thus leading to a more uniform analysis and seismic design for all the AP1000 plants. Including in the DCD the information demonstrating adequacy of the design for seismic events for a wider range of soil conditions is a change that provides additional information leading to increased standardization of this aspect of the design. In addition, the change reduces the need for COL applicants to seek departures from the current AP1000 design in as much as most sites do not conform to the currently approved hard rock sites. Therefore, the change increases standardization and meets the finality criterion for changes in 10 CFR 52.63(a)(1)(vii).

Title: Long-Term Cooling.

Item: 5 of 15.

Description of Change: DCD Tier 2, Section 6.3.8, describes the changes to COL information items related to containment cleanliness and verification of water sources for long-term recirculation cooling following a LOCA. The COL information item related to verification of water sources for long-term recirculation cooling following a LOCA was closed based on Westinghouse TR-26, "AP1000 Verification of Water Sources for Long-Term Recirculation Cooling Following a LOCA," APP-GW-GLR-079 (ADAMS Accession No. ML102170123) and other information contained in DCD Chapter 6. Section 6.3.2.2.7 describes the evaluation of the water sources for long-term recirculation cooling following a LOCA, including the design and operation of the AP1000 PCCS debris screens. DCD Tier 1, Section 2.2.3, includes the associated design descriptions and ITAAC.

The COL information item requires a cleanliness program to limit the amount of latent debris in containment consistent with the analysis and testing assumptions.

Location within the SE where the changes are principally described: The details of the NRC's evaluation of

Westinghouse's design features associated with long-term cooling in the presence of LOCA-generated and latent debris and General Design Criteria 35 and 38 are in Subsection 6.2.1.8 of the FSER.

Evaluation of the Criteria in 10 CFR 52.63(a)(1): Inclusion in the DCD of the design and analysis information that demonstrates adequacy of long-term core cooling provides additional information leading to increased standardization of this aspect of the design. Therefore, the change meets the finality criterion for changes in 10 CFR 52.63(a)(1)(vii).

Title: Control Room Emergency Habitability System.

Item: 6 of 15.

Description of Change: DCD Tier 2, Section 6.4, has undergone significant revision. Westinghouse redesigned its main control room emergency habitability system to meet control room radiation dose requirements using the standard assumed in-leakage of 5 cubic feet per minute in the event of a release of radiation. The changes include the addition of a single-failure proof passive filter train. The flow through the filter train is provided by an eductor downstream of a bottled air supply. These changes were prompted by Westinghouse's proposal to revise the atmospheric dispersion factors from those certified in Revision 15 to larger values to better accommodate COL sites. As a result, other design changes were needed to maintain doses in the control room within acceptable limits.

Location within the SER where the changes are principally described: The details of the NRC's evaluation of Westinghouse's design features associated with radiation dose to personnel under accident conditions are in Section 6.4 of the FSER.

Evaluation of the Criteria in 10 CFR 52.63(a)(1): Incorporation of design changes to the main control room ventilation systems would contribute to increased standardization of this aspect of the design. Therefore, the change meets the finality criterion for changes in 10 CFR 52.63(a)(1)(vii).

Title: Changes to the Component Cooling Water System.

Item: 7 of 15.

Description of Change: In Revision 18 to AP1000 DCD Tier 2, Westinghouse proposed changes to the design of the component cooling water system (CCWS) to modify the closure logic for system motor-operated containment isolation valves and install safety-class relief valves on system supply and return lines. The closure logic would close the isolation valves upon a high RCP bearing water temperature signal,

which might be indicative of a RCP heat exchanger tube rupture. This change would automatically isolate this potential leak to eliminate the possibility of reactor coolant from a faulted heat exchanger discharging to portions of the CCWS outside containment.

Location within the SER where the changes are principally described: The details of the NRC's evaluation of Westinghouse's design features associated with the CCWS are in Chapter 23, Section V, of the FSER.

Evaluation of the Criteria in 10 CFR 52.63(a)(1): Westinghouse included changes to the component cooling water in the DCD. These changes will contribute to increased standardization of this aspect of the design. Therefore, the change meets the finality criterion for changes in 10 CFR 52.63(a)(1)(vii).

Title: Changes to Instrumentation and Control Systems.

Item: 8 of 15.

Description of Change: In AP1000 DCD Tier 2, Sections 7.1 through 7.3, Westinghouse completed planning activities related to the architecture of its safety related I&C protection system, referred to as the PMS. Westinghouse also proposed changes to the DCD to reflect resolution of PMS interdivisional data communications protocols and methods utilized to ensure a secure development and operational environment. A secure development and operational environment in this context refers to a set of protective actions taken against a predictable set of non-malicious acts (e.g., inadvertent operator actions, undesirable behavior of connected systems) that could challenge the integrity, reliability, or functionality of a digital safety system. The establishment of a secure development and operational environment for digital safety systems involves: (i) Measures and controls taken to establish a secure environment for development of the digital safety system against undocumented, unneeded and unwanted modifications and (ii) protective actions taken against a predictable set of undesirable acts (e.g., inadvertent operator actions or the undesirable behavior of connected systems) that could challenge the integrity, reliability, or functionality of a digital safety system during operations.

Location within the SER where the changes are principally described: The details of the NRC's evaluation of Westinghouse's design features associated with I&C systems are in Sections 7.1 through 7.3, and 7.9 of NRC's Chapter 7 FSER.

Evaluation of the Criteria in 10 CFR 52.63(a)(1): Inclusion in the DCD of the more detailed information about the I&C architecture and communications provides additional information leading to increased standardization of this aspect of the design. Therefore, the change meets the finality criterion for changes in 10 CFR 52.63(a)(1)(vii).

Title: Changes to the Passive Core Cooling System—Gas Intrusion.

Item: 9 of 15.

Description of Change: In AP1000 DCD Tier 1 and Tier 2, Westinghouse proposed changes to the design of the PCCS to add manual maintenance vent valves and manual maintenance drain valves, and to reroute accumulator discharge line connections in order to address concerns related to gas intrusion. In addition, Westinghouse provided descriptions of surveillance and venting procedures to verify gas void elimination during plant startup and operations. These proposed changes are responsive to the actions requested by Generic Letter 2008-01, "Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems."

The passive core cooling system (PCCS) provides rapid injection of boric acid water, which provides negative reactivity to reduce reactor power to residual levels and ensures sufficient core cooling flow. Noncondensable gas accumulation in the PCCS has the potential to delay injection of boric acid water, which would impact the moderating and heat removal capabilities, thus providing a challenge to the primary fission product barrier and maintenance of a coolable core geometry. As part of its review, the NRC determined that the proposed changes in the design of the PCCS were acceptable for providing protection for design-basis events, such as LOCAs.

Location within the SER where the changes are principally described: The NRC's evaluation of proposed changes to the DCD associated with changes to the PCCS is in Chapter 23, Section L, of the FSER.

Evaluation of the Criteria in 10 CFR 52.63(a)(1): Inclusion in the DCD of the design and analysis information that provides for venting of non-condensable gases provides additional information leading to increased standardization of this aspect of the design. Therefore, the change meets the finality criterion for changes in 10 CFR 52.63(a)(1)(vii).

Title: Integrated Head Package—Use of the QuickLoc Mechanism.

Item: 10 of 15.

Description of Change: In DCD Tier 2, Section 5.3.1.2, Westinghouse describes a revised integrated head package (IHP)

design. The inclusion of eight QuickLoc penetrations in lieu of the forty-two individual in-core instrument thimble-tube-assembly penetrations on the reactor vessel head is a significant decrease in the number of reactor pressure vessel (RPV) closure head penetrations for access to in-core and core exit instrumentation. The QuickLoc mechanism allows the removal of the RPV closure head without removal of in-core and core exit instrumentation and, thus, decreases refueling outage time and overall occupational exposure. This head package design has been installed on a number of operating plants and, as noted, has several operational and safety advantages.

Location within the SER where the changes are principally described: The details of the NRC's evaluation of Westinghouse's design features associated with the (1) IHP and QuickLoc mechanism are in Section 5.2.3 of the FSER and (2) radiation protection pertaining to the addition of the integrated reactor head package and QuickLoc connectors are in Subsection 12.4.2.3 of the FSER.

Evaluation of the Criteria in 10 CFR 52.63(a)(1): Inclusion in the DCD of the changes to the IHP would contribute to the increased standardization of this aspect of the design. Therefore, the change meets the finality criterion for changes in 10 CFR 52.63(a)(1)(vii).

Title: Reactor Coolant Pump Design.

Item: 11 of 15.

Description of Change: In AP1000 DCD Tier 2, Subsection 5.4.1, Westinghouse proposed changes related to the RCP design. These changes include: Change to a single-stage, hermetically sealed, high inertia, centrifugal sealless RCP of canned motor design; use of an externally mounted heat exchanger; and change of the RCP flywheel to bimetallic construction. These DCD changes are documented in: TR-34, "AP1000 Licensing Design Change Document for Generic Reactor Coolant Pump," APP-GW-GLN-016, November 2006 and in other documentation in response to NRC inquiries. The supporting documentation includes an analysis demonstrating that failure of the flywheel would not generate a missile capable of penetrating the surrounding casing, and, therefore, that such failure would not damage the reactor coolant pressure boundary.

Location within the SER where the changes are principally described: The details of the NRC's evaluation of Westinghouse's design features associated with the RCP design are in Section 5.4.1 of the NRC's Chapter 5 FSER.

Evaluation of the Criteria in 10 CFR 52.63(a)(1): Inclusion in the DCD of the changes to the RCP would reduce the possibility of plant-specific departure requests by COL applicants referencing the AP1000 DCR. Therefore, the change meets the finality criterion for changes in 10 CFR 52.63(a)(1)(vii).

Title: Reactor Pressure Vessel Support System.

Item: 12 of 15.

Description of Change: The RPV structural support system of the AP1000 standard design is designed to provide the necessary support for the heavy RPV in the AP1000 standard design. The original anchorage design was bolting into embedded plates of the CA04 structural module. Subsection 3.8.3.1.1 of the AP1000 DCD Tier 2 would be changed to reflect modifications to the RPV support design. In the revised design, there are four support “boxes” or “legs” located at the bottom of the RPV’s cold leg nozzles. The support boxes are anchored directly to the primary shield wall concrete base via steel embedment plates. This CA04 structural module is no longer used in the new design. The four RPV support boxes are safety-related and the design of the RPV associated support structures is consistent with the safe shutdown earthquake design of Seismic Category I equipment. Subsections 3.8.3.5.1 and 5.4.10.2.1 of the DCD are modified.

Location within the SER where the changes are principally described: The details of the NRC’s evaluation of Westinghouse’s design features associated with RPV supports are in Chapter 23, Section R, of the FSER.

Evaluation of the Criteria in 10 CFR 52.63(a)(1): Inclusion in the DCD of the changes to the RPV supports contributes to the increased standardization of this aspect of the design. Therefore, the change meets the finality criterion for changes in 10 CFR 52.63(a)(1)(vii).

Title: Spent Fuel Pool Decay Heat Analysis and Associated Design Changes.

Item: 13 of 15.

Description of Change: In AP1000 DCD Tier 2, Section 9.1.3, Westinghouse proposed changes to the SFP cooling system. Westinghouse proposed to increase the number of spent fuel storage locations from 619 to 889 fuel assemblies and implement the following associated design changes: (1) Increase in component cooling system (CCS) pump design capacity, (2) increase in the CCS supply temperature to plant components, and (3) changes in the CCS parameters related to the RCPs. The increase in the number of assemblies affects the decay heat removal/SFP heatup analyses. The supporting bases

for these DCD changes are documented in: TR-111, “Component Cooling System and Service Water System Changes Required for Increased Heat Loads,” APP-GW-GLN-111, Revision 2, dated May 2007 (ADAMS Accession No. ML071500563); TR-103, “Fluid System Changes,” APP-GW-GLN-019, Revision 2, dated October 2007 (ADAMS Accession No. ML072830060); TR-108, “AP1000 Site Interface Temperature Limits,” APP-GW-GLN-108, Revision 2, dated September 2007 (ADAMS Accession No. ML072750137), and TR-APP-GW-GLR-097, “Evaluation of the Effect of the AP1000 Enhanced Shield Building on the Containment Response and Safety Analysis,” Revision 3, dated June 2011 (ADAMS Accession No. ML11168A041).

Location within the SER where the changes are principally described: The details of the NRC’s evaluation of Westinghouse’s design features associated with the SFP decay heat analysis are in Section 9.2.2 of the FSER.

Evaluation of the Criteria in 10 CFR 52.63(a)(1): Inclusion in the DCD of the changes to the SFP decay heat analysis would contribute to the increased standardization of this aspect of the design. Therefore, the change meets the finality criterion for changes in 10 CFR 52.63(a)(1)(vii).

Title: Spent Fuel Rack Design and Criticality Analysis.

Item: 14 of 15.

Description of Change: In DCD Tier 2, Section 9.1.2, Westinghouse proposed changes to the spent fuel racks: (1) To increase the storage capacity by 270 additional fuel assemblies, and (2) to integrate a new neutron poison into the rack design. These changes included a different rack design and associated structural analysis and a revised criticality analysis. These DCD changes are documented in TR-54, “Spent Fuel Storage Racks Structure and Seismic Analysis,” APP-GW-GLR-033, Revision 4, dated June 2, 2010 (ADAMS Accession No. ML101580475); and TR-65, “Spent Fuel Storage Racks Criticality Analysis,” APP-GW-GLR-029, Revision 2, dated January 5, 2010 (ADAMS Accession No. ML100082093).

Location within the SER where the changes are principally described: The details of the NRC’s evaluation of Westinghouse’s design features associated with the spent fuel rack design and criticality analysis are in Section 9.1.2 of the FSER.

Evaluation of the Criteria in 10 CFR 52.63(a)(1): Inclusion in the DCD of the changes to the spent fuel rack design and criticality analysis would contribute to the increased standardization of this

aspect of the design. Therefore, the change meets the finality criterion for changes in 10 CFR 52.63(a)(1)(vii).

Title: Vacuum Relief System.

Item: 15 of 15.

Description of Change: In Revision 18 to AP1000 DCD Tier 2, Chapters 3, 6, 7, 9, and 16, Westinghouse proposed a change to the design of the containment, which adds a vacuum relief system to the existing containment air filtration system vent line penetration. The proposed vacuum relief system consists of redundant vacuum relief devices inside and outside containment sized to prevent differential pressure between containment and the shield building from exceeding the design value of 1.7 psig, which could occur under extreme temperature conditions.

Each relief flow path consists of a check valve inside containment and a motor operated butterfly valve outside of containment. The redundant relief devices outside containment share a common inlet line with redundant outside air flow entry points. The outlet lines downstream of the outside containment relief devices are routed to a common header connected to the vent line penetration. The redundant relief devices inside containment share a common inlet line from the vent line penetration and have independent discharge lines into containment.

Location within the SER where the changes are principally described: The details of the NRC’s evaluation of Westinghouse’s design features associated with the addition of the vacuum relief system are in Chapter 23, Section W, of the FSER.

Evaluation of the Criteria in 10 CFR 52.63(a)(1): Inclusion in the DCD of the introduction of a containment vacuum relief system would contribute to the increased standardization of this aspect of the design. Therefore, the change meets the finality criterion for changes in 10 CFR 52.63(a)(1)(vii).

Other Technical Changes

The above discussion on selected technical changes is illustrative of the NRC’s consideration of applicability of the finality provisions to other technical changes proposed from Revision 15 of the DCD, which are reflected in Revision 19. As noted earlier, Westinghouse provided its proposed basis for each change as part of the application. The NRC concludes that the other technical changes meet one or more of the finality criteria and thus do not constitute a violation of the finality provisions of 10 CFR 52.63.

Changes Addressing Compliance With Aircraft Impact Assessment Rule (10 CFR 50.150)

The final rule amends the existing AP1000 DCR, in part, to address the requirements of the AIA rule. The AIA rule itself mandated that a DCR be revised, if not during the DCR's current term, then no later than its renewal to address the requirements of the AIA rule. In addition, the AIA rule provided that any COL issued after the effective date of the final AIA rule must reference a DCR complying with the AIA rule, or itself demonstrate compliance with the AIA rule. The AIA rule may therefore be regarded as inconsistent with the finality provisions in 10 CFR 52.63(a) and Section VI of the AP1000 DCR. However, the NRC provided an administrative exemption from these finality requirements when the final AIA rule was issued (74 FR 28112; June 12, 2009). Accordingly, the NRC has already addressed the backfitting implications of applying the AIA rule to the AP1000 with respect to the AP1000 and referencing COL applicants.

Conclusion

The amended AP1000 DCR does not constitute backfitting and is consistent with the finality provisions in 10 CFR part 52. Accordingly, the NRC has not prepared a backfit analysis or documented evaluation for this rule.

XIII. Congressional Review Act

In accordance with the Congressional Review Act of 1996, the NRC has determined that this action is not a major rule and has verified this determination with the Office of Information and Regulatory Affairs of the Office of Management and Budget.

List of Subjects in 10 CFR Part 52

Administrative practice and procedure, Antitrust, Backfitting, Combined license, Early site permit, Emergency planning, Fees, Incorporation by reference, Inspection, Limited work authorization, Nuclear power plants and reactors, Probabilistic risk assessment, Prototype, Reactor siting criteria, Redress of site, Reporting and recordkeeping requirements, Standard design, Standard design certification.

For the reasons set out in the preamble and under the authority of the Atomic Energy Act of 1954, as amended; the Energy Reorganization Act of 1974, as amended; and 5 U.S.C. 552 and 553, the NRC is adopting the following amendments to 10 CFR part 52.

PART 52—LICENSES, CERTIFICATIONS, AND APPROVALS FOR NUCLEAR POWER PLANTS

■ 1. The authority citation for 10 CFR part 52 continues to read as follows:

Authority: Secs. 103, 104, 161, 182, 183, 186, 189, 68 Stat. 936, 948, 953, 954, 955, 956, as amended, sec. 234, 83 Stat. 444, as amended (42 U.S.C. 2133, 2201, 2232, 2233, 2236, 2239, 2282); secs. 201, 202, 206, 88 Stat. 1242, 1244, 1246, as amended (42 U.S.C. 5841, 5842, 5846); sec. 1704, 112 Stat. 2750 (44 U.S.C. 3504 note); Energy Policy Act of 2005, Pub. L. 109–58, 119 Stat. 594 (2005), secs. 147 and 149 of the Atomic Energy Act.

■ 2. In Appendix D to 10 CFR Part 52:

■ a. In Section III, revise paragraphs A and D;

■ b. In Section IV, revise paragraph A.3 and add paragraph A.4;

■ c. In Section V, redesignate paragraph A as paragraph A.1 and add a new paragraph A.2;

■ d. In Section VI, revise paragraphs B.1, B.2, B.7, and E;

■ e. In Section VIII, revise the introductory text of paragraph B.5.b, redesignate paragraphs B.5.d, B.5.e, and B.5.f as paragraphs B.5.e, B.5.f, and B.5.g, respectively, and add a new paragraph B.5.d, and revise paragraphs B.6.b and B.6.c; and

■ f. In Section X, revise paragraph A.1 and add a new paragraph A.4.

The revisions and additions read as follows:

Appendix D to Part 52—Design Certification Rule for the AP1000 Design

* * * * *

III. Scope and Contents

A. Tier 1, Tier 2 (including the investment protection short-term availability controls in Section 16.3), and the generic TSs in the AP1000 Design Control Document, Revision 19, (Public Version) (AP1000 DCD), APP–GW–GL–702, dated June 13, 2011, are approved for incorporation by reference by the Director of the Office of the Federal Register under 5 U.S.C. 552(a) and 1 CFR part 51. Copies of the generic DCD may be obtained from Stanley E. Ritterbusch, Manager, AP1000 Design Certification, Westinghouse Electric Company, 1000 Westinghouse Drive, Cranberry Township, Pennsylvania 16066, telephone (412) 374–3037. A copy of the generic DCD is also available for examination and copying at the NRC's PDR, Room O–1F21, One White Flint North, 11555 Rockville Pike, Rockville, Maryland 20852. Copies are available for examination at the NRC Library, Two White Flint North, 11545 Rockville Pike, Rockville, Maryland 20852, telephone (301) 415–5610, email LIBRARY.RESOURCE@NRC.GOV. The DCD can also be viewed online in the NRC Library at <http://www.nrc.gov/reading-rm/adams.html> by searching under ADAMS Accession No. ML11171A500. All approved

material is available for inspection at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call (202) 741–6030 or go to <http://www.archives.gov/federal-register/cfr/ibr-locations.html>.

* * * * *

D. 1. If there is a conflict between the generic DCD and either the application for the initial design certification of the AP1000 design or NUREG–1793, “Final Safety Evaluation Report Related to Certification of the Westinghouse Standard Design,” and Supplement No. 1, then the generic DCD controls.

2. If there is a conflict between the generic DCD and either the application for Amendment 1 to the design certification of the AP1000 design or NUREG–1793, “Final Safety Evaluation Report Related to Certification of the Westinghouse Standard Design,” Supplement No. 2, then the generic DCD controls.

* * * * *

IV. Additional Requirements and Restrictions

A. * * *

3. Include, in the plant-specific DCD, the sensitive unclassified non-safeguards information (including proprietary information) and safeguards information referenced in the AP1000 DCD.

4. Include, as part of its application, a demonstration that an entity other than Westinghouse is qualified to supply the AP1000 design, unless Westinghouse supplies the design for the applicant's use.

* * * * *

V. Applicable Regulations

A. * * *

2. The regulations that apply to those portions of the AP1000 design approved by Amendment 1 are in 10 CFR parts 20, 50, 73, and 100, codified as of December 30, 2011, that are applicable and technically relevant, as described in the Supplement No. 2 of the FSER (NUREG–1793).

* * * * *

VI. Issue Resolution

* * * * *

B. * * *

1. All nuclear safety issues, except for the generic TS and other operational requirements, associated with the information in the FSER and Supplement Nos. 1 and 2, Tier 1, Tier 2 (including referenced information, which the context indicates is intended as requirements, and the investment protection short-term availability controls in Section 16.3 of the DCD), and the rulemaking records for initial certification and Amendment 1 of the AP1000 design;

2. All nuclear safety and safeguards issues associated with the referenced sensitive unclassified non-safeguards information (including proprietary information) and safeguards information which, in context, are intended as requirements in the generic DCD for the AP1000 design;

* * * * *

7. All environmental issues concerning severe accident mitigation design alternatives

associated with the information in the NRC's EA for the AP1000 design, Appendix 1B of Revision 15 of the generic DCD, the NRC's final EA for Amendment 1 to the AP1000 design, and Appendix 1B of Revision 19 of the generic DCD, for plants referencing this appendix whose site parameters are within those specified in the severe accident mitigation design alternatives evaluation.

* * * * *

E. The NRC will specify at an appropriate time the procedures to be used by an interested person who wishes to review portions of the design certification or references containing safeguards information or sensitive unclassified non-safeguards information (including proprietary information, such as trade secrets or financial information obtained from a person that are privileged or confidential (10 CFR 2.390 and 10 CFR part 9)), for the purpose of participating in the hearing required by 10 CFR 52.85, the hearing provided under 10 CFR 52.103, or in any other proceeding relating to this appendix in which interested persons have a right to request an adjudicatory hearing.

* * * * *

VIII. Processes for Changes and Departures

* * * * *

B. * * *

5. * * *

b. A proposed departure from Tier 2, other than one affecting resolution of a severe accident issue identified in the plant-specific DCD or one affecting information required by 10 CFR 52.47(a)(28) to address 10 CFR 50.150, requires a license amendment if it would:

* * * * *

d. If an applicant or licensee proposes to depart from the information required by 10 CFR 52.47(a)(28) to be included in the FSAR for the standard design certification, then the applicant or licensee shall consider the effect of the changed feature or capability on the original assessment required by 10 CFR 50.150(a). The applicant or licensee must also document how the modified design features and functional capabilities continue to meet the assessment requirements in 10 CFR 50.150(a)(1) in accordance with Section X of this appendix.

* * * * *

6. * * *

b. A licensee who references this appendix may not depart from the following Tier 2* matters without prior NRC approval. A request for a departure will be treated as a request for a license amendment under 10 CFR 50.90.

- (1) Maximum fuel rod average burn-up.
- (2) Fuel principal design requirements.
- (3) Fuel criteria evaluation process.
- (4) Fire areas.
- (5) Reactor coolant pump type.
- (6) Small-break loss-of-coolant accident (LOCA) analysis methodology.
- (7) Screen design criteria.
- (8) Heat sink data for containment pressure analysis.

c. A licensee who references this appendix may not, before the plant first achieves full power following the finding required by 10 CFR 52.103(g), depart from the following Tier

2* matters except under paragraph B.6.b of this section. After the plant first achieves full power, the following Tier 2* matters revert to Tier 2 status and are subject to the departure provisions in paragraph B.5 of this section.

- (1) Nuclear Island structural dimensions.
- (2) American Society of Mechanical Engineers Boiler & Pressure Vessel Code (ASME Code) piping design and welding restrictions, and ASME Code Cases.
- (3) Design Summary of Critical Sections.
- (4) American Concrete Institute (ACI) 318, ACI 349, American National Standards Institute/American Institute of Steel Construction (ANSI/AISC)-690, and American Iron and Steel Institute (AISI), "Specification for the Design of Cold Formed Steel Structural Members, Part 1 and 2," 1996 Edition and 2000 Supplement.
- (5) Definition of critical locations and thicknesses.
- (6) Seismic qualification methods and standards.
- (7) Nuclear design of fuel and reactivity control system, except burn-up limit.
- (8) Motor-operated and power-operated valves.
- (9) Instrumentation and control system design processes, methods, and standards.
- (10) Passive residual heat removal (PRHR) natural circulation test (first plant only).
- (11) Automatic depressurization system (ADS) and core make-up tank (CMT) verification tests (first three plants only).
- (12) Polar crane parked orientation.
- (13) Piping design acceptance criteria.
- (14) Containment vessel design parameters, including ASME Code, Section III, Subsection NE.
- (15) Human factors engineering.
- (16) Steel composite structural module details.

* * * * *

X. Records and Reporting

A. * * *

1. The applicant for this appendix shall maintain a copy of the generic DCD that includes all generic changes it makes to Tier 1 and Tier 2, and the generic TS and other operational requirements. The applicant shall maintain sensitive unclassified non-safeguards information (including proprietary information) and safeguards information referenced in the generic DCD for the period that this appendix may be referenced, as specified in Section VII of this appendix.

* * * * *

4.a. The applicant for the AP1000 design shall maintain a copy of the AIA performed to comply with the requirements of 10 CFR 50.150(a) for the term of the certification (including any period of renewal).

b. An applicant or licensee who references this appendix shall maintain a copy of the AIA performed to comply with the requirements of 10 CFR 50.150(a) throughout the pendency of the application and for the term of the license (including any period of renewal).

* * * * *

Dated at Rockville, Maryland, this 22nd day of December 2011.

For the Nuclear Regulatory Commission.

Annette L. Vietti-Cook,

Secretary of the Commission.

[FR Doc. 2011-33266 Filed 12-29-11; 8:45 am]

BILLING CODE 7590-01-P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2011-0278; Directorate Identifier 2010-NE-10-AD; Amendment 39-16901; AD 2011-26-11]

RIN 2120-AA64

Airworthiness Directives; General Electric Company (GE) GE90-110B1 and GE90-115B Turbofan Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: We are adopting a new airworthiness directive (AD) for the products listed above, with certain part number (P/N) high-pressure compressor (HPC) stages 2-5 spools installed. This AD was prompted by an aborted takeoff caused by liberation of small pieces from the HPC stages 1-2 seal teeth and two shop findings of cracks in the seal teeth. This AD requires eddy current inspection (ECI) or spot fluorescent penetrant inspection (FPI) of the stages 1-2 seal teeth of the HPC stages 2-5 spool for cracks. This AD only allows installation of either HPC stator stage 1 interstage seals that are pregrooved or previously worn seals with acceptable wear marks to prevent heavy rubs. We are issuing this AD to detect cracks in the HPC stages 1-2 seal teeth due to heavy rubs that could result in failure of the seal of the HPC stages 2-5 spool, uncontained engine failure, and damage to the airplane.

DATES: This AD is effective February 3, 2012.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in the AD as of February 3, 2012.

ADDRESSES: For service information identified in this proposed AD, contact General Electric, GE-Aviation, Room 285, 1 Neumann Way, Cincinnati, Ohio 45215; email: geae.aoc@ge.com; phone: (513) 552-3272; fax: (513) 552-3329. You may review copies of the referenced service information at the FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA. For information on the availability of this material at the FAA, call (781) 238-7125.

ENVIRONMENTAL ASSESSMENT BY THE
U.S. NUCLEAR REGULATORY COMMISSION
RELATING TO THE CERTIFICATION OF THE
AMENDMENT TO THE AP1000 STANDARD PLANT DESIGN
DOCKET NO. 52-006

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UNITED STATES NUCLEAR REGULATORY COMMISSION
ENVIRONMENTAL ASSESSMENT AND FINDING OF
NO SIGNIFICANT IMPACT
RELATING TO THE CERTIFICATION OF THE
AMENDMENT TO THE AP1000 STANDARD PLANT DESIGN
DOCKET NO. 52-006

The U.S. Nuclear Regulatory Commission (NRC or the Commission) is proposing to amend the design certification for the AP1000 standard plant design in response to an application submitted on May 26, 2007 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML071580939 (public version)), by Westinghouse Electric Company, LLC (Westinghouse). The purpose of the amendment is to replace combined license (COL) information items and design acceptance criteria (DAC) with specific design information, address the effects of the impact of a large commercial aircraft, incorporate design improvements, and increase standardization of the design. A design certification is a rulemaking; the NRC has decided to adopt design certification rules (DCRs) as appendices to Part 52 of Title 10 of the *Code of Federal Regulations* (10 CFR).

The NRC has performed the following environmental assessment (EA) of the environmental impacts of the proposed amendment and has documented a finding of no significant impact in accordance with the requirements of 10 CFR 51.21 and the National Environmental Policy Act of 1969, as amended. This EA also addresses the severe accident mitigation design alternatives (SAMDAs) that the NRC has considered for the Westinghouse amendment to the AP1000 design. This EA does not address the site-specific environmental impacts of constructing and operating any facility that references the AP1000 design

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certification amendment at a particular site. Those impacts would be evaluated as part of any application or applications for the siting, construction, or operation of such a facility.

As discussed in Section 3.0 of this EA, the NRC has determined that issuing the subject design certification amendment does not constitute a major Federal action significantly affecting the quality of the human environment. This determination is based on the generic finding made in 10 CFR 51.32(b)(2) that there is no significant environmental impact associated with an amendment to a design certification. Issuing the subject design certification amendment would not authorize the siting, construction, or operation of a facility using the AP1000 design. Rather, it would merely codify the amendment to the AP1000 design in a rule that could be referenced in a COL application. Furthermore, because certification of the amendment constitutes only a rule rather than a physical action, it would not involve the commitment of any resources that have alternative uses. As explained in the statements of consideration for “Licenses, Certifications, and Approvals for Nuclear Power Plants; Final Rule” (72 FR 49352, 49,427; August 28, 2007), the 10 CFR 51.32(b)(2) generic finding of no significant impact is legally equivalent to a categorical exclusion. Therefore, the NRC has not prepared an environmental impact statement (EIS) for the action.

In accordance with 10 CFR 51.30(d), an EA for an amendment to a design certification is limited to consideration of the following two matters: 1) whether any design change that is the subject of the proposed amendment renders a SAMDA previously rejected in the earlier EA cost beneficial; and 2) whether such a design change results in the identification of new SAMDAs, in which case the costs and benefits of new SAMDAs and the bases for not incorporating new SAMDAs in the design certification must be addressed. As discussed in Section 4.0 of this EA, the proposed amendment would not cause a SAMDA that was previously rejected in the

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environmental review for the AP1000 design to become cost beneficial or lead to the identification of any new SAMDAs.

ENVIRONMENTAL ASSESSMENT

1.0 Identification of the Proposed Action

The proposed action is to issue a rule amending the certified AP1000 design in Appendix D to 10 CFR Part 52. The revised rule would allow applicants to reference the revised design control document (DCD) as part of a COL application under 10 CFR Part 52.

2.0 The Need for the Proposed Action

The NRC has long sought the safety benefits of commercial nuclear power plant standardization and early final resolution of design issues. The NRC achieves these benefits by certifying nuclear plant designs. Subpart B of 10 CFR Part 52 allows for certification of nuclear plant designs in the form of rulemaking.

The proposed action is to issue a rule amending 10 CFR Part 52 to revise the certified AP1000 design to replace COL information items and DAC with specific design information, address the effects of the impact of a large commercial aircraft, incorporate design improvements, and increase standardization of the design. The amendment would allow COL applicants to reference the revised AP1000 DCD as part of a COL application under 10 CFR Part 52. Those portions of the AP1000 design included in the scope of the certification amendment rulemaking would not be subject to further safety review or approval in a COL proceeding. In addition, the DCR could eliminate the need to consider SAMDAs individually for any facilities that reference the certified AP1000 design.

3.0 The Environmental Impact of the Proposed Action

The proposed action constitutes issuance of an amendment to the AP1000 design certification. According to 10 CFR 51.32(b)(2), the NRC has generically determined that there is

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no significant environmental impact associated with the issuance of an amendment to a design certification. The amendment would merely codify the NRC's approval of the amendment to the AP1000 design through its final safety evaluation report (FSER) on the design and any FSER supplement issued during rulemaking (refer to NUREG-1793, Supplement 2). Furthermore, because certification of the amendment constitutes a rule rather than a physical action, it would not involve the commitment of any resources that have alternative uses.

The amendment to the DCR by itself would not authorize the siting, construction, or operation of a nuclear power plant. An applicant for a COL that references the AP1000 design will be required to address the environmental impacts of construction and operation at a specific site. The NRC would then evaluate the environmental impacts and issue an EIS in accordance with 10 CFR Part 51. However, the SAMDA analysis that has been completed as part of this EA can be incorporated by reference into an EIS related to an application for siting, construction, or operation of a nuclear plant that references the AP1000 design.

4.0 Severe Accident Mitigation Design Alternatives

4.1 Westinghouse's Assessment of Severe Accident Mitigation Design Alternatives

Consistent with the objectives of standardization and early resolution of design issues, the Commission decided to evaluate SAMDAs as part of the original design certification for the AP1000 design. In the 1985, "Policy Statement on Severe Reactor Accidents Regarding Future Designs and Existing Plants" (50 FR 32138; August 8, 1985), the Commission defined the term, "severe accident," as an event that is "beyond the substantial coverage of design-basis events (DBEs)," including events where there is substantial damage to the reactor core (whether or not there are serious offsite consequences). DBEs are events analyzed in accordance with the NRC's Standard Review Plan (NUREG-0800) and documented in several chapters of the AP1000 DCD, such as Chapters 2, 3, and 15.

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The SAMDA analysis in Appendix 1B to the AP1000 DCD, Revision 15, as originally certified, concluded that there were no cost-beneficial SAMDAs for the AP1000 design. In Westinghouse's technical report APP-PRA-GER-001, "AP1000 Design Change Proposal Review for PRA and Severe Accident Input," Westinghouse assessed the impacts of the proposed design changes on the probabilistic risk assessment (PRA) and the SAMDA analysis for the certified AP1000 design.

Westinghouse concluded that if design changes did not significantly affect the applicability of the previous PRA, it could be inferred that the "AP1000 PRA revision will not impact the AP1000 SAMDA." Westinghouse further noted that it did not identify any new SAMDAs to incorporate that had not previously been considered. Therefore, Westinghouse concluded the design changes will not result in a change to the applicability of the certified AP1000 PRA, and the AP1000 SAMDA assessment in the original design remains valid.

As a result, Westinghouse concluded that the SAMDAs that were considered and rejected as not being cost beneficial in the original SAMDA assessment did not become cost beneficial due to the proposed design changes.

4.2 NRC Evaluation

NRC staff reviewed the information in the technical report, and in the EA issued for the original AP1000 DCR. NRC staff reviewed the applicant's evaluation of the proposed design changes and concluded that those changes would not result in a significant change in the core damage frequency, as compared with the existing AP1000 design. Therefore, NRC staff concluded that the proposed design changes would not alter the original SAMDA evaluation and would not change the conclusions reached in the EA issued for the original AP1000 DCR. The staff did not identify any new SAMDAs for further evaluation in accordance with 10 CFR 51.30(d).

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5.0 Public Comments and NRC Responses

On February 24, 2011 (76 FR10269), the NRC issued the draft EA for public comment (ADAMS Accession No. ML103000415). The comment period expired May 10, 2011. While the NRC did not receive any comments specifically directed to the EA, the NRC received several comments regarding technical issues related to the AP1000 amendment SAMDA analysis. These comments and the NRC responses to the comments, as well as other comments and associated NRC responses regarding this AP1000 amendment rulemaking can be found under ADAMS Accession No. ML113480018. See NRC responses to comments under the SAMDA heading.

6.0 Finding of No Significant Impact

On the basis of the EA, the NRC concludes that the proposed action will not have a significant effect on the quality of the human environment. Accordingly, the NRC has decided not to prepare an EIS for the proposed action.

For further details with respect to the proposed action, see the proposed design certification amendment and the documents referenced in the statements of consideration for the proposed amendment (ADAMS Accession No. ML103000397). Documents may be examined, and/or copied for a fee, at the NRC's Public Document Room (PDR), located at One White Flint North, 11555 Rockville Pike, Room O-1F21, Rockville, Maryland 20852. Publicly available records are accessible electronically from the ADAMS Public Electronic Reading Room on the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>. Persons who do not have access to ADAMS or who encounter problems in accessing the documents in ADAMS should contact the NRC PDR reference staff at 1-800-397-4209 or 301-415-4737 or via e-mail to pdr.resource@nrc.gov. Documents are also available electronically by accessing the Federal Rulemaking Web site at <http://www.regulations.gov> and search on Docket ID NRC-2010-0131.

LBP-11-36

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
ATOMIC SAFETY AND LICENSING BOARDS

Before Administrative Judges:

Alan S. Rosenthal, Chairman
Dr. Gary S. Arnold
Dr. William H. Reed

In the Matter of

LUMINANT GENERATION COMPANY LLC
(Comanche Peak Nuclear Power Plant, Units 3
and 4)

ENERGY NORTHWEST
(Columbia Generating Station)

SOUTHERN NUCLEAR OPERATING CO.
(Vogtle Electric Generating Plants, Units 3 and
4)

DUKE ENERGY CAROLINAS, LLC
(William States Lee III Nuclear Station, Units 1
and 2)

Docket Nos. 52-034-COL & 52-035-COL
ASLBP No. 11-914-02-COL-BD01

Docket No. 50-397-LR
ASLBP No. 11-912-03-LR-BD01

Docket Nos. 52-025-COL & 52-026-COL
ASLBP Nos. 11-914-02-COL-BD01 & 11-
913-01-COL-BD01

Docket Nos. 52-018-COL & 52-019 COL
ASLBP No. 11-913-01-COL-BD01

November 30, 2011

MEMORANDUM AND ORDER
(Denying Motions to Reinstate Contention)

1. On October 18, 2011, these three Licensing Boards addressed collectively in LBP-11-27¹ (1) motions to reopen four closed proceedings involving applications for combined licenses (COLs) for certain proposed nuclear facilities;² and (2) a petition to intervene in a not

¹ LBP-11-27, 74 NRC __ (slip op.) (Oct. 18, 2011).

² 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 (Aug. 10, 2011) [hereinafter Bell Bend Motion to Reopen]; 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 (Aug. 11, 2011) [hereinafter Comanche Peak Motion to Reopen]; Motion to Reopen the Record and (continuing . . .)

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previously established proceeding involving the application of an existing facility for renewal of its current operating license.³ The motions and petition had an identical purpose: the admission into each of the five proceedings of a common environmental contention said to arise from an NRC Task Force report. That report focused upon the March 11, 2011 event at the Fukushima Dai-Ichi Nuclear Power Station in Japan in which, as a consequence of a magnitude 9.0 earthquake and an ensuing tsunami, that facility sustained very serious damage.⁴ The contention sought to be admitted would have it that the "new and significant environmental implications" of the findings and recommendations contained in the Task Force report had to be addressed by the Commission in an environmental impact statement.⁵

For the reasons developed in LBP-11-27, we denied all four reopening motions as well as the intervention petition. In a nutshell, we concluded that the common contention was prematurely advanced.⁶

(. . . continued)

Admit Contention Regarding the Safety and Environmental Implications of the Nuclear Regulatory Commission Task Force Report on the Fukushima Dai-Ichi Accident (Aug. 11, 2011) [hereinafter Vogtle Motion to Reopen]; 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 (Aug. 11, 2011) [hereinafter William States Lee Motion to Reopen].

³ Petition for Hearing and Leave to Intervene in Operating License Renewal for Energy Northwest's Columbia Generating Station (Aug. 22, 2011) [hereinafter Columbia Motion to Intervene].

⁴ 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).

⁵ Contention Regarding NEPA Requirement to Address Safety and Environmental Implications of the Fukushima Task Force Report (Aug. 10, 2011) at 11. While this particular contention was filed in the Bell Bend proceeding, we note that the contentions submitted in all five proceedings are substantially similar, and therefore cite to only one.

⁶ LBP-11-27, 74 NRC at __ (slip op. at 13).

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That conclusion rested in turn largely upon the teachings of a September 9, 2011 Commission decision (CLI-11-05), that examined a series of petitions seeking the suspension of adjudicatory, licensing, and rulemaking activities and other relief in light of the Fukushima event.⁷ Among other things, CLI-11-05 explicitly assessed the current significance of the Task Force's findings and recommendations. The outcome of that examination was the denial of virtually all of the requested relief on the ground that it was prematurely sought.⁸ As explained in LBP-11-27, the basis assigned for that outcome applied equally to the matter before us.⁹

Precisely the same Fukushima contention had been put before licensing boards in a number of active proceedings in which there are other issues requiring their adjudicatory consideration. Thus, no matter its substance, the action of other boards on that contention cannot serve of itself to close out any of those proceedings. In sharp contrast, the charge given to our three Boards was perforce limited to the passing upon the four reopening motions and the intervention petition. Thus, with the issuance of LBP-11-27, our assigned task would seem to have been completed, subject only to the possible filing of a motion for reconsideration of that decision or a remand from the Commission should that body undertake to review the decision either on an appeal taken from it or on the Commission's own initiative.

2. Although appeals to the Commission have been taken from LBP-11-27,¹⁰ there has not been an express request that we reconsider the underpinnings of our prematurity

⁷ Union Electric Co. d/b/a Ameren Missouri (Callaway Plant, Unit 2), CLI-11-05, 74 NRC __ (slip op.) (Sept. 9, 2011).

⁸ Id. at __ (slip op. at 41-42).

⁹ LBP-11-27, 74 NRC at __ (slip op. at 13).

¹⁰ See Petition for Review of LBP-11-27 (Nov. 2, 2011). Petitioners requested that the Commission hold that appeal in abeyance pending our action on the reinstatement motions. Id. at 2.

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determination in that decision. Instead, what we now have in hand are a number of essentially identical pleadings that were filed on October 28, 2011¹¹ and cover all but one of the nuclear power plants embraced by the previously denied reopening motions and intervention petition.¹² Denominated motions to reinstate and supplement the basis for the previously rejected Fukushima contention, these new submissions are said to be justified by a development that coincidentally occurred on October 18, the date of the issuance of LBP-11-27. That development was the issuance by the Commission of a Staff Requirements Memorandum -- SRM/SECY-11-0124 (SRM).¹³ In the view of the movants, this document had the necessary effect of removing the ground assigned in LBP-11-27 for the rejection of the Fukushima environmental contention.

Given the lack of any significant difference between the several reinstatement motions, it is enough for present purposes to refer just to that submitted with regard to the Vogtle facility by a group of organizations headed by the Center for a Sustainable Coast and represented by the Turner Environmental Law Clinic at the Emory University School of Law (Vogtle motion).

¹¹ [Center for a Sustainable Coast, Women's Action for New Directions f/k/a Atlanta Women's Action for New Directions, and Southern Alliance for Clean Energy's] Motion to Reinstate and Supplement the Basis for Fukushima Task Force Report Contention (Oct. 28, 2011) [hereinafter Vogtle Motion]; [Blue Ridge Environmental Defense League's William States Lee] Motion to Reinstate and Supplement the Basis for Fukushima Task Force Report Contention (Oct. 28, 2011); [Northwest Environmental Advocates'] Motion to Reinstate and Supplement the Basis for Fukushima Task Force Report Contention (Oct. 28, 2011); [Blue Ridge Environmental Defense League's Vogtle] Motion to Reinstate and Supplement the Basis for Fukushima Task Force Report Contention (Oct. 28, 2011), and [Lon Burman, Sustainable Energy and Economic Development (SEED) Coalition, Public Citizen, and True Cost of Nukes'] Motion to Reinstate and Supplement the Basis for Fukushima Task Force Report Contention (Oct. 28, 2011).

¹² The exception is the Bell Bend Nuclear Power Plant.

¹³ Staff Requirements -- SECY-11-0124 -- Recommended Actions to be Taken Without Delay from the Near-Term Task Force Report at 1 (Oct. 18, 2011) (unanimous approval) (SRM/SECY-11-0124).

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Whatever might be concluded with regard to the substance of that filing will be equally applicable to the other motions.

In the October 18 SRM, the Commission directed the Staff to implement “without delay” the recommendations of the Task Force and to complete by 2016 its review of the lessons learned from the Fukushima event.¹⁴ On the apparent premise that the lack of previous Commission action on the Task Force findings and recommendations was the sole basis for the rejection of the Fukushima contention in LBP-11-27 as premature, the Vogtle motion would have it that the contention must now be deemed admissible.¹⁵

That premise is far wide of the mark. It is quite true that LBP-11-27 stressed that the Commission had not as yet accepted the Task Force’s findings and recommendations. A reading of the entire decision makes clear, however, that the prematurity determination did not rest solely upon that consideration. To the contrary, after a review of the analysis that undergirded the Commission’s conclusion in CLI-11-05 that the request for relief before it was premature, we had this to say: “It is difficult to fathom how the Commission could have stated more precisely and definitively that it remains much too early in the process of assessing the Fukushima event in the context of the operation of reactors in the United States to allow any informed conclusion regarding the possible safety or environmental implications of that event regarding such operation.”¹⁶

We have not been provided in the Vogtle motion any reason to believe that the issuance of the SRM of itself materially changed matters in that regard and gave rise to the environmental

¹⁴ Staff Requirements Memo at 1.

¹⁵ Vogtle Motion at 3.

¹⁶ LBP-11-27, 74 NRC at __ (slip op. at 13).

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implications that the Fukushima contention maintains must now be examined in an environmental impact statement. Thus, were we required to address the reinstatement motion on the merits, we would be inclined to agree with the applicants and NRC Staff,¹⁷ as well as with other licensing boards that have already passed upon the significance of the document in a like context,¹⁸ that the SRM does not provide a foundation for the admission of the contention.

As we see it, however, the Vogtle motion and its companions are appropriately denied on an entirely different and independent ground not involving an inquiry into the merits of the claim that the Fukushima contention should be restored on the basis of the October 18 SRM. As noted above,¹⁹ these three Boards were established for the sole purpose of ruling upon the motions to reopen four closed proceedings and the intervention petition that sought to initiate a new proceeding. Neither the referral of the motions/petitions to the Chief Administrative Judge of the Atomic Safety and Licensing Board Panel nor his assignment of those pleadings to the newly-created Boards contains the slightest suggestion that the Boards' responsibilities might extend beyond a denial of the sought relief.²⁰ Most particularly, there is nothing in any document related to the establishment of these Boards that might suggest a contemplation that

¹⁷ See NRC Staff's Answer to Motion to Reinstate and Supplement the Basis for Fukushima Task Force Report Contention (Nov. 7, 2011) at 5-6; Southern Nuclear Operating Company's Response to Motion to Reinstate and Supplement the Basis for Fukushima Task Force Report Contention (Nov. 7, 2011) at 8-10.

¹⁸ See, e.g., Florida Power & Light Co. (Turkey Point Units 6 and 7), LBP-11-33, 74 NRC __, __-__ (slip op. at 9-10) (Nov. 21, 2011); Pacific Gas & Electric Co. (Diablo Canyon Nuclear Power Plant, Units 1 and 2), LBP-11-32, 74 NRC __, __ (slip op. at 21) (Nov. 18, 2011).

¹⁹ See supra pages 1-2.

²⁰ See Energy Northwest; Establishment of Atomic Safety and Licensing Board, 76 Fed. Reg. 56,242 (Sept. 12, 2011); Duke Energy Carolinas, LLC; Southern Nuclear Operating Company; Establishment of Atomic Safety and Licensing Board, 76 Fed. Reg. 56,242 (Sept. 12, 2011); Southern Nuclear Operating Co., PPL Bell Bend, L.L.C., Luminant Generation Company LLC; Establishment of Atomic Safety and Licensing Board, 76 Fed. Reg. 56,242 (Sept. 12, 2011).

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they would remain in existence indefinitely for the purpose of springing into action whenever some new development might be presented as support for the reinstatement of the Fukushima contention.

We need add only that there is no occasion to decide here whether there might possibly be some special circumstances in which, after having completed its assigned mission in the particular proceeding, a Board might justifiably be expected to remain available to entertain endeavors to resurrect the then-closed proceeding on the strength of some new development. Suffice it to say, we see no such circumstances in this instance and none has been presented to us by the movants.

For the foregoing reasons, the motions to reinstate the Fukushima contention are denied on the ground that they seek relief beyond what was within the Boards' charter.

It is so ORDERED.

THE ATOMIC SAFETY
AND LICENSING BOARDS

/RA/

Alan S. Rosenthal, Chairman
ADMINISTRATIVE JUDGE

/RA/

Dr. Gary S. Arnold
ADMINISTRATIVE JUDGE

/RA/

Dr. William H. Reed
ADMINISTRATIVE JUDGE

Rockville, Maryland
November 30, 2011

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of)

LUMINANT GENERATION COMPANY, LLC)

Docket Nos. 52-034-COL
and 52-035-COL

(Comanche Peak Nuclear Power Plant,
Units 3 and 4))

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing MEMORANDUM AND ORDER (DENYING MOTIONS TO REINSTATE CONTENTION) (LBP-11-36) have been served upon the following persons by Electronic Information Exchange.

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Docket Nos. 52-034-COL and 52-035-COL
MEMORANDUM AND ORDER (DENYING MOTIONS TO REINSTATE CONTENTION)
(LBP-11-36)

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Dated at Rockville, Maryland
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LBP-11-27

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARDS

Before Administrative Judges:

Alan S. Rosenthal, Chairman
Dr. Gary S. Arnold
Dr. William H. Reed

In the Matters of

PPL BELL BEND, L.L.C.
(Bell Bend Nuclear Power Plant)

Docket No. 52-039-COL
ASLBP No. 11-914-02-COL-BD01

LUMINANT GENERATION COMPANY LLC
(Comanche Peak Nuclear Power Plant, Units 3
and 4)

Docket Nos. 52-034-COL & 52-035-COL
ASLBP No. 11-914-02-COL-BD01

ENERGY NORTHWEST
(Columbia Generating Station)

Docket No. 50-397-LR
ASLBP No. 11-912-03-LR-BD01

SOUTHERN NUCLEAR OPERATING CO.
(Vogtle Electric Generating Plants, Units 3 and
4)

Docket Nos. 52-025-COL & 52-026-COL
ASLBP Nos. 11-914-02-COL-BD01 & 11-
913-01-COL-BD01

DUKE ENERGY CAROLINAS, LLC
(William States Lee III Nuclear Station, Units 1
and 2)

Docket Nos. 52-018-COL & 52-019 COL
ASLBP No. 11-913-01-COL-BD01

October 18, 2011

MEMORANDUM AND ORDER

(Denying Motions To Reopen Closed Proceedings and
Intervention Petition / Hearing Request as Premature)

I. INTRODUCTION

Before these three identically constituted Licensing Boards are (1) motions filed by individuals and organizations seeking to revive a total of four now-closed adjudicatory proceedings and (2) an intervention petition and hearing request (hereafter petition) in a not previously established proceeding. The purpose of both the motions and the petition is to put before the Boards a new and essentially identical contention for their consideration.

The four closed adjudicatory proceedings involved applications for combined construction permits and operating licenses (COLs) for the following nuclear power facilities:

Bell Bend Nuclear Power Plant (Bell Bend) to be located in Luzerne County, Pennsylvania;¹

Comanche Peak Nuclear Power Plant, Units 3 and 4 (Comanche Peak), to be located in Somervell County, Texas;²

Vogtle Electric Generating Plants, Units 3 and 4 (Vogtle), to be located in Burke County, Georgia;³ and

¹ Bell Bend Nuclear Power Plant Combined License Application Part 4: Technical Specifications and Bases at 1-19 (Rev. 2) (Feb. 2010) (ADAMS Accession No. ML101890281). Movant Gene Stilp moved to reopen the Bell Bend proceeding for consideration of the common contention on August 10, 2011. 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 (Aug. 10, 2011); Contention Regarding NEPA Requirement To Address Safety and Environmental Implications of the Fukushima Task Force Report (Aug. 10, 2011) [hereinafter Bell Bend Contention]. Mr. Stilp filed a corrected motion to reopen on August 17, 2011. Corrected 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 (Aug. 17, 2011).

² Comanche Peak Nuclear Power Company Units 3 and 4 COL Application Part 1 Administrative and Financial Information at 9 (Rev. 2) (June 2011) (ADAMS Accession No. ML11186A867). Movants Lon Burman, Sustainable Energy and Economic Development (SEED) Coalition, Public Citizen, and True Cost of Nukes, Notice of Appearance for Robert V. Eye (Apr. 7, 2009), jointly filed the common contention on August 11, 2011, Contention Regarding NEPA Requirement To Address Safety and Environmental Implications of the Fukushima Task Force Report (Aug. 11, 2011), and moved to reopen the Comanche Peak proceeding on September 15, 2011. 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 (Sept. 15, 2011).

³ Southern Nuclear Operating Company Vogtle Electric Generating Plant, Units 3 & 4 COL Application at 1-16 (Rev. 4) (June 2011) (ADAMS Accession No. ML11180A098). Two motions to reopen the Vogtle proceeding for consideration of the common contention were filed. First, Blue Ridge Environmental Defense League (BREDL) filed the reopening motion and common contention on August 11, 2011. 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 (Aug. 11, 2011) [hereinafter Blue Ridge Vogtle Motion]; Contention Regarding NEPA Requirement To Address Safety and Environmental Implications of the Fukushima Task Force Report (Aug. 11, 2011) [hereinafter Blue Ridge Vogtle Contention]. Second, Center for a Sustainable Coast, Georgia Women's Action for New Directions f/k/a Atlanta Women's Action for New Directions, and Southern Alliance for Clean Energy (collectively, CSC Intervenor) filed the common contention on August 11, 2011 and the reopening motion on August 12, 2011. Motion To Reopen the Record and Admit Contentions To Address the Safety and Environmental Implications of the Nuclear Regulatory Commission Task Force Report on the Fukushima Dai-Ichi Accident (Aug. 12,

William States Lee III Nuclear Station (Lee) to be located in Cherokee County, South Carolina.⁴

Each of these adjudicatory proceedings was terminated without an evidentiary hearing being held.

For its part, the petition is addressed to the application for a renewal of the operating license possessed by the Columbia Generating Station, located on the Department of Energy's Hanford Reservation in Benton County, Washington.⁵ Because no hearing requests were submitted in response to the notice of opportunity published in the Federal Register,⁶ no adjudicatory proceeding was established in the wake of that notice. Thus, in the case of Columbia Station, an intervention petition and request for hearing were required in order to advance the common contention.

The endeavor now to reopen four closed proceedings and to give birth to yet a fifth has its roots in a single event and, indeed, with regard to each, an essentially identical case is presented in support of the requested relief. That event was the severe and consequential damage to the Fukushima Dai-Ichi Nuclear Power Station in Japan brought about by a

2011); Contention Regarding NEPA Requirement To Address Safety and Environmental Implications of the Fukushima Task Force Report (Aug. 11, 2011).

⁴ Combined License Application Part 1 General and Financial Information William States Lee III Nuclear Station Units 1 and 2 at 1.0-5 (Rev. 3) (Dec. 2010) (ADAMS Accession No. ML110030639). BREDL moved to admit the common contention in the William States Lee proceeding on August 11, 2011. Motion To Admit New Contention Regarding the Safety and Environmental Implications of the Nuclear Regulatory Commission Task Force Report on the Fukushima Dai-Ichi Accident (Aug. 11, 2011); Contention Regarding NEPA Requirement To Address Safety and Environmental Implications of the Fukushima Task Force Report (Aug. 11, 2011) [hereinafter William States Lee Contention].

⁵ License Renewal Application Columbia Generating Station at 1.2-1 (Jan. 2010) (ADAMS Accession No. ML100250658). Petitioner Northwest Environmental Advocates petitioned to intervene in the Columbia Station license renewal application process on August 22, 2011. Petition for Hearing and Leave To Intervene in Operating License Renewal for Energy Northwest's Columbia Generating Station (Aug. 22, 2011) [hereinafter Columbia Station Petition].

⁶ 75 Fed. Reg. 11,572 (Mar. 11, 2010).

magnitude 9.0 earthquake and an ensuing tsunami that occurred on March 11, 2011. Following that event, this agency immediately embarked upon a course designed to determine the implications of that disaster in terms of the safety of reactors located in the United States.

In that regard, at the Commission's direction, the NRC Staff established a Task Force.⁷ Its assigned task was "to review [NRC] processes and regulations to determine, among other things, whether the agency should make additional improvements to our regulatory system."⁸ The Task Force was instructed to "submit for [Commission] consideration recommendations for technical and policy direction."⁹

On July 12, 2011, the Task Force issued its near-term report, containing a substantial number of recommendations for improving the safety of both new and operating reactors.¹⁰ At the same time, its authors stated that the "continued operation and continued licensing activities do not pose an imminent risk to public health and safety."¹¹

As will shortly be seen, it was the issuance of this report, and more particularly the recommendations set forth in it, that triggered the motions and petition in hand. In addition, very similar contentions founded upon the Task Force report has been simultaneously placed before a number of other licensing boards in currently active proceedings.¹²

⁷ Commission Memorandum, "NRC Actions Following the Events in Japan" at 1 (Mar. 21, 2011) (ADAMS Accession No. ML110800456) [hereinafter Tasking Memorandum].

⁸ Union Electric Co. d/b/a Ameren Missouri (Callaway Plant, Unit 2), CLI-11-05, 74 NRC __, __ (slip op. at 4) (Sept. 9, 2011).

⁹ Id. (citing Tasking Memorandum).

¹⁰ Dr. Charles Miller et al., 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) (ADAMS Accession No. ML111861807) [hereinafter Near-Term Task Force Report].

¹¹ Id. at vii.

¹² For example, the common contention has also been filed in Tennessee Valley Authority (Watts Bar Unit 2), Docket No. 50-391-OL. Contention Regarding NEPA Requirement To Address Safety and Environmental Implications of the Fukushima Task Force Report (Aug. 11, 2011) at 4 (ADAMS Accession No. ML11223A291).

The motions and petition are opposed by the various utility applicants and the NRC Staff on a variety of grounds, including an insistence that the filings are untimely and do not meet the standards imposed by the Commission's Rules of Practice with regard to reopening closed records and contention admissibility.¹³ For the reasons set forth in greater detail below, we need not address those standards here. This is because, giving effect to a September 9 Commission issuance (CLI-11-05),¹⁴ it is apparent to us that, far from being untimely, the motions and petition are, in fact, premature and must be denied on that basis without regard to any other considerations. The Columbia Station petitioner and the movants in two of the closed adjudicatory proceedings address CLI-11-05 in their reply memoranda.¹⁵ The movants in all four closed adjudicatory proceedings, as well as the Columbia Station petitioner, will, of course, be free to seek the relief currently denied them at such time as the concern underlying their current contention becomes ripe for consideration in an adjudicatory context.

¹³ For example, these arguments are raised by the applicant and NRC Staff in the Vogtle proceeding. NRC Staff Answer to Petitioners' Motion To Admit New Contention Regarding the Safety and Environmental Implications of the NRC Task Force Report on the Fukushima Dai-Ichi Accident (Sept. 6, 2011) at 1; Southern Nuclear Operating Company's Answer in Opposition to Motions To Reopen the Record and Request To Admit New Contentions (Aug. 22, 2011) at 3, 6, 24.

¹⁴ Callaway, CLI-11-05, 74 NRC ____.

¹⁵ In the Vogtle proceeding, CLI-11-05 is addressed in BREDL's reply memorandum, Reply Memorandum Regarding Timeliness and Admissibility of New Contentions Seeking Consideration of Environmental Implications of Fukushima Task Force Report in Individual Reactor Licensing Proceedings (Sept. 18, 2011) at 1, and in the CSC Intervenor's reply memorandum, Reply Memorandum Regarding Timeliness and Admissibility of New Contentions Seeking Consideration of Environmental Implications of Fukushima Task Force Report in Individual Reactor Licensing Proceedings (Sept. 13, 2011) at 1. BREDL also addresses CLI-11-05 in the reply memorandum it submitted in the William States Lee proceeding. Reply Memorandum Regarding Timeliness and Admissibility of New Contentions Seeking Consideration of Environmental Implications of Fukushima Task Force Report in Individual Reactor Licensing Proceedings (Sept. 19, 2011) at 1. In the Columbia Station proceeding, CLI-11-05 is addressed in Northwest Environmental Advocates' reply memorandum. Reply Memorandum Regarding Timeliness and Admissibility of New Contentions Seeking Consideration of Environmental Implications of Fukushima Task Force Report in Individual Reactor Licensing Proceedings (Sept. 22, 2011) at 1.

Given the commonality of the relief sought by the motions and petition, for the purpose of the ensuing discussion we are focusing upon the motion to reopen the Vogtle COL proceeding submitted by the Blue Ridge Environmental Defense League (BREDL).¹⁶ Our conclusions relating to its prematurity have equal application to all of the other filings before us.

II. THE VOGTLE CONTENTION

BREDL filed its motion to reopen the Vogtle proceeding on August 11, 2011, the same date upon which most of the other motions to reopen and the petition to intervene were filed. Its purpose in seeking reopening is to have considered the following new contention that, as previously noted, is common to all of the other motions and the petition before the Board:

The EIS [(environmental impact statement)] 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.¹⁷

As BREDL emphasizes, the contention is founded on its claim that the EIS prepared by the NRC Staff for this facility "fails to address the extraordinary environmental and safety

¹⁶ Blue Ridge Vogtle Motion; Blue Ridge Vogtle Contention.

¹⁷ Blue Ridge Vogtle Contention at 4. The other five proposed new contentions are distinct in two respects, neither of which is of any significance for present purposes. First, BREDL's contention in the Vogtle proceeding is the only contention that contains the words "including seismic-flood and environmental justice issues." Id. Second, the proposed new contentions for the Bell Bend, Columbia Station, and William States Lee facilities each challenge the facility's ER, Bell Bend Contention at 4; Columbia Station Petition at 20; William States Lee Contention at 5, because an EIS had not issued by the time the proposed new contentions were filed. See Application Review Schedule for the Combined License Application for Bell Bend Nuclear Power Plant, <http://www.nrc.gov/reactors/new-reactors/col/bell-bend/review-schedule.html> (last visited Oct. 12, 2011); Columbia Generating Station - License Renewal Application, <http://www.nrc.gov/reactors/operating/licensing/renewal/applications/columbia.html> (last visited Oct. 12, 2011); Letter from David B. Matthews, Director, Division of New Reactor Licensing, Office of New Reactors, to Bryan J. Dolan, Vice President, Nuclear Plant Development, Duke Energy Carolinas, LLC (Jan. 11, 2011) tbl. 1 (ADAMS Accession No. ML103370325). The Bell Bend, Columbia Station, and William States Lee proposed new contentions also refer to "NEPA and the NRC regulations" instead of "10 C.F.R. § 51.92(a)(2) and 40 C.F.R. § 1502.9(c)." Bell Bend Contention at 4; Columbia Station Petition at 20; William States Lee Contention at 5.

implications of the findings and recommendations” of the Task Force report¹⁸ and rests upon “information contained within the Task Force [r]eport.”¹⁹

Turning to the specific assertions undergirding the contention, BREDL would have it that the Task Force report’s “implication” is “that compliance with current NRC safety requirements does not adequately protect public health and safety from severe accidents and their environmental effects.”²⁰ It characterizes the Task Force report as “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.”²¹ In that regard, BREDL maintains that the Task Force recommended that “severe accident mitigation alternatives (‘SAMAs’) [be] imposed as mandatory measures.”²² It further asserts that 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.”²³ BREDL additionally points out that “[t]he Task Force recommended that licensees reevaluate the seismic and flooding hazards at their sites and if necessary update the design basis and [structures, systems, and components] important to safety to protect against updated hazards.”²⁴

According to BREDL, the Task Force’s recommendations also include

¹⁸ Blue Ridge Vogtle Motion at 1.

¹⁹ Id. at 4.

²⁰ Id. at 5-6.

²¹ Blue Ridge Vogtle Contention at 2 (citing Near-Term Task Force Report at 20-21).

²² Blue Ridge Vogtle Motion at 5; accord Blue Ridge Vogtle Contention at 5-6 (“[T]he Task Force recommended that the NRC incorporate severe accidents into the ‘design basis’ and subject it to mandatory safety regulations.”).

²³ Blue Ridge Vogtle Contention at 6 (citing Near-Term Task Force Report at 73-75).

²⁴ Id. at 15 (citing Near-Term Task Force Report at 30).

strengthening [station blackout] mitigation capability at all operating and new reactors for design-basis and beyond-design-basis external events, . . . requiring reliable hardened vent designs in [boiling water reactor] facilities with Mark I and Mark II containments . . . , enhancing spent fuel pool makeup capability and instrumentation for the spent fuel pool . . . and strengthening and integrating onsite emergency response capabilities such as [emergency operating procedures], [severe accident management guidelines], and [extensive damage mitigation guidelines].²⁵

BREDL argues that admission of the proposed new 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” because “the NRC Commissioners have postponed taking action on the Task Force’s recommendations.”²⁶

BREDL represents that “[t]he Task Force urges that some of its recommendations,” including proposed new measures for prolonged station blackout mitigation and for spent fuel pool makeup capability and instrumentation, should be considered before COL licensing decisions are made.²⁷ BREDL concludes that NEPA requires the NRC to “address the Task Force’s findings and recommendations as they pertain to Vogtle” before making a licensing decision.²⁸

Still further, BREDL asserts that the Task Force report’s “conclusions and recommendations” are “‘new and significant information’ whose environmental implications must be considered” before the NRC makes decisions on the application.²⁹ BREDL would have it that “the information is ‘new’ because it stems directly from the Fukushima accident,” which it concedes occurred five months before it filed the proposed new contentions.³⁰ In BREDL’s

²⁵ Id. at 16-17 (citing Near-Term Task Force Report §§ 4.2.1, 4.2.2, 4.2.4, 4.2.5).

²⁶ Id. at 3.

²⁷ Id. at 17.

²⁸ Id. at 18.

²⁹ Id. at 10.

³⁰ Id.

view, the Task Force report's conclusions and recommendations are "'significant' because [they] raises an extraordinary level of concern" about how the plant "impacts public health and safety."³¹

For factual support of its assertions, BREDL "relies on the Task Force [r]eport itself" and proffers a declaration by Dr. Arjun Makhijani as expert support.³² According to BREDL, Dr. Makhijani's declaration "confirms the environmental significance of the Task Force's findings and recommendations with respect to the environmental analyses for all pending nuclear licensing cases and design certification applications."³³ BREDL assigns to Dr. Makhijani the belief that the "costs may be significant" if severe accident mitigation measures are imposed as mandatory measures.³⁴

In addition, BREDL supplies the declaration of Dr. Ross McCluney.³⁵ It asserts that "Dr. McCluney is a highly qualified expert in seismic-flooding issues raised in the Task Force [r]eport."³⁶ BREDL attributes to Dr. McCluney the opinion that "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."³⁷

³¹ Id. (citing 40 C.F.R. § 1508.27(b)(2)).

³² Blue Ridge Vogtle Motion at 6.

³³ Blue Ridge Vogtle Contention at 20.

³⁴ Id. at 12.

³⁵ Id., Att., 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 (Aug. 11, 2011) [hereinafter McCluney Declaration]. The only other proceeding in which Dr. McCluney's declaration was supplied in support of the common contention was William States Lee. William States Lee Contention, Att., 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 (Aug. 11, 2011).

³⁶ Blue Ridge Vogtle Motion at 6.

³⁷ Blue Ridge Vogtle Contention at 14 (citing McCluney Declaration).

BREDL states that Dr. McCluney's declaration "confirms the need for a hard look at the impact of seismic seiches" on the plant and "that structures, systems and components be designed to withstand the effects of such natural phenomena."³⁸

BREDL also supplies the declaration of Rev. Charles N. Utley³⁹ as "a highly qualified expert in environmental justice."⁴⁰ BREDL would have it that Rev. Utley's declaration "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."⁴¹ BREDL maintains that "[s]ubsequent to the Vogtle COLA and ESP-FEIS, a nuclear power siting study was published which suggests that there is 'reactor-related environmental injustice' at Plant Vogtle."⁴²

III. ANALYSIS

As seen from the foregoing, the generic contention put forth by BREDL et al. is not founded on the March 11, 2011 Fukushima event per se. (Indeed, had it been, there might well be a serious question regarding the timeliness of the August 11 filing of the motion to reopen.) Instead, in terms, the bedrock of the motion is the July 12 Task Force report on the event which was released precisely 30 days before BREDL's submission to us.

Specifically, we are asked to reopen the proceeding for the purpose of admitting a contention that would have it that the findings and recommendations contained in the Task

³⁸ Id. at 20.

³⁹ Id., Att., Declaration of Rev. Charles N. Utley Regarding Environmental Justice and Emergency Response Issues at Plant Vogtle Electric Generating Plant [sic] Based on Events at Fukushima and the Findings of the NRC Interim Task Force (Aug. 11, 2011) [hereinafter Utley Declaration]. Rev. Utley's declaration was not filed in connection with any other motion to reopen or with the petition to intervene.

⁴⁰ Blue Ridge Vogtle Motion at 6.

⁴¹ Blue Ridge Vogtle Contention at 20.

⁴² Id. at 15 (citing Utley Declaration).

Force report have “new and significant environmental implications” that must be addressed in a supplemental draft environmental impact statement. On first examination of that assertion, we found ourselves in considerable doubt as to how such weight and effect could attach to a mere report that had neither received the endorsement of the Commission nor, more importantly, led to some concrete affirmative action being taken in light of its content. On September 9, however, that doubt received dispositive reinforcement in CLI-11-05, supra.⁴³

CLI-11-05 was issued in response to a series of petitions seeking, with regard to a large number of nuclear power facilities including the five now before us, the suspension of adjudicatory, licensing, and rulemaking activities and other relief in light of the Fukushima event.⁴⁴ Included among the requested other relief was the agency’s conduct of “a separate generic NEPA analysis regarding whether the Fukushima events constitute ‘new and sufficient information’ under NEPA that must be analyzed as part of the environmental review for new reactor and license renewal decisions.”⁴⁵

In addressing the various requests for relief, and ultimately denying all of possible relevance to the consideration of the matter now at hand, the Commission referred extensively to actions that it had taken upon the July 19 formal presentation of the Task Force report. Among other things, the Commission had directed the

review and assessment, with stakeholder input, of the Task Force recommendations; provision of a draft charter for assessing the Task Force recommendations and conducting the agency’s longer-term review; preparation of a notation vote paper that identifies recommended short-term actions; preparation of a notation vote paper that sets recommended priorities for the Task Force recommendations; and formal review of the Task Force recommendations by the Advisory Committee on Reactor Safeguards.⁴⁶

⁴³ Callaway, CLI-11-05, 74 NRC ____.

⁴⁴ Id. at ____ (slip op. at 1-3).

⁴⁵ Id. at ____ (slip op. at 30).

⁴⁶ Id. at ____ (slip op. at 6).

At a later point in its decision, once again alluding to the Task Force recommendations “for short-term and long-term agency action,” the Commission stressed that its consideration of those recommendations and the “efforts [the Commission] directed the Staff to undertake based on [them] may result in actions including the issuance of regulatory and policy direction.”⁴⁷ In this connection, the Commission observed that, as the Task Force report reflected, “the mechanisms and consequences of the events at Fukushima are not yet fully understood.”⁴⁸

It was against this background that the Commission reached the petitioners’ request that a generic NEPA analysis be performed. Its answer was both brief and emphatic:

This request is premature. Although the Task Force completed its review and provided its recommendations to us, the agency continues to evaluate the accident and its implications for U.S. facilities and the full picture of what happened at Fukushima is still far from clear. In short, we do not know today the full implications of the Japan events for U.S. facilities. Therefore, any generic NEPA duty – if one were appropriate at all – does not accrue now.⁴⁹

Significantly, the Commission went on to acknowledge that “new and significant information” might come to light that “requires consideration as part of the ongoing preparation of application-specific NEPA documents.”⁵⁰ Should that occur, “the agency will assess the significance of that information, as appropriate.”⁵¹ Pointing, however, to the regulation setting forth the circumstances in which the Staff must prepare supplemental review documents, the Commission cited its holding to the effect that “[t]he new information must present a seriously different picture of the environmental impact of the proposed project from what was previously

⁴⁷ Id. at ___ (slip op. at 28-29) (citing Staff Requirements Memorandum SECY-11-0093, Near-Term Report and Recommendations for Agency Actions Following the Events in Japan (Aug. 19, 2011) (ADAMS Accession No. ML112310021)).

⁴⁸ Id. at ___ (slip op. at 29).

⁴⁹ Id. at ___ (slip op. at 30).

⁵⁰ Id.

⁵¹ Id. at ___ (slip op. at 30-31).

envisioned.”⁵² In the Commission’s view, “[t]hat is not the case here, given the current state of information available to us.”⁵³

It is difficult to fathom how the Commission could have stated more precisely and definitively that it remains much too early in the process of assessing the Fukushima event in the context of the operation of reactors in the United States to allow any informed conclusion regarding the possible safety or environmental implications of that event regarding such operation. Of still greater importance given BREDL’s entire reliance on the findings and recommendations of the Task Force, the Commission stressed with equal force and clarity that, while under active study, none of those findings and recommendations has been accepted. Thus, they scarcely have been given the effect that, according to BREDL et al., gives rise to the environmental implications that undergird the contention that is sought to be admitted.

Turning to the matter before us, we think the Commission’s disposition of the NEPA review issue presented to it, and the rationale assigned for that disposition, is plainly controlling here. We can perceive no possible basis upon which, in opposition to the conclusion of prematurity reached by the Commission, we might conclude that the contention presented to us is ripe for adjudication. Once again, that contention necessarily assumes the Commission’s acceptance and implementation of Task Force findings and recommendations that might or might not be adopted in whole or part after the NRC Staff has completed the actions directed by the Commission upon receipt of that report.

It is worthy of note that neither BREDL nor any of the other sponsors of the contention have pointed to any unique characteristics of the site of the particular reactor that might make the content of the Task Force report of greater environmental significance to that reactor than to

⁵² Id. at ___ (slip op. at 31) (quoting Hydro Resources, Inc. (2929 Coors Road, Suite 101, Albuquerque, NM 87120), CLI-99-22, 50 NRC 3, 14 (1999)).

⁵³ Id.

United States reactors in general.⁵⁴ That consideration provides still further foundation for our reliance on the Commission's determination that a call for a generic NEPA review was premature.

Our conclusion that the contention is premature in the Vogtle proceeding, and thus as well in the four other proceedings in which it is presented, leaves open the question as to what might be an event that would trigger an assertion of the need for further NEPA review. Manifestly, the sponsors of the contention now held premature have a decided interest in the answer to that question. Indeed, it might well be that the motions to reopen and petition for intervention before us were filed simply out of an understandable abundance of caution in recognition of the fact that endeavors to reopen closed records or to open new proceedings at a late date are often greeted, as was the case here, with the claim that the endeavor comes too late.

Unfortunately, we are unable to provide guidance on that score. It is simply not possible to forecast at this writing when there might be some development associated with the Fukushima event that might give rise to a supportable contention respecting a need for further NEPA review either on a generic basis or in the context of one or more individual reactors. Nor is there room for speculation today regarding what that development might be.

In short, while perhaps of cold comfort to the sponsors of the contention now held to be premature, we can do no more than did the Commission itself in CLI-11-05 in its

⁵⁴ The only possible exception in this regard is BREDL's environmental justice claims. E.g., Blue Ridge Vogtle Contention at 4. Although BREDL seeks to tie those claims to the Task Force report, see, e.g., Blue Ridge Vogtle Motion at 7-8, it seems apparent from the supporting declaration of Rev. Utley that those claims are footed in (1) longstanding generic concerns about the agency's implementation of environmental justice and its policy on potassium iodide distribution, Utley Declaration at 2-6; and (2) a 2009 siting study, id. at 4; see also Blue Ridge Vogtle Contention at 15-16, concerns about which could have been raised at a much earlier junction in the proceeding, e.g., relative to the staff's September 2010 draft supplemental environmental impact statement for the Vogtle COL. Office of New Reactors, Draft Supplemental Environmental Impact Statement for Combined Licenses (COLs) for Vogtle Electric Generating Plant Units 3 and 4, NUREG-1947 (Sept. 2010) (ADAMS Accession No. ML102370278).

acknowledgment that, with the passage of time, “new and significant information [might come] to light that requires consideration as part of the ongoing preparation of application-specific NEPA documents.”⁵⁵ At this juncture, as the Commission emphasized, “the full picture of what happened at Fukushima is still far from clear” with the consequence that “we do not know today the full implications of the Japan events for U.S. facilities.”⁵⁶

IV. CONCLUSION

For the reasons stated above, the motions to reopen the now-closed COL proceedings for the following nuclear power facilities:

Bell Bend Nuclear Power Plant;

Comanche Peak Nuclear Power Plant, Units 2 and 3;

Vogtle Electric Generating Plants, Units 3 and 4; and

William States Lee III Nuclear Station, Units 1 and 2

⁵⁵ Id. at ___ (slip op. at 30).

⁵⁶ Id.

together with the intervention petition with regard to the application for a renewal of the operating license of

Columbia Generating Station

are hereby denied as premature.

It is so ORDERED.

THE ATOMIC SAFETY
AND LICENSING BOARD⁵⁷

/RA/

Alan S. Rosenthal, Chairman
ADMINISTRATIVE JUDGE

/RA/

Dr. Gary S. Arnold
ADMINISTRATIVE JUDGE

/RA/

Dr. William H. Reed
ADMINISTRATIVE JUDGE

Rockville, Maryland
October 18, 2011

⁵⁷ Copies of this order were sent this date by the agency's E-Filing system to counsel and representatives for PPL Bell Bend, L.L.C.; Gene Stilp; Energy Northwest; Northwest Environmental Advocates; Luminant Generation Company, LLC; Lon Burman, Sustainable Energy and Economic Development (SEED) Coalition, Public Citizen, and True Cost of Nukes; Southern Nuclear Operating Co.; Blue Ridge Environmental Defense League; Center for a Sustainable Coast, Georgia Women's Action for New Directions f/k/a Atlanta Women's Action for New Directions, and Southern Alliance for Clean Energy; Duke Energy Carolinas, LLC; and the NRC Staff.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of	)	ASLBP No. 11-914-02-COL-BD01
)	
SOUTHERN NUCLEAR OPERATING COMPANY	)	Docket Nos. 52-025 and 52-026-COL
(Vogtle))	
)	
PPL BELL BEND, L.L.C	)	Docket No. 52-039-COL
(Bell Bend Nuclear Power Plant))	
)	
LUMINANT GENERATION COMPANY	)	Docket Nos. 52-034-COL and 52-035-COL
(Comanche Peak Nuclear Power Plan, Units 3 and 4))	

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing **MEMORANDUM AND ORDER (Denying Motions to Reopen Closed Proceedings and Intervention Petition/Hearing Request as Premature) (LPB-11-27)** have been served upon the following persons by Electronic Information Exchange.

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**MEMORANDUM AND ORDER (Denying Motions to Reopen Closed Proceedings
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**MEMORANDUM AND ORDER (Denying Motions to Reopen Closed Proceedings
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Docket Nos. 52-025 and 52-026-COL, 52-039-COL, 52-034-COL and 52-035-COL

**MEMORANDUM AND ORDER (Denying Motions to Reopen Closed Proceedings
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Docket Nos. 52-025 and 52-026-COL, 52-039-COL, 52-034-COL and 52-035-COL

**MEMORANDUM AND ORDER (Denying Motions to Reopen Closed Proceedings
and Intervention Petition/Hearing Request as Premature) (LPB-11-27)**

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[Original signed by Nancy Greathead]
Office of the Secretary of the Commission

Dated at Rockville, Maryland
this 18th day of October 2011

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

AFFIRMATION SESSION

PUBLIC MEETING

Nuclear Regulatory Commission
Commission Hearing Room
11555 Rockville Pike
Rockville, Maryland
February 9, 2012

The Commission met in open session, pursuant to notice, at 12:00 p.m.,
Gregory B. Jaczko, Chairman, presiding.

COMMISSIONERS PRESENT:

GREGORY B. JACZKO, Chairman of the Commission

KRISTINE L. SVINICKI, Member of the Commission

GEORGE APOSTOLAKIS, Member of the Commission

WILLIAM D. MAGWOOD, IV, Member of the Commission

WILLIAM C. OSTENDORFF, Member of the Commission

STAFF AND PRESENTERS SEATED AT THE COMMISSION TABLE:

STEPHEN G. BURNS, General Counsel

ANNETTE L. VIETTI-COOK, Secretary of the Commission

DISCLAIMER

This is an unofficial transcript of a meeting of the United States Nuclear Regulatory Commission on February 9, 2012 in the Commission's office at One White Flint North, Rockville, Maryland. The meeting was open to public attendance and observation. This transcript has not been reviewed, corrected or edited, and it may contain inaccuracies.

The transcript is intended solely for general information purposes. As provided by 10 CFR 9.103, it is not part of the formal or informal record of decision of the matters discussed. Expressions of opinion in this transcript do not necessarily reflect final determination or beliefs. No pleading or other paper may be filed with the Commission in any proceeding as the result of, or addressed to, any statement or argument contained herein, except as the Commission may authorize.

[12:00 p.m.]

P R O C E E D I N G S

CHAIRMAN JACZKO: We'll now begin our Affirmation Session. We have two items for affirmation. Annette, do you want to proceed?

MS. VIETTI-COOK: The first item is on Entergy Nuclear Generation Company and Entergy Nuclear Operations, Pilgrim Nuclear Power Station. The Commission is being asked to act on a Memorandum and Order responding to Pilgrim Watch's Petition for review of LBP-11-18 and several related interlocutory Board orders in the Pilgrim License Renewal proceeding. The Commission has voted to approve a Memorandum and Order, which denies Pilgrim Watch's petition. Commissioner Apostolakis did not participate in this matter. Would Chairman Jaczko, Commissioner Svinicki, Commissioner Magwood and Commissioner Ostendorff please affirm your vote?

CHAIRMAN JACZKO: Aye.

COMMISSIONER SVINICKI: Aye.

COMMISSIONER MAGWOOD: Aye.

COMMISSIONER OSTENDORFF: Aye.

MS. VIETTI-COOK: The second item is on Southern Nuclear Operating Company, Vogtle Electric Generating Plant, Units 3 and 4. The Commission is being asked to act on a Memorandum and Order concluding the uncontested portion of this proceeding conducted pursuant to § 189(a) of the Atomic Energy Act of 1954, as amended. The Commission, with Chairman Jaczko dissenting, has voted to approve a Memorandum and Order, which concludes that the staff's review has been adequate to support the findings set forth in 10 CFR §§ 52.97, 51.107(a) and (d), and 50.10. The Memorandum and Order authorizes the Director of the Office of New Reactors to issue the limited work authorizations

and appropriate licenses authorizing construction and operation of Vogtle, Units 3 and 4. Would you please affirm your votes?

CHAIRMAN JACZKO: Aye.

COMMISSIONER SVINICKI: Aye.

COMMISSIONER APOSTOLAKIS: Aye.

COMMISSIONER MAGWOOD: Aye.

COMMISSIONER OSTENDORFF: Aye.

MS. VIETTI-COOK: That's all I have.

CHAIRMAN JACZKO: Thank you. I'll just make a brief statement and then I believe each of my colleagues will make some statements as well. It was approximately four years ago that Southern submitted their COL application for two combined licenses at the Vogtle site in Georgia. Since that time the NRC staff, the Advisory Committee on Reactor Safeguards, the Commission and many other people have spent hundreds of hours reviewing the safety, security, and environmental information in that application. The Vogtle COL is a significant action for this Agency and the staff has done a tremendous job in reviewing the license application and ensuring it meets our existing requirements, and I especially want to thank my colleagues on the Commission for their efforts to hold and complete the first mandatory hearing on a Part 52 license and we did that generally in the time that we intended to do it and with a large number of other activities ongoing at the same time, namely, reviews of the Fukushima accident and other very important initiatives. Personally, I'm not supportive of issuing this license. I believe it requires some type of binding commitment that the Fukushima enhancements that are currently projected and currently planned to be made would be made before the operation of the facility. There are significant safety enhancements that already been recommended as a result of learning the lessons from Fukushima, and there's still more work ahead of us. Knowing this I cannot support issuing this license as if Fukushima had never

happened. But without this license condition, in my view, that is what we are doing. So therefore I've respectfully dissented from this decision. Thank you. Commissioner Svinicki?

COMMISSIONER SVINICKI: Thank you, Chairman Jaczko. I would as a member of the Commission like to thank you for the orderly manner in which you have conducted the Commission through the mandatory hearing process and I want to thank you for scheduling this affirmation today. I'm part of the Commission majority supporting issuance of this decision, making the necessary regulatory findings and authorizing the issuance of this license. There is no amnesia, individually or collectively, regarding the events of March 11 and the ensuing nuclear accident at Fukushima. The NRC's consideration of and response to these events is established and well underway. The NRC staff did not recommend, and the Commission majority did not support, the Chairman's proposed license condition because we found that it would not improve our systematic regulatory approach to these events at Fukushima, nor would it make, in our view, any difference in the operational safety of new reactors. We have further elaborated on our view and conclusion in pages 81-84 of the decision that the majority will issue today. I am confident in my support as part of the majority for the issuance of this decision today. I believe the staff's review is complete. The record we have built in this proceeding is thorough and complete and my support for the regulatory findings we make today is rooted in that record. I thank all of my colleagues for the collegial process that we have pursued in reaching this point. Thank you.

CHAIRMAN JACZKO: Commissioner Apostolakis?

COMMISSIONER APOSTOLAKIS: Thank you, Mr. Chairman. I am pleased that the Commission itself conducted the mandatory hearing for the Vogtle application and is able to issue today its decision on this uncontested portion of the proceeding. Achieving this major milestone is a credit to many people and organizations. I was impressed by the breadth and depth of the staff's review as I said at the conclusion of the two hearings in late September. I

respectfully disagree with the Chairman's dissenting view. This Commission is not ignoring Fukushima. This is quite evident by the multiple Commission meetings and decisions and huge Agency effort to assess and implement lessons learned. For those who wish to explore the Commission's reasoning in this regard, the Commission's decision includes a distinct section entitled "Fukushima Dai-ichi" that directly precedes the conclusion of the order. Thank you, Mr. Chairman.

CHAIRMAN JACZKO: Commissioner Magwood?

COMMISSIONER MAGWOOD: Thank you. Well first let me congratulate the staff. I think the staff has done a fantastic job of preparing and analyzing this application. I understand they spent 7,000 hours simply preparing for participating in the mandatory hearing we held last year. It's a great accomplishment and a great tribute to them that this work was done in such a professional manner. The Chairman and I actually discussed the issues he raised in his statement before final action was taken on the order we affirmed. I found that we shared a strong commitment to assuring that the lessons of Fukushima are captured and our regulatory processes have been implemented by all U.S. plants on a timely basis. However, it is my view and the view of the majority, that the processes we have in place already allow this work to occur on a systematic and well-defined basis. Further, the more the staff's work advances towards implementing the Commission direction with regard to the Fukushima response, the more confident I am that the Agency's already on course to assure that all plants, both those currently operating and those that will operate in the future, will implement the required regulatory enhancements. As the Commission unanimously agreed just a few months ago, there's nothing gained by stopping any of our regulatory work as we proceed to enhance nuclear safety in a post-Fukushima era. If they are built, as proposed, in accordance with NRC requirements, Vogtle's Units 3 and 4 will represent a new era of enhanced nuclear safety. I

believe the advanced technologies applied in these designs for these reactors dramatically increase the safety of any nuclear plant built today or tomorrow. Thank you.

CHAIRMAN JACZKO: Commissioner Ostendorff?

COMMISSIONER OSTENDORFF: I do want to thank the Chairman and all my colleagues for what I think has been a very collegial process for many months to go through from the time period to the mandatory hearing back in September, reviewing questions for the record and getting to this date so I think this process has worked very well and I think our discussions and communications have been fulsome, complete, and very helpful and informative. So I thank all of you for that. This is a historic decision. As the Chairman mentioned, it's been almost four years since the staff started to review this license application submitted by Southern. I join every one of my colleagues in thanking the NRC staff for their diligent, hard work in pursuing this very tough project and I'll tell you the results of their hard work have given me great confidence that their review has been sufficient and has allowed me to support the findings and therefore I have approved issuance of the Vogtle license. I also must add that I have complete confidence that our well-established processes here at the NRC will result in us adding to not only our operating reactors but to new reactors any additional requirements as a result of the Fukushima review. Thank you.

CHAIRMAN JACZKO: Well with that, we are adjourned. Thank you.

CERTIFICATE

This is to certify that the attached description of a meeting of the U.S. Nuclear Regulatory Commission entitled:

TITLE OF MEETING: Affirmation Session
(PUBLIC MEETING)

PLACE OF MEETING: Rockville, Maryland

DATE OF MEETING: February 9, 2012

was held as herein appears, is a true and accurate record of the meeting, and that this is the original transcript thereof taken stenographically by me, thereafter reduced to typewriting by me or under the direction of the court reporting company.

Transcriber: Darlene K. Wright

Reporter: (TAPE RECORDING)

December 15, 2011

MEMORANDUM TO: R. W. Borchardt
Executive Director for Operations

J. E. Dyer
Chief Financial Officer

FROM: Annette L. Vietti-Cook, Secretary /RA/

SUBJECT: STAFF REQUIREMENTS – SECY-11-0137 – PRIORITIZATION
OF RECOMMENDED ACTIONS TO BE TAKEN IN RESPONSE
TO FUKUSHIMA LESSONS LEARNED

The Commission has approved the staff's proposed prioritization of the Near-Term Task Force (NTTF) recommendations and supports action on the Tier 1 and Tier 2 recommendations, subject to the direction contained in the Staff Requirements Memorandum on SECY-11-0124, and the following additional comments.

In the absence of a fully developed justification for a proposed new requirement, the Commission finds it premature to initiate actions on the Near Term Task Force recommendations under the premise of assuring or redefining the level of protection of public health and safety that should be required as adequate in accordance with the backfit rule. The Commission will evaluate the staff's basis for imposing new requirements when documented in notation vote papers for any new requirements promulgated by orders or rulemaking.

The Commission looks forward to receiving, within nine months, the staff's evaluation of the schedule and milestones, resources and critical skill sets, and implementation challenges related to addressing the Tier 3 recommendations.

The staff should use INPO-11-005, "Special Report on the Nuclear Accident at the Fukushima Dai-ichi Nuclear Power Station," informed by country-specific considerations, as an input to its development of technical bases for any proposed regulatory changes.

As part of the FY 2014 budget formulation process, the staff should provide updated resource estimates for FY 2013 and FY 2014 to accommodate Fukushima lessons-learned activities. The FY 2014 Performance Budget proposal should include, as part of the FY 2013 Current Estimate, a detailed and scrutable discussion of proposed cancellations or deferrals of previously budgeted/planned activities that would be necessary to fund the plan of work associated with post-Fukushima regulatory actions.

The staff should, as part of the FY 2012 Current Estimate and Shortfall List proposal for Commission review and approval, integrate the Tier 1 activities among the planned program of work and give the highest priority to those activities or actions that achieve the greatest safety benefit and/or have the broadest applicability regardless of the initiating event. The paper should also discuss the budgetary add/shed process and decisions for the Fukushima-related

activities and identify significant deferrals and cancellations of planned work. Where the demand for critical skills sets, such as risk expertise, is driving delays or deferrals of significant agency work activities, such as license renewal and power uprates, the staff should propose strategies for optimizing FTE and contract resources to mitigate programmatic impacts.

The staff should initiate a PRA methodology to evaluate potential enhancements to the capability to prevent or mitigate seismically induced fires and floods as part of Tier 1 activities. The implementation of NTTF Recommendation 3 would still remain in Tier 3. This methodology is a necessary prerequisite for the implementation of this recommendation. In addition, insights gained from the development of this methodology will be useful to implementation of other NTTF recommendations. The next 6 month status update to the Commission, as required by the staff requirements memorandum on SECY-11-0117, should include a discussion of the resource estimate and schedule to develop the PRA methodology.

The Staff should consult with the Commission via notation vote papers before issuing any orders that would lead to a change in the design basis of licensed plants. The staff should inform the Commission 5 business days before issuing letters under 10 CFR 50.54(f) associated with the regulatory activities outlined in SECY-11-0137.

With respect to the six additional issues that the staff describes as having a clear nexus to the Fukushima Dai-ichi event and that the staff's indicates may warrant regulatory action but that were not included with the NTTF recommendations, the staff should provide the results of its determination of whether any regulatory action is recommended or necessary in the form of a SECY paper (information or notation vote, as appropriate). As with all other aspects of our Fukushima response, the Advisory Committee on Reactor Safeguards should provide its views of the staff's approach. The paper should also address the November 8, 2011 ACRS Review of the Staff's Prioritization, as appropriate.

The staff should quickly shift the issue of "Filtration of Containment Vents" from the "additional issues" category and merge it with the Tier 1 issue of hardened vents for Mark I and Mark II containments such that the analysis and interaction with stakeholders needed to inform a decision on whether filtered vents should be required can be performed concurrently with the development of the technical bases, acceptance criteria, and design expectations for reliable hardened vents.

The staff should inform the Commissioner's Assistants of plans for closing out GI-199 and the interdependency between the close out of GI-199 and NTTF recommendations 2.1, 2.2, and 2.3, including a discussion of any other generic issues related to external events that may have a relationship to the implementation of NTTF recommendations.

cc: Chairman Jaczko
Commissioner Svinicki
Commissioner Apostolakis
Commissioner Magwood
Commissioner Ostendorff
OGC
CFO
OCA
OPA
Office Directors, Regions, ACRS, ASLBP (via E-Mail)
PDR

NRC Responses to Public Comments

Final Rule:

Amendment to AP1000 Design Certification Rule, 10 CFR Part 52, Appendix D (RIN 3150-AI81)

ADAMS Accession No. ML113480018
December 2011

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The discussion below describes each type of comment *submission* in greater detail, provides additional information on electronic availability of the comment submissions, and explains how the comments from each type of comment submission are identified.

Treatment of Late-Filed Comments

The NRC determined that it was practical to consider comment submissions received on or before June 30, 2011. The NRC received five comment submissions after the May 10, 2011 end of the public comment period, but before June 30, 2011. This comment summary document provides the NRC's responses to these late-filed comment submissions. The NRC also received several comment submissions after June 30, 2011, but this CRD does not provide responses to those comments. However, the NRC has briefly reviewed them to ensure that there are no radiological health and safety matters within the regulatory purview of the NRC.

Unique Comment Submissions

The NRC received 66 *unique comment submissions*². The NRC-designated identifier for each unique comment submission, the name of the submitter, the submitter's affiliation (if any), and the ADAMS accession number for each unique comment submission, are provided in Appendix 1 of this document.

One of the unique comment submissions deserves some additional explanation. Comment Submission S62 was originally submitted to the NRC as an allegation. The communication was submitted via e-mail to the NRC's allegation e-mail mailbox. The communication focused on the physical location of the safety-related battery bank for the AP1000 design, and the ability of the design to withstand a beyond-design-basis earthquake and flood such as that experienced at Fukushima Daiichi. The NRC's allegation review board (ARB) reviewed the communication and determined that it should not be characterized as an allegation, but rather as a public comment against the proposed rule. The concerned individual did not timely respond to the NRC's question as to whether the NRC should docket it anonymously or under the individual's name. Hence, Comment Submission S62 was docketed as an anonymous submission. The NRC staff then contacted the individual, informing the individual of the ARB's determination, and indicated that the NRC would treat the communication as an anonymous public comment submission.

Representative Markey Letter

On March 7, 2011, Representative Edward J. Markey sent a letter to Chairman Jaczko (ADAMS Accession No. ML110680273), which raised issues about the design of the AP1000, and requested answers to eight questions. The majority of the questions concerned the adequacy AP1000 shield building design. In an August 15, 2011, letter response from Chairman Jaczko (ADAMS Accession Nos. ML11080A015 and ML11083A077), the NRC provided answers to the questions, and indicated that the issues on the AP1000 raised in Representative Markey's letter

² NOTE: The letter from Representative Markey to the NRC, and an allegation re-characterized as a public comment submission, are included in the tally of 66 unique comment submissions. However, Representative Markey's letter is described separately in this section.

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For form letter comments use the character "L."

For additional form letter comments use the comment submission ID in Appendix 2 in this document.

For petitions use the petition numbers in Appendix 3.

[Y] represents the comment number, which the NRC assigned to the comment. In some instances, lower-case alphabetic characters [Ya, Yb, Yc * * *] were added to a comment number after the initial designation of comments.

The comment numbers for each comment submission are provided in the following documents:

Unique comment submittals 1 through 57 (partial): ADAMS Accession No. ML11265A035

Unique comment submittals 57 (continued) through 66: ADAMS Accession No. ML11265A034

Form letter and additional form letter submittals: ADAMS Accession No. ML11265A050

Petitions: ADAMS Accession No. ML11265A051

Unique Comments and NRC Responses

Fukushima-related

This subject area includes comments requesting specific action (hold, suspend, terminate, or extend comment period) based upon the Fukushima Daiichi NPP accident. This subject area includes AP1000-specific comments, as well as more general comments (e.g., close all plants), as a result of Fukushima. Other Fukushima-related topics covered under this subject area include tsunami/earthquake, core cooling, station blackout (SBO), and the need for a second control room. This subject area excludes comments relating to another AP1000-specific subject area (e.g., shield building).

Before responding to specific comments based upon the Fukushima Daiichi Nuclear Power Plant Event, the NRC is providing this discussion about its ongoing actions underway in response to this event. The Commission created a Near-Term Task Force (NTTF) to conduct an analysis of the lessons that can be learned from the event. The task force was established to conduct a systematic and methodical review of NRC processes and regulations to determine whether the NRC should make additional improvements to its regulatory system. The NTTF issued a report (ADAMS Accession No. ML111861807) evaluating currently available technical and operational information from the events, and presented a set of recommendations to the Commission. The NTTF concluded that continued operation and continued licensing activities do not pose an imminent risk to public health and safety. Among other recommendations, the NTTF supports completing the AP1000 design certification rulemaking activity without delay (see NTTF Report pages 71-72).

In an August 19, 2011, Staff Requirements Memoranda (SRM) (ADAMS Accession No. ML112310021), the Commission set forth actions related to the NTTF report together with a schedule for the conduct of those actions. Two of those actions have been completed and are documented in the following reports: "Recommended Actions to Be Taken Without Delay from the Near-Term Task Force Report," September 9, 2011 (SECY-11-0124) (ADAMS Accession No. ML11245A127) and "Prioritization of Recommended Actions to be Taken In Response to Fukushima Lessons Learned," October 3, 2011 (SECY-11-0137) (ADAMS Accession No. ML11269A204).

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Inasmuch as the NTTF recommendations relevant to the AP1000 design certification are limited to: seismic and flooding protection (Recommendation 2); mitigation of prolonged SBO (Recommendation 4); and enhanced instrumentation and makeup capability for spent fuel pools (SFPs) (Recommendation 7) and the task force concluded that the AP1000 design by the nature of its passive design and inherent 72-hour coping capability, has many of the design features and attributes necessary to address the Task Force recommendations, the NRC concludes that no changes to the AP1000 DCR are required at this time. Moreover, even if the Commission concludes at a later time that some additional action is needed for the AP1000, the NRC has ample opportunity and legal authority to modify the AP1000 DCR to implement NRC-required design changes, as well as to take any necessary action to ensure that COLs, which reference the AP1000, also make the necessary design changes.

Fukushima – Do not Build any More Reactors

Comment: Because of the recent events at the Fukushima NPP in Japan, and other historical nuclear events such as Chernobyl and Three Mile Island (TMI), nuclear reactors should no longer be built. (S4-1, S7-1, S17-1, S21-1, S28-1, S38-1)

NRC Response: Several comments expressed concern about the use of nuclear power in light of the events at the Fukushima facility in Japan, as well as other historical events, such as Chernobyl (Russia) and TMI (U.S.). These comments are out of the scope for this rulemaking process, which concerns an amendment to the rule certifying the AP1000 design in 10 CFR Part 52, Appendix D, not a licensing decision on whether to build new reactors. The NRC regulates the safe and secure use of nuclear materials, including NPPs. The NRC does not determine whether reactors are to be built in the U.S.; rather, its mission is to ensure that if reactors are to be built in the U.S. that they comply with NRC requirements and guidelines. No change was made to the rule, the design control document (DCD), or the environmental assessment (EA) as a result of this comment.

Fukushima – Nuclear Power is Dangerous, Unsafe, and Unclean

Comment: The recent events at the Fukushima NPP in Japan have shown that nuclear power is dangerous, unsafe, and unclean. (S12-1, S13-1, S21-6, S21-7, S29-1, S36-2)

NRC Response: Several comments expressed general concern about the safety of nuclear power in light of the events at the Fukushima facility in Japan. These comments are out of the scope for this rulemaking process, which concerns an amendment to the rule certifying the AP1000 design in 10 CFR Part 52, Appendix D. The NRC's regulations provide reasonable assurance of adequate protection of public health and safety. The NRC reviewed the AP1000 design, as amended, and determined in its final safety evaluation report (FSER) that the design complies with all of the applicable regulations. Further, all U.S. NPPs are designed with multiple layers of protection, or "defense-in-depth," with structure, systems, and components (SSCs) that are designed to prevent an accident or, should an accident occur, minimize the consequences of an accident. The NRC continues to believe that the current regulations that apply to the AP1000 design, as amended, are adequate and that the AP1000 design is acceptable as described in the FSER.

The NRC interprets the comments regarding nuclear power being unclean to mean there are concerns with the long-term impact of spent fuel on the environment. The AP1000 design

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includes an SFP where spent fuel rods will be stored. In the Commission's Waste Confidence Decision and Rule (10 CFR 51.23(a)) (75 FR 81032), the Commission has made the generic determination that "if necessary, spent fuel generated in any reactor can be stored safely and without significant environmental impacts for at least 60 years beyond the licensed life for operation (which may include the term of a revised or renewed license) of that reactor in a combination of storage in its spent fuel storage basin and at either onsite or offsite independent spent fuel storage installations."

The transfer of spent fuel to a permanent repository or other facility is out of the scope for this rulemaking process, which concerns an amendment to the rule certifying the AP1000 design in 10 CFR Part 52, Appendix D. However, current national policy, as found in the Nuclear Waste Policy Act (42 U.S.C. 10101, et seq.) mandates that high-level wastes (such as spent fuel) are to be buried at a deep geologic repository.

No change was made to the rule, the DCD, or the EA as a result of this comment.

Fukushima – Put Application on Hold to Consider Fukushima Lessons Learned

Comment: The approval of the AP1000 DCA should be put on hold until the lessons learned from the Fukushima event in Japan have been taken into consideration. (S6-1, S6-2, S8-2, S18-1, S20-1, S20-2, S29-10, S29-12, S33-2, S40-5, S48-1, S49-7, S51-1, S52-2, S57-2, S65-1)

NRC Response: The Commission declines to suspend or postpone the AP1000 rulemaking. See *Memorandum and Order*, CLI-11-05 (September 9, 2011, ADAMS Accession No. ML112521039). The reasons for the Commission action are set forth in CLI-11-05.

The Commission has taken and is continuing to take a series of actions to evaluate the Fukushima Daiichi Plant accident, identify possible regulatory actions, obtain stakeholder input, determine what actions should be adopted, and implement the Commission's determinations. In brief, the Commission established an NTTF to review relevant NRC regulatory requirements, programs, and processes, and their implementation, and to recommend whether the agency should make near-term improvements to its regulatory system. The NTTF issued its report (ADAMS Accession No. ML111861807) on July 12, 2011. The Commission held a public meeting on July 28, 2011, to discuss the results of the NTTF Report with members of the public and other interested stakeholders. Thereafter, the Commission issued two SRMs on the NTTF recommendations (reference SRM-SECY-11-0093, dated August 19, 2011, and SRM-COMWDM-11-0001/ COMWCO-11-0001, dated August 22, 2011). These SRMs directed the NRC staff to take several actions, notably to engage with stakeholders to review and assess the NTTF recommendations, provide the Commission with a draft charter for the NRC's longer term review of the NTTF recommendations, and to provide the Commission with papers recommending prioritization of the recommendations and which recommendations should be implemented, in part or in whole, without unnecessary delay.

The pendency of these NRC actions; however, does not support any delay in the AP1000 rulemaking. The NRC noted that the NTTF did not recommend any changes to the AP1000 design certification (see NTTF Report, pages 71-72). Therefore, delay in the AP1000 rulemaking process is not needed to ensure that the AP1000 reflects the recommendations of the Fukushima NTTF. Moreover, even if the Commission concludes that some additional action

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is needed for the AP1000, the NRC has ample opportunity and legal authority to modify the AP1000 DCR to implement NRC-required design changes, as well as to take any necessary action to ensure that COLs, which reference the AP1000 also make the necessary design changes. Such actions would follow rulemaking processes allowing for public comment. For these reasons, a delay in the AP1000 rulemaking is not necessary.

No change was made to the rule, the DCD, or the EA as a result of this comment.

Fukushima – AP1000 Design Features and Design-Basis Accidents Should be Re-evaluated

Comment: In light of the Fukushima accident in Japan, the maximum credible design-basis accident (DBA) and design features for the AP1000 design must be re-evaluated. (S55-24, S55-26)

NRC Response: General concern was expressed about the validity of the maximum credible DBA and the AP1000 design features in light of the events at the Fukushima facility in Japan. These comments are out of the scope for this rulemaking process, which concerns an amendment to the rule certifying the AP1000 design in 10 CFR Part 52, Appendix D. However, as noted above, NRC requirements for all NPPs are being re-evaluated in light of the Fukushima accident. Further, all U.S. NPPs, including the AP1000, are designed with multiple layers of protection, or “defense-in-depth,” with SSCs that are designed to prevent an accident or, should an accident occur, minimize the consequences of an accident. Maximum credible DBAs are analyzed in accordance with Appendix A to 10 CFR Part 50, “General Design Criteria for Nuclear Power Plants,” General Design Criterion (GDC) 2, which requires the design bases for SSCs that are important to safety, including the safety-related batteries, to reflect the most severe natural phenomena (including earthquakes, tornadoes, floods, hurricanes, and tsunamis) that have historically been reported for the site and surrounding area, with margin to account for uncertainty in the historical data, such that these SSCs will withstand the effects of natural phenomena without the loss of the capability to perform their safety functions. The AP1000 safety-related SSCs (including the Auxiliary Building, which houses the safety-related batteries) are designed to withstand the effects of seismic events and external floods. The AP1000 design, as described in the DCD, meets the requirements of GDC 2 with respect to such seismic events and floods. Under 10 CFR Part 52.79(d), an applicant for a COL referencing the AP1000 standard design will be required to demonstrate that the site characteristics, including seismic events and floods, fall within the site parameters specified in the AP1000 DCD, which were used to establish the design bases for the standard design. No change was made to the rule, the DCD, or the EA as a result of this comment.

Fukushima – Review Safety Issues of Use of Nuclear Power and Materials

Comment: As a result of the event at Fukushima, all U.S. reactors should be re-evaluated and reviewed for safety issues and to demonstrate their ability to withstand natural disasters or DBAs. (S24-2, S48-2, S49-1, S49-6, S52-1, S55-15, S58-1)

NRC Response: Several comments expressed concern about the safety of all currently operating U.S. nuclear plants in light of the events at the Fukushima facility in Japan. These comments are out of the scope for this rulemaking process, which concerns an amendment to the rule certifying the AP1000 design in 10 CFR Part 52, Appendix D. However, as noted above, NRC requirements for all NPPs are being re-evaluated in light of the Fukushima

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accident. Further, all U.S. NPPs are designed with multiple layers of protection, or “defense-in-depth,” with SSCs that are designed to prevent an accident or, should an accident occur, minimize the consequences of an accident. The SSCs that are important to safety are designed to withstand the effects of the most severe natural phenomena (including earthquakes, tornadoes, floods, hurricanes, and tsunamis) that have historically been reported for the site and surrounding area, with margin to account for uncertainty in the historical data, such that these SSCs will be available to perform their safety functions. No change was made to the rule, the DCD, or the EA as a result of this comment.

Fukushima – Fast-Tracking Concerns

Comment: The NRC should not “fast-track” the approval of any reactors without pausing to learn from Fukushima. (S17-2)

NRC Response: The NRC agrees with the comment. Protection of public health and safety is the foremost regulatory objective of the NRC, and the review of the AP1000 design has been conducted with that in mind. The NRC also recognizes that it must perform its regulatory responsibilities in an efficient and effective manner. The NRC has not ignored any safety issues in order to speed up the regulatory review process or for any other reason. The NRC has followed all applicable procedures and processes in its safety review and has found that the AP1000 DCA meets all NRC requirements.

In addition, the Commission established an NTTF to perform a review of the Fukushima Daiichi accident. The NTTF evaluated all technical and policy issues related to the event to identify potential research, generic issues, changes to the reactor oversight process, rulemakings, and adjustments to regulatory framework that should be conducted by the NRC. The NTTF issued its report (ADAMS Accession No. ML111861807) on July 12, 2011, recommending that the AP1000 rulemaking process proceed without delay (see NTTF Report, pages 71-72). Consistent with this recommendation, the NRC believes that the AP1000 final rulemaking can and should proceed without delay because: (i) the NRC has determined that the AP1000 DCA meets current regulations; (ii) the AP1000 design features already address many of the design concerns and recommendations raised by the NTTF; (iii) the NRC will provide an opportunity for the public to provide input on NTTF recommendations, and (iv) if the NRC imposes additional requirements on the AP1000 design, existing regulations already define the process for doing so under 10 CFR 52.63.

No change was made to the rule, the DCD, or the EA as a result of this comment.

Fukushima – 75-Day Public Comment Period

Comment: Given the recent event at the Fukushima plant in Japan, the 75-day comment period is not adequate and should be extended. (S8-4, S24-3, S29-11, S49-2)

NRC Response: The NRC disagrees with this comment, and believes that the 75-day public comment period, which is consistent with most other NRC technical rulemakings, is adequate. The Commission established an NTTF to review relevant NRC regulatory requirements, programs, and processes, and their implementation, and to recommend whether the agency should make near-term improvements to its regulatory system. The public comment period for the proposed rule on the AP1000 DCA closed on May 10, 2011, and the NTTF issued its report

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(ADAMS Accession No. ML111861807) on July 12, 2011. The NTTF considered the AP1000 DCA in its report. The NTTF Report noted that the AP1000 design certification, currently in the rulemaking process, has passive safety systems. By nature of its passive design and inherent 72-hour coping capability for core, containment, and SFP cooling, the AP1000 design has many of the design features and attributes necessary to address the NTTF recommendations. Therefore, the NTTF expressed support for completing the AP1000 design certification rulemaking without delay (see NTTF Report, pages 71-72).

The Commission directed the NRC staff, via SRM, to request public input on the NTTF recommendations for the purpose of providing the Commission with fully-informed options and recommendations (SRM-SECY-11-0093, dated August 19, 2011 (ADAMS Accession No. ML112310021), and SRM-COMWDM-11-0001/COMWCO-11-0001, dated August 22, 2011).

To the extent that the Commission might approve any NRC staff recommendations to impose additional requirements on the AP1000 design, the NRC can amend the AP1000 DCR to reflect those requirements. Any Commission-imposed changes would be subject to the issue finality provisions of 10 CFR 52.63(a)(1) and would have to meet one or more of the change criteria of that paragraph.

The NRC believes that the AP1000 final rulemaking can and should proceed without extending the public comment period because: (i) the NRC has determined that the AP1000 DCA meets current regulations; (ii) the AP1000 design features already address many of the design concerns and recommendations raised by the NTTF; (iii) the NRC will provide an opportunity for the public to provide input on NTTF recommendations, and (iii) if the NRC imposes additional requirements on the AP1000 design, existing regulations already define the process for doing so under 10 CFR 52.63.

No change was made to the rule, the DCD, or the EA as a result of this comment.

Fukushima – Cooling Capabilities

Comment: Several comments raised concerns about the AP1000's capability to maintain reactor core cooling following a major natural disaster, given the recent events at the Fukushima plant in Japan. (S49-4, S53-6)

NRC Response: The NRC interprets these comments to refer to the severe external environmental conditions experienced at Fukushima and the resultant accident. The AP1000 design can withstand severe external environmental hazards such as fires, flooding, tsunamis, high winds, hurricanes, tornadoes, snow and ice impacts, and seismic events that are considered credible in the U.S. The AP1000 design was previously analyzed for these severe environmental conditions as part of the initial design certification; therefore, these comments are out of scope. Moreover, the AP1000 design, as amended, continues to meet NRC requirements. Westinghouse has shown and the NRC has concluded in its review as documented in the FSER (NUREG-1793, Supplement 2) that the AP1000 design can keep the reactor properly cooled under these severe environmental conditions, thus providing reasonable assurance that the public is protected.

The Fukushima accident occurred, in part, because of the loss of ac power (also known as SBO), which was necessary to maintain core cooling. The AP1000 design has a passive safety

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system (natural circulation) and inherent 72-hour coping capability for core, containment, and SFP cooling – even if a loss-of-coolant accident (LOCA) has occurred.

After 3 days with no alternating current (ac) power, only a small “ancillary” generator is needed. This generator is used to power a small pump that re-fills the tank that supplies water to the outside surface of the containment. The AP1000 design provides two such generators that are installed in a seismically qualified structure (along with their fuel and supporting equipment). The AP1000 design includes provisions to support emergency operating protocols such that after 1 week without ac power, the containment can be cooled indefinitely by replenishing fuel supplies for at least one ancillary generator and replenishing water in the water tank above the shield building. The NRC has reviewed these AP1000 design features and operational provisions and concluded that they meet NRC requirements. These features of the AP1000 design demonstrate that the reactor can be properly cooled during accident conditions.

No change was made to the rule, the DCD, or the EA as a result of this comment.

Fukushima – Other Comments

Comment: Given the recent events in Japan, is it possible to have a SBO during full power operation lead to the containment being filled with steam by the activation of the automatic depressurization system (ADS). (S2-1)

NRC Response: SBO is not expected to lead to the actuation of the ADS. The passive residual heat removal heat exchanger within the in-containment refueling water storage tank (IRWST) provides the necessary core cooling. The AP1000 plant is designed to protect the core during and after disasters. The NRC evaluates all appropriate disasters for each chosen site. Adequate cooling of the reactor during and after all DBEs is provided by the safety-related cooling system of the AP1000, which does not require external power of any kind to perform its function. No change was made to the rule, the DCD, or the EA as a result of this comment.

Comment: The NRC should re-examine the entire AP1000 reactor in light of the lesson learned from the Fukushima Daiichi Plant accident concerning SFPs, backup power, containment integrity and redundant cooling systems. (S63-4)

NRC Response: The NRC disagrees with this comment. The Fukushima NTTF has completed its analysis of the Fukushima Daiichi accident. The NTTF Report indicates that no change to the AP1000 design certification rulemaking is necessary, because of, among other things, the passive design features of the AP1000. The comment did not present any independent information showing any particular safety problem with the AP1000 design, and the Markey Report attached to the comment does not mention the AP1000 design, as it is focused on currently operating reactors. For these reasons, the NRC declines to adopt the comment's suggestion. No change was made to the rule, the DCD, or the EA as a result of this comment.

Comment: After an initial look at lessons learned from Fukushima, there is a definite need for a backup offsite shielded reactor plant control center with full reactor plant status can be managed. (S52-1c, S55-16)

NRC Response: The NRC interprets this comment to mean that the habitability of the control room as proposed in the AP1000 design is not adequate in light of the Fukushima accident.

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The AP1000 control room is designed to protect reactor operators and the associated plant monitoring and control functions during normal operation, DBEs, and severe accidents. The AP1000 main control room emergency habitability system (VES) is a passive system design that consists of safety-related canisters of air that supply the control room with fresh, uncontaminated breathing air. The system does not require ac power to function and is required to function for 72 hours. The design also has a separate (nonsafety-related) ac-powered control room ventilation system. Control room instrumentation can be powered with battery-supplied direct current (dc) power. Specific details of the NRC's review of the control room design may be found in the FSER Section 6.4, "Control Room Habitability Systems" (NUREG-1793, Supplement 2).

In response to the Fukushima Daiichi accident, the Commission established an NTTF to review relevant NRC regulatory requirements, programs, and processes, and their implementation, and to recommend whether the agency should make near-term improvements to its regulatory system. The NTTF issued its report (ADAMS Accession No. ML111861807) on July 12, 2011. The NTTF's recommendations considered improving the safety of both operating reactors and new reactor designs. The Commission directed the NRC staff, via SRM, to request public input on the NTTF recommendations for the purpose of providing the Commission with fully-informed options and recommendations (SRM-SECY-11-0093, dated August 19, 2011 (ADAMS Accession No. ML112310021), and SRM-COMWDM-11-0001/COMWCO-11-0001, dated August 22, 2011). The NRC believes that current operating reactors are safe and continue to meet NRC requirements. Further, a backup, offsite, shielded reactor plant control center with full reactor plant status would constitute a new requirement. If the NRC imposes additional requirements on new or currently operating reactors, regulations already exist defining the process for doing so. No change was made to the rule, the DCD, or the EA as a result of this comment.

Comment: After an initial look at lessons learned from Fukushima, we cannot expect structural volumes and 'channels' to maintain structural integrity. We should also expect the immediate ground underneath these structures to be porous (earth). Thus, design of these volumes and channels should be such that they minimize connections to other (adjacent) volumes from which contaminated (liquid) effluents can flow. (S52-1j)

NRC Response: The NRC disagrees with this comment. Applicants for a license must demonstrate that the plant can shutdown safely after specified ground motion based upon consideration of the most severe earthquake that has been historically reported for the site and surrounding area, with margin sufficient to account for the limited period of time, quantity and accuracy of the historical data. The applicant must show that there is a large margin in the seismic capacity of all of the safety-related SSCs necessary for safe-shutdown. The applicant also performs a severe accident analysis (a "seismic margins" analysis) to show that there is still a high confidence of low probability of failure – even if an earthquake occurs that is much larger than predicted. The containment vessel of the AP1000 and the piping systems penetrating the containment are designed to isolate potentially contaminated fluids from the environment during all DBEs and severe accidents.

In addition, Appendix A to 10 CFR Part 50, "General Design Criteria for Nuclear Power Plants," Criterion 2, requires that SSCs important to safety (e.g., the liquid waste management system), be designed to withstand the effects of natural phenomena (including earthquakes, tornadoes, floods, hurricanes, and tsunamis) that have historically been reported for the site and

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surrounding area, with margin to account for uncertainty in the historical data, such that these SSCs will withstand the effects of natural phenomena without the loss of the capability to perform their safety functions. These SSCs are designed to withstand accident conditions in combination with the effects of natural phenomena. Technical Specifications include the design feature specifications for the liquid waste management system that limit the volume and type of tank contents to reduce the potential for a release. The NRC has concluded in its evaluation (NUREG-1793, Supplement 2) that the AP1000 design, as amended, meets NRC regulations.

No change was made to the rule, the DCD, or the EA as a result of this comment.

Shield Building

This subject area includes comments relating to the AP1000 shield building design.

To help readers understand the NRC's responses to public comments on the shield building, a brief description of the shield building is presented below, together with a summary of the changes to the shield building that are being approved by the amendment to the rule certifying the AP1000 design in 10 CFR Part 52, Appendix D.

The shield building performs multiple functions, e.g., to provide a biological shield to high-energy radiation, to support the primary containment cooling water storage tank on the roof, to shield the steel containment from high velocity debris that may be generated by tornadoes or other natural phenomena, and to function as a "chimney" to enhance airflow over the primary steel containment to remove heat from the containment and reduce containment pressure in the event that post accident cooling of the containment would be necessary. While other designs have included shield buildings of reinforced concrete, with the exception of the AP600 design, they did not perform cooling functions. The shield building is not intended to be a pressure retaining structure or to mitigate the effects of a containment failure. The shield building construction is primarily a steel-concrete (SC) composite module wall, with a reinforced concrete roof and reinforced concrete where the wall meets the foundation. The wall is appropriately reinforced and sized where the composite wall module joins the reinforced concrete sections and as appropriate to accommodate seismic loads and aircraft loads. This design is new to the amendment; previously the structure was all reinforced concrete.

The shield building and the containment are designed with a gap, or annulus, that ensures that both the shield building and steel containment are physically separate, excluding their foundation, and are considered to be "freestanding." In the shield building, air flows from the environment through openings in the shield building wall. The air then flows down along an interior baffle, turns toward the steel containment vessel, and then rises alongside the steel containment vessel where it absorbs heat. This heated air naturally rises and is then exhausted through the chimney located in the center of the primary containment cooling storage water tank.

Design changes to the passive containment cooling system and shield building principally involve the redesign of the shield building to a steel-composite design, with related changes to air inlet sizing, height of the building and gratings above the chimney opening. Revised safety analyses were performed to confirm adequate containment pressure control, capability of the shield building to withstand external events (tornado, seismic), as well as aircraft impact

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Appendix D (DCD, Revision 15). The current amendment to the AP1000 design does not propose any modification to these features.

No change was made to the rule, the DCD, or the EA as a result of this comment.

Comment: A few comments stated that the AP1000 containment would not be adequately cooled under conditions similar to Fukushima. (S29-9, S49-5)

NRC Response: The NRC interprets this comment to mean the ability of containment to be cooled following an earthquake, tsunami and SBO is inadequate. This comment is out of the scope for this rulemaking process, which concerns an amendment to the rule certifying the AP1000 design in 10 CFR Part 52, Appendix D. However, the PCCS is seismically qualified, and has been reviewed for survivability for the reference-level earthquake (1.67 times the SSE). In regard to SBO, only a few dc-powered (battery-powered) valves need be actuated to start the gravity flow of water from the water storage tank. The air cooling does not rely on motive power. Thus, the NRC concludes that the containment would be adequately cooled in the event of an SSE, or even some severe earthquakes, in combination with an SBO. The current amendment to the AP1000 design does not propose any modification to these features. Tsunamis would be evaluated as part of the siting review for a COL application referencing the AP1000 design. An AP1000 plant would be located with the plant grade above the design-basis flood level. No change was made to the rule, the DCD, or the EA as a result of this comment.

Containment – “Chimney Effect”

Comment: The comment states that the NRC should not use zero probability of containment failure or leakage as the basis for the SAMDA analysis for new reactors, which is in turn reflected in the analysis of severe accidents. (S39-3, S39-8, S55-1, S55-7, S55-8)

NRC Response: While these comments are primarily directed to the AP1000 SAMDA evaluation, it also appears directed to containment analysis. Neither Westinghouse nor the NRC has asserted that the containment has a zero probability of leaking. A certain amount of leakage is assumed to occur even if the containment remains intact. An applicant must show that the consequence of this leakage is acceptable for a hypothetical DBA. For beyond-DBAs, the applicant must show that larger leaks, should they occur, do not create unacceptable risk. Assumptions regarding the effectiveness of SAMDAs, including to what extent a SAMDA reduces releases from containment, are discussed below under the SAMDA heading. No change was made to the rule, the DCD, or the EA as a result of this comment.

Comment: A few comments stated that a basic problem with the AP1000 design is the ventilation system, which allows the free flow of air from inside the reactor containment building to outside air, allowing radiation to escape in the event of a reactor core breach. (S55-21, S58-8)

NRC Response: The NRC disagrees with these comments. The AP1000 design does not allow the free flow of air out of the containment. Rather, it allows the free flow of air into and out of the shield building, which protects and cools the containment. This air flows along the outside of the containment wall, removing heat. In the event of core damage, radioactivity will escape the reactor coolant system and contaminate the atmosphere inside containment. For that reason, there is no pathway allowing air from inside containment to commingle with the air in the

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Nonetheless, the NRC addresses the technical issue raised in the comment as follows: The NRC's regulations at 10 CFR 50.44, "Combustible gas control for nuclear power reactors," were revised in 2003 to reflect the importance of hydrogen generation during a severe accident resulting from a 100% fuel clad-coolant interaction. The quantity of hydrogen generated from this reaction is several orders of magnitude larger than the contribution from the corrosion of metals or from radiolysis.

For severe accident hydrogen control, the AP1000 containment has 64 hydrogen igniters. The igniters are divided into two power groups, normally provided by offsite power. However, should offsite power be unavailable, each of the power groups is powered by one of the onsite nonessential diesels. Should the diesels fail to provide power, the non-Class 1E batteries for each group will support approximately 4 hours of igniter operation. The hydrogen ignition subsystem conforms to the requirements of 10 CFR 50.44 by providing reasonable assurance that uniformly distributed hydrogen concentrations generated from a 100% fuel clad coolant interaction inside containment will not exceed detonable levels, as concluded in NUREG-1793, Section 6.2.5.10. As such, the AP1000 is designed to mitigate, without detonation, a quantity of hydrogen much larger than could be generated through the corrosion of the inorganic zinc coating.

No change was made to the rule, the DCD, or the EA as a result of this comment.

Comment: It is now evident that a detonation shock wave (not deflagration) occurred at Fukushima Unit 3, destroying much of the structure. The AP1000 containment is not designed to withstand a detonation shock wave. Until the cause of the detonation is determined, the NRC should not certify the AP1000 design. (S55-11)

NRC Response: This comment is out of the scope for this rulemaking process, which concerns an amendment to the rule certifying the AP1000 design in 10 CFR Part 52, Appendix D. However, the NRC disagrees with the assumption embedded in the comment that the AP1000 design may be subject to a detonation shock wave. Both the design of the steel containment vessel and the corresponding severe accident analysis were in the scope of the initial design certification and were evaluated. This included evaluation of hydrogen-generated pressure loads, as explained below. In addition, no changes have been proposed to the design in this regard in the current DCA application. Nonetheless, the NRC staff addresses the technical aspects of the comment as follows: The NRC staff documented its evaluation of the AP1000 design and supporting analysis in NUREG-1793, "Final Safety Evaluation Report Related to Certification of the AP1000 Standard Design" (September 2004). The NRC staff found that the combustible gases would not accumulate to a level that would support combustion or detonation. This included consideration of local gas concentrations, which may be higher than the average concentration in the containment atmosphere.

To prevent detonation, NRC regulations require applicants for light-water reactor designs to do one of two things. One option is to inert the containment, displacing the oxygen so there is nothing with which a combustible gas can react. The other is to limit hydrogen concentrations to the point where detonation cannot occur.

Hydrogen is generated when the fuel cladding reacts with reactor coolant, which can happen at the very high temperatures expected when the core is not adequately cooled. Applicants must assume that all the cladding in contact with active fuel reacts with water. If the resulting

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hydrogen were uniformly distributed in the containment atmosphere, its concentration must be less than 10 percent (by volume). The applicant calculated that concentrations of combustible gases would not reach this concentration anywhere in containment, even locally.

Applicants must also demonstrate that containment can withstand accident conditions, including pressurization induced by burning this hydrogen. The analytical technique used must be acceptable to the NRC staff. Both containment and accident mitigating features must maintain their structural integrity. To evaluate containment capacity, Westinghouse considered various failure modes—ways that the containment might fail. These involved the cylindrical shell, top and bottom heads, equipment hatches and covers, personnel airlocks, as well as mechanical and electrical penetrations. The results showed significant design margin to accommodate hydrogen-generated pressure loads that could be generated during severe accidents.

No change was made to the rule, the DCD, or the EA as a result of this comment.

Comment: A robust AP1000 containment with a system to collect and treat any leakage is necessary. Events at Fukushima demonstrate that even after the roofs of the secondary containment buildings were blown off by hydrogen explosions, the primary containment structure at each reactor was intended as the last defense against major radiation releases. (S39-7)

NRC Response: The NRC agrees with this comment to the extent that it proposes a robust containment to minimize the release of radioactive materials. The NRC considers a single metal containment vessel to be acceptable if it meets the requirements of the ASME B&PV Code, Section III, Subsection NE. This part of the ASME Code contains requirements for the material, design, fabrication, examination, inspection, testing, and overpressure protection of metal containment vessels. Westinghouse has satisfied the NRC that the containment building is robust and will perform its safety functions effectively if an accident occurs at an AP1000 plant. See comment discussion under the heading of Containment – comments about cooling above. No change was made to the rule, the DCD, or the EA as a result of this comment.

Comment: The comment states that the NRC has not adequately analyzed the un-reviewed safety issue raised by Mr. Gundersen in his assertion that the shield building does not function as a secondary containment. (S55-9)

NRC Response: The NRC recognizes that the shield building does not function as a secondary containment and no reliance is put on it for this function. In its SERs on the initial certified design and on the amendment to that design, the NRC does not attribute any containment functions to the shield building (See NUREG-1793 and Supplement 2 to that NUREG). This comment offers no new information on the scope of the AP1000 DCA. No change was made to the rule, the DCD, or the EA as a result of this comment.

Comment: The NRC did not require full scale testing of the AP1000 containment as it did for the Mark 3 containment. (S55-13)

NRC Response: This comment is out of the scope for this rulemaking process, which concerns an amendment to the rule certifying the AP1000 design in 10 CFR Part 52, Appendix D. However, as part of the initial certification for AP1000 (and for AP600), Westinghouse conducted an extensive test program of the new safety features such as the PCCSs to

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demonstrate their acceptability. There were no changes to these features within the scope of the current amendment. No change was made to the rule, the DCD, or the EA as a result of this comment.

SAMDA

This subject area includes comments on the SAMDA and related analysis for the AP1000 design.

Comment: The comment states that the NRC should not use zero probability of containment failure or leakage as the basis for the SAMDA analysis for new reactors, which is in turn reflected in the analysis of severe accidents. (S39-3, S55-1, S55-7, S55-8)

NRC Response: Neither Westinghouse nor the NRC has asserted that containments have zero probability of leaking. A certain amount of leakage is assumed to occur even if the containment remains intact. An applicant must show that the consequence of this leakage is acceptable for a hypothetical DBA. For beyond-DBAs, the applicant must show that larger leaks, should they occur, do not create unacceptable risk.

The NRC provides the following discussion to give more information about the SAMDA analysis done as part of the initial certification, and to explain the purpose of the assumption of zero probability of leakage which was employed solely for the purpose of weighing SAMDAs.

The SAMDA analysis explicitly assumed that any failure of the primary containment would result in releases directly to the environment. No credit was taken for scrubbing of radionuclides by water flowing over the postulated hole in containment, their deposition within the shield building, the elevation of the point of their release, or for other dynamic effects that would reduce the consequences of their release. The NRC found Westinghouse's analysis to be more conservative than modeling a release to the shield building. The analysis bounded the largest predicted release consequence from the certified design (no filtered vent). The predicted consequence is a large release, as reported in Chapter 49 of Westinghouse's probabilistic risk assessment (PRA) report. The severity of this bounding event maximizes the assessed benefit of each SAMDA evaluated. Conversely, the assumption that each SAMDA, if incorporated into the design, would eliminate all release of radioactive material from containment maximizes the benefits of each SAMDA compared to its costs, so that it is more likely that the SAMDA will be cost beneficial and will therefore warrant inclusion in the design.

For example, a filtered vent of the primary containment would not mitigate all accidents. A filtered vent is not used unless the containment is challenged; scenarios where the containment remains intact are not mitigated by the system. Neither will a filtered vent mitigate the consequences of releases by pathways that may exist even when the containment is undamaged. (This could be an isolation valve that opens or does not close. A release could also be caused by a bypass of containment through an interfacing system.) Containment failures due to dynamic phenomena such as a hydrogen burn or steam explosion cannot be mitigated by a filtered vent. A filtered vent is not capable of relieving such a rapid pressure increase in containment. Consequently, the filtered vent should not be credited for mitigating the release resulting from any of these scenarios. Accordingly, the analysis assumptions make it more likely that a filtered vent will be cost-beneficial and incorporated into the design. Of

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course, even with these favorable assumptions, it was not cost-beneficial to incorporate a filtered vent into the AP1000 design.

No change was made to the rule, the DCD, or the EA as a result of this comment.

Comment: The comments state that the AP1000 design-basis or SAMDA analysis does not anticipate a reduction in containment wall thickness that would result in a rapid release of radiation. (S39-4, S58-12)

NRC Response: The NRC disagrees with these comments. To the contrary, the AP1000 design considers potential containment wall thinning, and therefore, calls for the application of protective coatings to prevent such thinning. In addition, key parts of the containment wall are thicker than necessary to perform design functions so that if corrosion were to begin when the plant starts up, at the end of its design life the containment would still have the thickness and strength to perform all of its design functions.

Nevertheless, the SAMDA analysis anticipates a spectrum of containment failures. The analysis considers the potential for a large, undetected opening in containment to exist before an accident occurs. Radioactivity released through this hole is considered to be injected directly into the environment. This assumption increases the likelihood that additional design features will be justified as cost-beneficial as explained in the previous comment. No changes to the rule, the DCD, or the EA were made as a result of this comment.

Comment: The net effect of all these non-conservative assumptions in the Westinghouse AP1000 design is that post accident radiation doses to the public could be several orders of magnitude higher (one hundred to one thousand times higher) than those assumed by Westinghouse in its AP1000 design. Such calculational flaws quite seriously impact emergency planning over a much broader area than that presently assumed in the Westinghouse SAMDA analysis and NRC staff review. (S55-20)

NRC Response: The NRC does not agree with this comment. Westinghouse made conservative assumptions in calculating the benefit of each SAMDA. The benefit is calculated from the consequences that might be avoided if a design alternative is adopted. A bigger benefit from a design alternative justifies a higher cost, making it more likely that an alternative will be implemented.

Westinghouse assumed that each SAMDA will eliminate all failures it is intended to mitigate. Realistically, no system will perform so well, but assuming that it can do so makes the design alternative look better. This is a conservative assumption that bounds the possible benefit.

Westinghouse also made conservative assumptions about the damage avoided, erring on the side of high consequences. This provides additional confidence that the benefit has not been underestimated. The release rate for a severe accident was never assumed to be less than the maximum leakage allowed by design (into the auxiliary building). However, consequences included in the analysis ranged up to the large release expected if an undiscovered hole (not merely a crack) exists in containment when a severe accident occurs. As the comment indicates, the resulting dose to the public would be orders of magnitude higher, much more than regulations allow. The NRC does not consider the SAMDA analysis to be realistic, but the results make a convincing case that no identified SAMDA is worth the expense. Emergency planning is not part of the SAMDA analysis, and offsite emergency planning is site-specific.

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No change was made to the rule, the DCD, or the EA as a result of this comment.

Spent Fuel

This subject area includes comments on onsite SFP storage and long-term storage/disposal of spent fuel, whether related to the AP1000 design or in general.

The SFP is a safety-related structure, housed in the auxiliary building that provides protection from aircraft impact or other external hazards.

For the first 72 hours, after loss of normal SFP cooling, including response to an SBO event, the SFP design relies upon the natural heat capacity of the water in the pool to absorb the heat from spent fuel elements, and boil the water in the pool. Thus, the safety-related means of heat removal for 72 hours is by heat-up of the volume of water in the pool and in safety-related water sources such as the cask washdown pit. A nonsafety-related SFP cooling system is also installed. Onsite, protected sources of water are available for up to 7 days, controlled from areas away from the pool. In modes with high heat load in the pool, two sources of ac power are specified in the availability controls. Water can be sprayed into the pool from two nozzle headers on opposite sides of the pool. A cross-connection also exists to the residual heat removal system. Those design features needed to provide make-up water after 72 hours and up to 7 days, such as the passive containment cooling water ancillary storage tank, and ancillary diesel generators (DGs), are protected from external hazards including the SSE, tornado, and flooding.

Design changes within the scope of the current amendment are the number of fuel assemblies stored, the rack designs for new and spent fuel storage, the criticality analysis for spent fuel in the pool (including use of boron material attached to the storage cells), installation of spray headers, and credit for additional water sources for pool makeup.

Comment: A number of comments expressed concern that existing storage methods are inadequate. Some offered proposals for backup control, monitoring and power systems. A few stated that early lessons learned from Fukushima reveal that the SFPs should not be densely packed; there should be a robust containment around the fuel pools; there should be redundant cooling systems for the fuel pools; the buildup of hydrogen in the fuel pools needs to be addressed; and there should be back up power for pumps, cooling systems and monitoring systems. (S46-1; S57-1 through -12)

NRC Response: As discussed in the FSER, the AP1000 design meets current requirements. The Commission established an NTTF to perform a review of the Fukushima Daiichi accident. The NTTF evaluated all technical and policy issues related to the event to identify potential research, generic issues, changes to the reactor oversight process, rulemakings, and adjustments to the NRC's regulatory framework that should be conducted by the NRC. The NTTF issued its report (ADAMS Accession No. ML111861807), dated July 12, 2011 and recommended that enhancements be made to SFP makeup capability and instrumentation for the SFP. Due to the AP1000's passive design, the NTTF recommended that design certification rulemaking activities continue.

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It is important to note that the AP1000 SFP design is significantly different from the pool designs at the Fukushima Daiichi reactors in Japan and all of the operating reactors in the U.S. In addition to having a forced cooling system that utilizes pumps that rely upon ac electrical power for operation, the AP1000 also has a passive safety-related pool cooling capability that does not require ac electrical power to operate. Thus, the fuel remains adequately cooled for 72 hours in the event of an SBO.

NRC regulations require that the AP1000 SFP be designed with adequate SFP criticality controls and cooling capability to handle all operational conditions and postulated accident scenarios. The NRC reviewed the AP1000 SFP design presented in the AP1000 DCD amendment, evaluated the design against applicable regulations and guidance, and determined that the AP1000 SFP design meets all applicable requirements. The engineering calculations and analyses that were performed to support the SFP safety analysis were based on the geometry of the pool and the fuel stored in the SFP. Therefore, the density of spent fuel in the SFP was considered in both criticality and cooling calculations.

The comments presented potential concerns related to the density at which fuel is packed into the SFP, but do not list any specific deficiencies in the AP1000 criticality analysis. The AP1000 DCD Revision 18 criticality analysis was reviewed following the guidance found in SRP Section 9.1.1, Revision 3, "Criticality Safety of Fresh and Spent Fuel Storage and Handling," to ensure that the applicant is in compliance with the applicable regulations (GDC 62, "Prevention of Criticality in Fuel Storage and Handling," and 10 CFR 50.68, "Criticality Accident Requirements"). These requirements are generally performance-based with limitations on the reactivity values, and as such, there are no specific physical design requirements such as minimum geometric spacing which must be met. The AP1000 SFP criticality analysis demonstrates that, with the proposed storage arrangement of the SFP, the reactivity requirements are met. Therefore, the NRC staff has determined that the AP1000 SFP storage arrangement is acceptable based on the criticality analysis.

The AP1000 SFP cooling review results presented in the NRC safety evaluation were based on the SFP design in AP1000 DCD Revision 18. The AP1000 DCD Revision 18, SFP cooling analysis was reviewed following the guidance found in NUREG-0800 Section 9.1.3, Revision 3, "Spent Fuel Pool Cooling and Cleanup System," to ensure that the applicant is in compliance with the applicable regulations (GDC 2, "Design Bases for Protection Against Natural Phenomena," GDC 4, "Environmental and Dynamic Effects Design Bases," GDC 5, "Sharing of Structures, Systems, and Components," GDC 61, "Fuel Storage and Handling and Radioactivity Control," and GDC 63, "Monitoring Fuel and Waste Storage"). The increase in pool capacity (between DCD Revisions 15 and 18) allows the SFP to store 270 additional fuel assemblies. The number of fuel assemblies assumed to be offloaded during each refueling, and the frequency of refueling is not affected by this change. As a result of the increased SFP capacity, an additional 270 fuel assemblies will remain in the pool for a longer period of time. These assemblies would have over 10 years of decay time, which will result in a decreasing heat load from them. Therefore, the heat load contribution from these additional assemblies represents only a small fraction of the overall pool heat load. The safety-related cooling for the AP1000 SFP is dependent only on the use of passive safety features for the first 72 hours. The seismic Category I PCCWST contains water that drains by gravity into the SFP to provide safety-related makeup water to ensure that the spent fuel remains covered with water. The NRC staff reviewed the pool cooling analysis performed by the applicant and determined that the AP1000

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SFP has adequate cooling and makeup water sources to cool the spent fuel stored in the pool under all anticipated operational occurrences and accident scenarios.

The Commission established a NTTF to perform a review of the Fukushima Daiichi accident. The NTTF evaluated all technical and policy issues related to the event to identify potential research, generic issues, changes to the reactor oversight process, rulemakings, and adjustments to the NRC's regulatory framework that should be conducted by the NRC. The NTTF recommended no changes to the AP1000 design. Should the Commission implement new requirements for spent fuel storage that are applicable to the AP1000 design, the NRC will use its regulatory processes to apply them.

No change was made to the rule, the DCD, or the EA as a result of this comment.

Comment: In light of the Fukushima Daiichi accident, the SFP cannot be in proximity to the reactor core, pressure vessel or containment and should be passively cooled. The comment indicates this is a lessons-learned from the Fukushima accident. (S52-1e)

NRC Response: Although the comment does not specify what distance constitutes "in proximity," the SFP for the AP1000 is in the auxiliary building, which is a substantial structure, and outside of the containment that houses the reactor core and pressure vessel. The AP1000 passive cooling offers benefits unique to this design. The NRC has found both passive and active cooling systems for SFPs to be acceptable. The AP1000 DCA has been found to comply with NRC regulations. The NRC's Fukushima Daiichi NTTF noted in its report that the AP1000 design certification, currently in the rulemaking process, has passive safety systems. By nature of its passive design and inherent 72-hour coping capability for core, containment, and SFP cooling, the AP1000 design has many of the design features and attributes necessary to address the NTTF recommendations. Therefore, the NTTF expressed support for completing the AP1000 design certification rulemaking without delay (see NTTF Report, pages 71-72). Consistent with this recommendation, the NRC believes that the AP1000 final rulemaking can and should proceed without delay because: (i) the NRC has determined that the AP1000 DCA meet current regulations; (ii) the AP1000 design features already address many of the design concerns and recommendations raised by the NTTF; (iii) the NRC will provide an opportunity for the public to provide input on NTTF recommendations, and (iv) if the NRC imposes additional requirements on the AP1000 design, existing regulations already define the process for doing so under 10 CFR 52.63. No change was made to the rule, the DCD, or the EA as a result of this comment.

Comment: The SFP should be redefined as a subcritical assembly with the potential to go critical with no active or passive control mechanism. (S52-1f)

NRC Response: The NRC disagrees with this comment. Nuclear reactor plants include facilities for storage of new and spent fuel. The new fuel storage facility includes the fuel assembly storage racks, the concrete storage vault that contains the storage racks, and the auxiliary components. The spent fuel storage facility includes the spent fuel storage racks, the spent fuel storage pool that contains the storage racks, and the associated equipment storage pits.

The NRC reviewed the AP1000 design, specifically the new and spent fuel storage facilities and verified that the storage facilities maintain the new and spent fuel in subcritical arrays during all

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Comment: Volumetric guidance analysis for decay heat cooling contingency plans is needed to understand limitations on volume and transfer of liquids among volumes. (S52-1i)

NRC Response: The inventory of liquid relied upon in the AP1000 design for the removal of decay heat has been established for all DBEs (including SBO) and for beyond-DBEs including severe accidents. All the water that will be needed in containment is already there before plant operation begins, either within the reactor coolant pressure boundary or held in the IRWST. A 3-day supply of water for passive containment cooling is stored in a tank atop the shield building. An onsite storage tank holds an additional 4-day supply of water to refill that tank, and redundant ancillary generators are prepositioned in the annex building with redundant pumps that can each transfer as much water as is needed. Together with a 4-day supply of fuel for these generators, all of this "ancillary" water and equipment is located in structures that are designed to survive seismic events, high winds, and the missiles generated by high winds (FSER Section 3.3). The NRC has concluded from its evaluation that the AP1000 design meets the Commission's regulations and provides reasonable assurance of adequate protection of public health and safety. No change was made to the rule, the DCD, or the EA as a result of this comment.

Comment: For NPPs in earthquake zones, we cannot expect structural integrity. Thus, the plans should be designed so that volumes and channels are such that they minimize connections to adjacent volumes from which contaminated liquid effluents can flow. (S52-1j)

NRC Response: The NRC disagrees with this comment. Applicants for a license must demonstrate that the plant can shutdown safely after any earthquake that would be predicted to affect the plant if built at the proposed location. More than this, the applicant must show that there is a large margin in the seismic capacity of all of the necessary SSCs to perform safe-shutdown. In the event of a beyond-design-basis earthquake, the applicant must show that there is still a high confidence of a low probability of failure. During all DBAs and severe events, the containment vessel of the AP1000 prevents the uncontrolled release of radioactivity to the environment. In addition, Appendix A to 10 CFR Part 50, "General Design Criteria for Nuclear Power Plants," Criterion 2, requires that SSCs important to safety (e.g., the liquid waste management system), be designed to withstand the effects of natural phenomena without the loss of capability to function, and that these SSCs be designed to withstand accident conditions in combination with the effects of natural phenomena. Technical specifications include the design feature specifications that limit volume and type of tank contents to limit the potential for a release. The NRC has concluded from its evaluation (FSER Section 3.8.7 for Category I structures) that the AP1000 design meets the Commission's regulations and provides reasonable assurance of adequate protection of public health and safety. No change was made to the rule, the DCD, or the EA as a result of this comment.

Comment: Color code components so that in case of accident, we will quickly identify major components from digital images. (S52-1k)

NRC Response: The NRC disagrees with this comment. Major components are easily identifiable by the approximate location in the plant. For example, the main turbine generator is a large component and is located within a large floor of the turbine building. The NRC will not license a facility nor will it issue a design certification that does not comply with NRC requirements. The NRC has concluded from its evaluation that the AP1000 design meets the Commission's regulations and provides reasonable assurance of adequate protection of public

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recommendations (SRM-SECY-11-0093, dated August 19, 2011 (ADAMS Accession No. ML112310021), and SRM-COMWDM-11-0001/COMWCO-11-0001, dated August 22, 2011).

To the extent that the Commission might approve any NRC staff recommendations to impose additional requirements on the AP1000 design, the NRC can amend the AP1000 DCR to reflect those requirements. Any Commission-imposed changes would be subject to the issue finality provisions of 10 CFR 52.63(a)(1) and would have to meet one or more of the change criteria of that paragraph.

The NRC believes that the AP1000 final rulemaking can and should proceed without extending the public comment period because: (i) the NRC has determined that the AP1000 DCA meets current regulations; (ii) the AP1000 design features already address many of the design concerns and recommendations raised by the NTTF; (iii) the NRC will provide an opportunity for the public to provide input on NTTF recommendations, and (iv) if the NRC imposes additional requirements on the AP1000 design, existing regulations already define the process for doing so under 10 CFR 52.63.

No change was made to the rule, the DCD, or the EA as a result of this comment.

Fukushima – Cooling Capabilities

Comment: Westinghouse has not proven that the reactor could be properly cooled in conditions similar to those at Fukushima. (FL-8)

NRC Response: The NRC understands these comments to refer to the severe external environmental conditions experienced at Fukushima and the resultant accident. The AP1000 design can withstand severe external environmental hazards such as fires, flooding, tsunamis, high winds, hurricanes, tornadoes, snow and ice, impacts, and seismic events that are considered credible in the U.S. The AP1000 design was previously analyzed for these severe environmental conditions as part of the initial design certification and the AP1000 design, as amended, continues to meet NRC requirements. Westinghouse has shown and the NRC has concluded in its review as documented in the FSER (NUREG-1793, Supplement 2) that the AP1000 design can keep the reactor properly cooled under these severe environmental conditions, thus providing reasonable assurance that the public is protected.

The Fukushima accident occurred, in part, because of the loss of ac power (also known as SBO), which was necessary to maintain core cooling. The AP1000 design has a passive safety system (natural circulation) and inherent 72-hour coping capability for core, containment, and SFP cooling – even if an LOCA has occurred.

After 3 days with no ac power, only a small “ancillary” generator is needed. This generator is used to power a small pump that refills the tank that supplies water to the outside surface of the containment. The AP1000 design provides two such generators that are installed in a seismically qualified structure (along with their fuel and supporting equipment). The AP1000 design includes provisions to support emergency operating protocols such that after 1 week without ac power, the containment can be cooled indefinitely by replenishing fuel supplies for at least one ancillary generator and replenishing water in the water tank above the shield building. The NRC has reviewed these AP1000 design features and operational provisions and

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concluded that they meet NRC requirements. These features of the AP1000 design demonstrate that the reactor can be properly cooled during accident conditions.

No change was made to the rule, the DCD, or the EA as a result of this comment.

ADDITIONAL FORM LETTER COMMENTS

Fukushima – Do Not Build Any More Reactors

Comment: Because of the recent events at the Fukushima NPP in Japan, and other historical nuclear events such as Chernobyl, nuclear reactors should no longer be built. (F431-1, F1283-1, F3227-1, F6951-2, F6987-1, F7547-1, F8250-1, F8250-2, F9115-5, F9413-2, F9413-3, F9413-4, F9413-8, F9413-9, F9413-10, F9461-1, F9786-2, F9786-3, F9786-4, F9786-8, F9786-9, F9786-10, F9480-1)

NRC Response: Several comments expressed concern about the use of nuclear power in light of the events at the Fukushima facility in Japan, as well as other historical events, such as Chernobyl (Russia) and TMI (U.S.). These comments are out of the scope for this rulemaking process, which concerns an amendment to the rule certifying the AP1000 design in 10 CFR Part 52, Appendix D, not a licensing decision on whether to build new reactors. The NRC regulates the safe and secure use of nuclear materials, including NPPs. The NRC does not determine whether reactors are to be built in the U.S.; rather, its mission is to ensure that if reactors are to be built in the U.S. that they comply with NRC requirements and guidelines. No change was made to the rule, the DCD, or the EA as a result of this comment.

Fukushima – Nuclear Power is Dangerous, Unsafe, and Unclean

Comment: The recent accident at the Fukushima NPP in Japan has shown that nuclear power is dangerous, unsafe, and unclean. (F431-2, F5591-1, F5591-2, F5591-3, F6167-1, F6951-1, F9413-5, F9786-5, F11876-1)

NRC Response: Several comments expressed general concern about the safety of nuclear power in light of the events at the Fukushima facility in Japan, as well as other historical events, such as Chernobyl (Russia) and TMI (U.S.). These comments are out of the scope for this rulemaking process, which concerns an amendment to the rule certifying the AP1000 design in 10 CFR Part 52, Appendix D. The NRC's regulations provide reasonable assurance of adequate protection of public health and safety. The NRC reviewed the AP1000 design, as amended, and determined in its FSER that the design complies with all of the applicable regulations. Further, all U.S. NPPs are designed with multiple layers of protection, or "defense-in-depth," with SSCs that are designed to prevent an accident or, should an accident occur, minimize the consequences of an accident. The NRC continues to believe that the current regulations that apply to the AP1000 design, as amended, are adequate and that the AP1000 design is acceptable as described in the FSER.

The NRC interprets the comments regarding nuclear power being unclean to mean there are concerns with the long-term impact of spent fuel on the environment. The AP1000 design includes a SFP where spent fuel rods will be stored. In the Commission's Waste Confidence Decision and Rule (10 CFR 51.23(a)) (75 FR 81032), the Commission has made the generic

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followed all applicable procedures and processes in its safety review and has found that the AP1000 DCA meets all NRC requirements.

The Commission established an NTTF to perform a review of the Fukushima Daiichi accident. The NTTF evaluated all technical and policy issues related to the event to identify potential research, generic issues, changes to the reactor oversight process, rulemakings, and adjustments to regulatory framework that should be conducted by the NRC. The NTTF issued its report (ADAMS Accession No. ML111861807) on July 12, 2011, recommending that the AP1000 rulemaking process proceed without delay. Consistent with this recommendation, the NRC believes that the AP1000 final rulemaking can and should proceed without delay (see NTTF Report, pages 71-72) because: (i) the NRC has determined that the AP1000 DCA meets current regulations; (ii) the AP1000 design features already address many of the design concerns and recommendations raised by the NTTF; (iii) the NRC will provide an opportunity for the public to provide input on NTTF recommendations, and (iv) if the NRC imposes additional requirements on the AP1000 design, existing regulations already define the process for doing so under 10 CFR 52.63. No change was made to the rule, the DCD, or the EA as a result of this comment.

Fukushima – Concern Regarding Earthquakes and Tsunamis in the U.S.

Comment: Based on the accident at the Fukushima Daiichi nuclear plant, several comments expressed a concern over the occurrence of major earthquakes of increasing frequency and magnitude and resultant tsunamis. Specific concerns were related to fault lines that could impact U.S. plants and the design for west coast nuclear plants. (F8104-1, F9413-1, F9413-7, F9786-1, F9786-7)

NRC Response: These comments are out of scope for this rulemaking process, which concerns an amendment to the rule certifying the AP1000 design in 10 CFR Part 52, Appendix D. Although it may seem that more earthquakes are occurring, earthquakes of magnitude 7.0 or greater have remained fairly constant throughout this century. The National Earthquake Information Center locates about 12,000 to 14,000 worldwide earthquakes each year or approximately 50 per day. According to long-term records (since about 1900), there are about 18 major earthquakes (7.0-7.9) and one great earthquake (8.0 or above) in any given year. However, the NRC believes that current operating reactors have adequate design bases for seismic events.

All U.S. nuclear plants are built to withstand natural hazards, including earthquakes. Even those nuclear plants that are located within areas of potentially higher seismic activity are designed to withstand such a natural disaster. The NRC requires that applicants consider the most severe natural phenomena reported for a site and the surrounding area, with sufficient margin for limitations in the data, in designing safety-significant SSCs. In addition to the design of the plants, significant effort goes into emergency response planning and accident management. This approach is called defense-in-depth. Each NPP is designed to a ground-shaking level that is appropriate for its location, given the possible earthquake sources that may affect the site and its tectonic environment. Ground shaking is a function of both the magnitude of the earthquake and the distance from the fault plane to the site. The existing plants were designed on a “deterministic” or “scenario earthquake” basis that accounted for the largest earthquake expected in the area around the plant. The design-basis earthquake for the San Onofre (SONGS) NPP is a magnitude 7.0 earthquake located near the site (5 miles (8 km)) with

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a ground acceleration of 0.67g. The design-basis earthquake for the Diablo Canyon NPP is a magnitude 7.5 earthquake located on the Hosgri fault at a distance of 3 miles (5 km) from the site with a ground acceleration of 0.75g.

In more seismically active regions, such as the Western U.S., faults are often well mapped and characterized. However, there are very few mapped active faults in the Central and Eastern U.S. (CEUS). In general, earthquakes in the CEUS are not attributable to a known fault and earthquake occurrence in this part of the country is not as well understood. Due to the lack of clearly defined active faults, the seismicity in the CEUS is often defined in terms of "seismic zones." The major seismic zones in the CEUS are the New Madrid and Charleston zones. The New Madrid seismic zone, located in the southern and Midwestern U.S., is responsible for the 1811-12 New Madrid sequence of earthquakes with estimated magnitudes between 7 and 8. The Charleston seismic zone, related to the 1886 Charleston earthquake in South Carolina, has an estimated magnitude between 6.6 and 7.2. NPPs in the CEUS are predominantly located in areas of low seismic activity, away from these active seismic zones.

Earthquakes with very large magnitudes, such as the March 2011 magnitude 9 Tohoku earthquake off the northeast coast of Japan, occur within subduction zones. Subduction zones are locations where one of the earth's tectonic plates is subducting beneath another. The only subduction zone that is capable of directly impacting the continental U.S. is the Cascadia subduction zone, which lies off of the coast of northern California, Oregon, and Washington. The only operating NPP in that area is Columbia, in Benton County, Washington. It is far from the coast and the subduction zone.

Tsunamis can occur as a result of earthquakes. Nuclear plants are designed to withstand flooding from not only tsunamis, but also hurricanes and storm surges; therefore, there is often significant margin against tsunami flooding. However, it should be noted that the Fukushima accident has shown that drawdown, recession of water prior to the onset of a wave, can be a significant problem. Drawdown is considered in NRC's current regulatory guidance and had been since 2007.

Those plants that might face a threat from tsunami are required to withstand large waves and the maximum wave height at the intake structure. Tsunami flooding has been considered in the design of U.S. nuclear plants since the publication of RG 1.59 in 1977, which has conservative analysis methods that the NRC continues to utilize.

The level of tsunami flooding that each plant is designed for is site-specific and is appropriate for what may occur at each location. Japan is located in the "Ring of Fire" and is subject to significant seismic, tsunami and volcanic hazards. Only 35 out of 104 operating U.S. nuclear plants are located in coastal locations subject to potential tsunami or storm surge flooding. None are located near volcanic activity. Nine of the 35 nuclear plants are located on the Great Lakes. The remaining 26 operating plants are located on the Pacific, Atlantic, and Gulf Coast.

Tsunami flooding on the Gulf and Atlantic Coasts occurs, but is very rare. Generally, the flooding anticipated from hurricane storm surge exceeds the flooding expected from a tsunami for plants on the Atlantic and Gulf Coasts. For the Great Lakes, there is no record of seismic generated (earthquake) tsunami waves. As in the case of the Atlantic and Gulf Coast nuclear plants, storm surge is most often the design-basis flood. The 1958 Lituya Bay (Alaska) tsunami

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of 1,720 feet (524 m) at the head of the Bay was caused primarily by an enormous rockfall into Gilbert Inlet. No operating U.S. nuclear plant is located in an environment similar to Lituya Bay.

Diablo Canyon and SONGS are two nuclear plant sites that have potential for tsunami hazard (Pacific Coast). The SONGS and Diablo Canyon main plants are located above the flood level associated with tsunami.

Even though the NRC has determined that existing plants provide reasonable assurance of adequate protection of public health and safety, the NRC is fully engaged in national international tsunami hazard mitigation programs, and is conducting active research to refine the tsunami sources in the Atlantic, Gulf, and Pacific Coasts areas. Currently, the NRC has a tsunami research program that is focused on developing modern hazard assessment techniques and additional guidance through cooperation with the National Oceanic and Atmospheric Administration (NOAA) and the U.S. Geological Survey (USGS). This has already led to several technical reports and an update to NRC's safety review guidance. The NOAA and USGS are also assisting with ongoing reviews of tsunami hazard. In addition, the NRC is developing a new RG on tsunami hazard assessment, which is expected to be available in draft form in 2012.

In summary, each U.S. NPP is designed against conditions appropriate for its location on a site-specific basis. No change was made to the rule, the DCD, or the EA as a result of this comment.

Fukushima – Untested Reactors and Safety in the Event of a Natural Disaster

Comment: In light of the events at Fukushima, several comments expressed concern over the safety of new reactor designs and their lack of demonstration testing. Specific concerns included how the new AP1000 design would react in a natural disaster and whether a reactor accident, natural disaster, or terrorist attack could result in greater, longer term consequences. These comments also suggested that people living in the service area of a new design should be asked if they are willing to be the at-risk population during testing of the new design, a decade long moratorium against the use of the design at other sites during this testing phase. Alternative sources of power are also suggested. (F1009-1, F1952-1, F5761-1, F5833-1, F7547-5)

NRC Response: These comments are out of the scope for this rulemaking process, which concerns an amendment to the rule certifying the AP1000 design in 10 CFR Part 52, Appendix D. However, substantial testing was done of new technology employed in the AP1000 design, as documented in Chapter 21 of NUREG-1793, Supplement 2. Other testing will be performed to verify proper construction and operation of plants employing this design.

The NRC conducted a technical review of the DCD and associated information and prepared a FSER that documents the results of its review. In its FSER, the NRC found that the AP1000 design meets NRC requirements. The FSER for the DCD amendment can be found under ADAMS Accession No. ML112061231.

The AP1000 design can withstand severe external environmental hazards such as fires, flooding, tsunamis, high winds, hurricanes, tornadoes, snow and ice, impacts, and seismic events that are considered credible in the U.S. The AP1000 design was previously analyzed for

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these severe environmental conditions as part of the initial design certification and the AP1000 design, as amended, continues to meet NRC requirements. Westinghouse has shown and the NRC has concluded in its review as documented in the FSER (NUREG-1793, Supplement 2) that the AP1000 design can keep the reactor properly cooled under these severe environmental conditions, thus providing reasonable assurance that the public is protected.

The Fukushima accident occurred, in part, because of the loss of ac power (also known as SBO), which was necessary to maintain core cooling. The AP1000 design has a passive safety system (natural circulation) and inherent 72-hour coping capability for core, containment, and SFP cooling – even if an LOCA has occurred.

After 3 days with no ac power, during which time only battery power is used, only a small “ancillary” generator is needed. This generator is used to power a small pump that refills the tank that supplies water to the outside surface of the containment. The AP1000 design provides two such generators that are installed in a seismically qualified structure (along with their fuel and supporting equipment). The AP1000 design includes provisions to support emergency operating protocols such that after 1 week without ac power, the containment can be cooled indefinitely by replenishing fuel supplies for at least one ancillary generator and replenishing water in the water tank above the shield building.

The AP1000’s passive design offers several important safety benefits. Safety systems of the AP1000 reactor are designed to provide adequate core cooling even without ac electrical power from offsite or the onsite nonsafety-related DGs. Rather, the safety systems rely on power from the safety-related batteries for core cooling. The reliability of core cooling is not limited by the availability of offsite power or onsite nonsafety-related DGs. This is a fundamental strength of passive designs. The AP1000 design will prevent core damage even when ac power is lost. The NRC has reviewed these AP1000 design features and operational provisions and concluded that they meet NRC requirements.

No change was made to the rule, the DCD, or the EA as a result of this comment.

Fukushima – Tsunami and the Fukushima Plant Design

Comment: The water (tsunami) walls at the Fukushima Daiichi nuclear plant failed to do what they were designed for. (F8104-3)

NRC Response: This comment is out of scope for this rulemaking process, which concerns an amendment to the rule certifying the AP1000 design in 10 CFR Part 52, Appendix D. However, the March 2011 magnitude 9 Tohoku earthquake off the northeast coast of Japan occurred within a subduction zone, defined as a location where one of the earth’s tectonic plates is subducting beneath another. Large offshore earthquakes have historically occurred in the same subduction zone (in 1611, 1896, and 1933), all of which produced significant tsunami waves. The magnitudes of these previous large earthquakes have been estimated to be between 7.6 and 8.6.

All U.S. nuclear plants are built to withstand natural hazards, including earthquakes. Those plants that might face a threat from tsunami resulting from an earthquake are required to withstand large waves and the maximum wave height at the intake structure. Tsunami flooding

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Comment: After the NRC has determined lessons learned from the Fukushima accident, a new assessment should be conducted on the shield building integrity because questions remain regarding the shield building's ability to withstand similar pressures and stresses placed on the Fukushima reactor. (P1-2f and P1-2h)

NRC Response: The NRC does not agree with the comments. The NRC created an NTTF to review the Fukushima event and conduct a methodical and systematic review of the NRC's 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 consideration. See *Tasking Memorandum – COMGJB-11-0002 – NRC Actions Following the Events in Japan* (March 23, 2011; ADAMS Accession No. ML111861807); included as Appendix B to the NTTF Report). The NTTF has issued its report (ADAMS Accession No. ML111861807). The NTTF did not recommend any changes to the AP1000 design, and indicated that the current AP1000 amendment rulemaking should proceed (see NTTF Report, pages 71-72). None of the NTTF's recommendations are relevant to the AP1000 shield building's ability to withstand accident pressures and stresses. Accordingly, based upon the NTTF's report, at this time there does not appear to be a basis for the NRC to require Westinghouse to reassess the shield building's structural integrity. However, as the NRC continues to gain more information about the Fukushima earthquake and the accident at Fukushima Daiichi, the NRC will continue to assess whether such information may warrant additional NRC action with respect to the AP1000 DCR. No change was made to the rule, the DCD, or the EA as a result of this comment.

Comment: The Fukushima accident raises further concerns about water recirculation cooling system failures. Early images from Fukushima show large amounts of structural debris from high heights in the building can fall toward the floor, potentially clogging recirculation filters. This could be a problem for the AP1000, because the AP1000 DBA is predicated on control of filter-clogging debris originating below the containment flood line. (P1-9a and P1-9b)

NRC Response: The NRC disagrees with this comment. Images of the Fukushima plant are outside of containment. It is not clear how the collapse of buildings outside of containment would impede emergency water recirculation inside containment. Recirculation is a function credited for response to LOCAs, not for safe-shutdown after an earthquake. Measures such as debris screens and protection plates over-hanging the entrance to the containment to minimize debris blockage are part of the AP1000 design. In addition, the NRC's Fukushima NTTF evaluated all technical and policy issues related to the event to identify potential research, generic issues, changes to the reactor oversight process, rulemakings, and adjustments to regulatory framework that should be conducted by the NRC." The Fukushima NTTF Report (ADAMS Accession No. ML111861807) did not identify debris-generated recirculation issues as a concern for the AP1000 design. Accordingly, the comment has not shown that the events at the Fukushima Daiichi Plant raise a concern about recirculation system performance due to debris. No change was made to the rule, the DCD, or the EA as a result of this comment.

Comment: The Fukushima Daiichi plant suffered an SBO, in which offsite power and onsite emergency ac power was lost. The SBO was caused by an earthquake and resulting tsunami. Under the [NRC's] current plan to issue the Vogtle COL immediately upon issuance of the final AP1000 DCR amendment, the result would be to begin construction without resolving applying the lessons learned from the Fukushima event to the AP1000 design. (P1-8a)

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NRC Response: The AP1000 plant is designed to protect the core during and after all kinds of disasters. This includes each natural disaster that could occur at a chosen site (e.g., hurricane, earthquake, tsunami). Adequate cooling of the reactor during and after all DBEs is provided by the safety-related cooling system of the AP1000. This system does not require ac electrical power (onsite or offsite) to operate.

A heat exchanger is submerged in the IRWST. The bottom of this tank is several feet higher than the top of the core. Hot water rises and cold water sinks; this makes the water circulate naturally in a loop between the reactor coolant system and this heat exchanger, transferring heat from the core to the IRWST. Water in the IRWST boils; the resulting steam is vented from the tank to mix with air in the containment building, where it circulates. The solid steel wall of the containment structure is cooler than the air-steam mixture inside, so water vapor in the air condenses on it. (The water droplets that form will drip down the wall to collect in a gutter, which channels the condensate back into the IRWST. This keeps the tank full.) On the containment's outside surface, a film of water is created by slowly draining a tank at the top of the shield building. The steel wall of the containment conducts heat from water condensing on the inside to warm the water evaporating on the outside. As it evaporates, its heat is transferred into the air flowing between the shield building and containment. The heated air rises, flowing through a chimney and taking the heat into the environment. Even if the core is damaged, the same physical principles will remove heat from the containment while keeping all radioactive material inside without the need for external power.

These features of the design were certified in the initial design certification rulemaking. No change was made to the rule, the DCD, or the EA as a result of this comment.

Comment: The 75-day comment period is inadequate. It is widely reported that Japan's manufacturing infrastructure has been seriously disrupted by the earthquake, tsunami and the evacuation from the region surrounding the Fukushima Daiichi Plant. There may be production train uncertainties for the multiple components and technical expertise involved in the nuclear design and construction in several countries. Since China is currently building the AP1000, U.S. orders for services and equipment may not [have a high] priorit[y] as Toshiba resumes ordinary operations. (P1-12d)

NRC Response: The NRC takes no position as to whether the comment's representations in this regard are true. However, even if true, the NRC does not see – and the comment does not explain – why these situations support the comment's assertion that 75 days is insufficient to provide comment on the proposed amendment of the AP1000 design certification. No change was made to the rule, the DCD, or the EA as a result of this comment.

Comment: The 75-day comment period is inadequate, inasmuch as many nuclear power experts have been deluged with news reports and requests for information on the Fukushima Daiichi Plant accident, and have had little opportunity to review the 173 documents comprising thousands of pages in the DCD Revision 18, and then compare them to earlier versions of the AP1000 design. (P1-12b)

NRC Response: The NRC takes no position as to whether the comment's representations in this regard are true. However, even if true, the comment does not explain whether such individual "experts" intended to submit comments on the proposed AP1000 amendment. In addition, the comment did not actually represent that the commenter was unable to provide

UNITED STATES OF AMERICA
U.S. NUCLEAR REGULATORY COMMISSION
BEFORE THE COMMISSION

In the Matter of

Luminant Generation, Co., L.L.C.	)	Docket Nos. 52-034-COL
(Comanche Peak Nuclear Power Plant,	)	and 52-035-COL
Units 3 and 4)	)	ASLBP No. 11-914-02-COL-BD01
 ENERGY NORTHWEST	)	Docket No. 50-397-LR
(Columbia Generating Station)	)	ASLBP No. 11-912-03-LR-BD01
 Southern Nuclear Operating Co.	)	Docket Nos. 52-025 & 52-026-COL
(Vogtle Electric Generating Plant,	)	ASLBP Nos. 11-912-02-COL-BD01
Units 3 and 4)	)	11-913-01-COL-BD01
 Duke Energy Carolinas, L.L.C.	)	Docket Nos. 52-018 and 52-019
(William States Lee III Nuclear Station,	)	ASLBP No. 11-913-01-COL-BD01
Units 1 and 2))	

PETITION FOR REVIEW OF LBP-11-27

I. INTRODUCTION

Pursuant to 10 C.F.R. § 2.341(b), Petitioners hereby seek review by the U.S. Nuclear Regulatory Commission (õNRCö or õCommissionö) of LBP-11-27 (Memorandum and Order (Denying Motions to Reopen Closed proceedings and Intervention Petition/Hearing Request as Premature) (Oct. 18, 2011)).¹ In LBP-11-27, the Atomic Safety and Licensing Board (õASLBö) relied on the Commission's decision in *Union Electric Co. d/b/a Ameren Missouri* (Callaway Plant, Unit 2), et al., CLI-11-05, __ NRC __ (Sept. 9, 2011) (õCLI-11-05ö) to deny as premature

¹ Petitioners are Lon Burman, Sustainable Energy and Economic Development (õSEEDö) Coalition, Public Citizen, and True Cost of Nukes (Comanche Peak combined operating license õCOLö proceeding); Blue Ridge Environmental Defense League (õBREDLö), (Vogtle COL proceeding); Center for a Sustainable Coast, Georgia Women's Action for New Directions f/k/a Atlanta Women's Action for New Directions, and Southern Alliance for Clean Energy (õSACEö) (Vogtle COL proceeding); Northwest Environmental Advocates (Columbia license renewal proceeding); and BREDL (William States Lee COL proceeding).

the admission of contentions which assert that the National Environmental Policy Act (NEPA) requires the NRC and license applicants to consider the environmental implications of the Fukushima Task Force Report² before it may issue combined operating licenses or renewed operating licenses in the above-captioned proceedings. The Commission should take review of LBP-11-27 because it is based on erroneous interpretations of both NEPA and CLI-11-05. In addition, even assuming for purposes of argument that the ASLB's legal interpretations were correct, the Commission has now provided the endorsement of the Fukushima Task Force Report that the ASLB requires as a condition for admission of the contentions, by broadly directing the NRC Staff to adopt certain Task Force recommendations within the next five years.

SRM/SECY-11-0124, Memorandum from R.W. Borchardt, Executive Director for Operations to Annette L. Vietti-Cook, Secretary, re: Recommended Actions to be Taken Without Delay from the Near-Term Task Force Report, ___ NRC ___ (October 18, 2011)(SRM/SECY-11-0124ö).³

Petitioners note that on October 28, 2011, in the Columbia, Comanche Peak, Vogtle, and W.S. Lee cases, they petitioned the ASLB to reinstate and supplement the bases for their contentions in light of SRM/SECY-11-0124. Therefore, Petitioners respectfully request the Commission to hold this petition for review in abeyance pending the issuance of a ruling by the ASLB on their petition to reinstate and supplement. *See, e.g., Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-01-1, 53 NRC 1, 3 (2001) (citing *International Uranium Corp.* (White Mesa Uranium Mill), CLI-97-9, 46 NRC 23, 24-25 (1997)).

² *Recommendations for Enhancing Reactor Safety in the 21st Century: the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident* (Task Force Reportö).

³ The SRM is posted on the NRC's website at <http://www.nrc.gov/reading-rm/doc-collections/commission/srm/2011/2011-0124srm.pdf>.

II. FACTUAL AND PROCEDURAL BACKGROUND

In March 2011, a catastrophic accident began at the Fukushima Dai-ichi Nuclear Power Station, Units 1-6 in Okuma, Japan. The NRC Commissioners immediately appointed a high-level Task Force, composed of its most qualified and experienced technical staff, to study the regulatory implications of the accident for the United States. 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.

Charter for the Nuclear Regulatory Commission Task Force to Conduct a Near-Term Evaluation of the Need for Agency Actions Following the Events in Japan (March 30, 2011).

On July 17, 2011, the Task Force issued its report, which contained a series of recommendations that are intended to clarify and strengthen the regulatory framework for protection against natural disasters, mitigation, and emergency preparedness, and to improve the effectiveness of the NRC's programs. Task Force Report at viii. Underlying these recommendations was a conclusion with enormous environmental and safety significance: that the NRC needed to strengthen the level of protection that is minimally required for the protection of public health and safety. As stated in the Report:

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 ix-x, 73-75.

Based on the Task Force Report, in the summer of 2011, Petitioners submitted contentions and motions to re-open the record in the above-captioned reactor licensing proceedings. The contentions challenge the failure of the environmental impact statements or environmental reports prepared in support of the licensing decisions to address the environmental implications of the Task Force Report, especially its conclusion that the requirements of the adequate protection standard needed to be upgraded.

On September 9, 2011, the Commission issued CLI-11-05 in response to an Emergency Petition, to which some of the Petitioners had been party. The Emergency Petition, filed in April 2011, had asked the Commission to establish a procedure for addressing the safety environmental implications of the Fukushima accident in licensing proceedings; and to suspend all licensing decisions, as it had after the Three Mile Island accident in 1979, pending resolution of the safety and environmental issues raised by the Fukushima accident.

In CLI-11-05, the Commission refused to suspend any licensing decisions or to establish procedures for addressing Fukushima-related issues in licensing proceedings. *Id.* at 25. The Commission also concluded that "given the current state of information," the Fukushima accident had not raised any generic environmental issues that should be addressed in a generic NEPA review. *Id.* at 30-31. The Commission instructed that:

Reactor adjudications should go forward, including those that may involve proposed contentions based on issues implicated by the Fukushima events. To the extent that the Fukushima events provide the basis for contentions appropriate for litigation in individual proceedings, our procedural rules contain ample provisions through which litigants may

seek admission of new or amended contentions, seek stays of licensing board decisions, appeal adverse decisions, and file motions to reopen the record, as appropriate.

Id., slip op. at 35.

On October 18, 2011, the ASLB issued LBP-11-27, rejecting as premature Petitioners' contentions. The ASLB interpreted CLI-11-05 to preclude admission of the Petitioners' contentions because "it remains much too early in the process of assessing the Fukushima event in the context of the operation of reactors in the United States to allow any informed conclusion regarding the possible safety or environmental implications of that event regarding such operation." *Id.* at 13. LBP-11-27 indicates, however, that the ASLB would consider the contentions to be admissible if and when the Commission adopts the Task Force recommendations:

It is difficult to fathom how the Commission could have stated more precisely and definitively that it remains much too early in the process of assessing the Fukushima event in the context of the operation of reactors in the United States to allow any informed conclusion regarding the possible safety or environmental implications of that event regarding such operation. *Of still greater importance given [the Petitioners'] entire reliance on the findings and recommendations of the Task Force, the Commission stressed with equal force and clarity that, while under active study, none of those findings and recommendations has been accepted.* Thus, they scarcely have been given the effect that, according to [the Petitioners], gives rise to the environmental implications that undergird the contention that is sought to be admitted.

Id. (emphasis added).

III. ARGUMENT

Under 10 C.F.R. § 2.341(b)(ii), a decision may be reviewed if a "necessary legal conclusion is without governing precedent or is a departure from or contrary to established law." In addition, review may be granted where a "substantial and important question of law, policy, or discretion has been raised." 10 C.F.R. § 2.341(b)(iii). *See also Nuclear Management Company LLC* (Palisades Nuclear Plant), CLI-06-17, 63 NRC 727, 729 (2006). Both of these standards are

met here, because the ASLB's decision misinterprets CLI-11-05's holding and the standard for new and significant information in 10 C.F.R. § 51.92.

A. LBP-11-27 is Based on a Misinterpretation of CLI-11-05.

LBP-11-27 is based on a fundamental misperception of CLI-11-05: that the Commission held in CLI-11-05 that currently there is no basis for concluding that new and significant information has arisen in any licensing proceeding such that NEPA consideration is warranted. In CLI-11-05, however, the Commission ruled only that, to date, there is insufficient basis for a "generic" NEPA review. *See, e.g.*, slip op. at 30 ("... any generic NEPA duty" if one were appropriate at all--does not accrue now); 31 ("... we decline petitioners' request to commence a generic NEPA review today"); 41 (For the reasons provided above, we: "... Deny petitioners' request for a separate generic NEPA analysis of the potential impacts of the Fukushima events") (emphasis in original).

Nowhere in CLI-11-05 does the Commission state that it has made a determination as to whether the Task Force Report raises new and significant information that should be considered in individual licensing proceedings. Indeed, the Commission states that the appropriate forum for considering the question is in individual licensing proceedings. For instance, at page 30 the Commission states that:

Although the Task Force completed its review and provided its recommendations to us, the agency continues to evaluate the accident and its implications for U.S. facilities and the full picture of what happened at Fukushima is still far from clear. In short, we do not know today the full implications of the Japan events for U.S. facilities.

If, however, new and significant information comes to light that requires consideration as part of the ongoing preparation of application-specific NEPA documents, the agency will assess the significance of that information, as appropriate. Our regulations specify the circumstances under which the Staff must prepare supplemental environmental review documents.

Id., slip op. at 30-31 (emphasis added). And at page 35, the Commission states:

Reactor adjudications should go forward, including those that may involve proposed contentions based on issues implicated by the Fukushima events. To the extent that the Fukushima events provide the basis for contentions appropriate for litigation in individual proceedings, our procedural rules contain ample provisions through which litigants may seek admission of new or amended contentions, seek stays of licensing board decisions, appeal adverse decisions, and file motions to reopen the record, as appropriate.

Thus, the ASLB's reading of CLI-11-05 is too broad. CLI-11-05 does not contain any ruling with respect to the question of whether the Task Force Report contains new and significant information that must be considered in individual licensing proceedings. Not only is CLI-11-05 devoid of any statement to that effect, but no indication is given that the Commission gave the issue the "hard look" required by NEPA. *See, e.g., SUWA v. Norton*, 301 F.3d 1217, 1238-39 (10th Cir. 2002); *Marsh v. Oregon Natural Resources Council*, 490 U.S. 360, 385 (1989).⁴ Instead, CLI-11-05 contains only a determination that (a) the Commission does not yet have enough information to make broad generalizations about the environmental implications of the Fukushima accident in a generic proceeding and (b) the question is more appropriately

⁴ To evaluate whether an agency took a "'hard look' at the new information to determine whether [supplemental NEPA analysis] is necessary, (*id.* (quoting *Headwaters Inc. v. Bureau of Land Mgmt., Medford Dist.*, 914 F.2d 1174, 1177 (9th Cir. 1990)) (internal citations omitted)), Courts consider "whether the agency obtains opinions from its own experts, obtains opinions from experts outside the agency, gives careful scientific scrutiny, [] responds to all legitimate concerns that are raised, . . . or otherwise provides a reasoned explanation for the new circumstance's lack of significance." *Id.* (quoting *Hughes River Watershed Conservancy v. Johnson*, 165 F.3d 283, 288 (4th Cir. 1999) (internal citations omitted)). *See also Natural Resource Defense Counsel, Inc. v. F.A.A.*, 564 F.3d 549, 561 (2nd Cir. 2009); *see further Warm Springs Dam Task Force v. Gribble*, 621 F.2d 1017, 1024-5 (9th Cir. 1990) ("These regulations do not in themselves provide a suitable standard for reviewing an agency's decision not to supplement an EIS in light of new information. However, the standard applied in reviewing an agency's decision not to file an EIS in the first instance is appropriate here as well; the decision will be upheld if it was reasonable. . . . When new information comes to light the agency must consider it, evaluate it, and make a reasoned determination whether it is of such significance as to require implementation of formal NEPA filing procedures. Reasonableness depends on such factors as the environmental significance of the new information, the probable accuracy of the information, the degree of care with which the agency considered the information and evaluated its impact, and *the degree to which the agency supported its decision not to supplement with a statement of explanation or additional data.*" (internal citations omitted)(emphasis added)).

addressed in individual licensing proceedings. Contrary to the ASLB's ruling in LBP-11-27, the admissibility of Petitioners' contentions was not disposed of by CLI-11-05.

B. LBP-11-27 is Based on a Misinterpretation of NEPA.

Petitioners also seek review of LBP-11-27 to the extent that it holds that information is not "new and significant" for purposes of NEPA consideration unless and until it is acted upon by the agency. *See* slip op. at 11 (expressing "considerable doubt" as to how the attribute of "new and significant" could be attributed to "a mere report that had neither received the endorsement of the Commission nor, more importantly, led to some concrete affirmative action being taken in light of its content.") Slip op. at 11. The Commission should take review of LBP-11-27 because such a reading of NEPA is "contrary to established law." 10 C.F.R. § 2.341(b)(ii). NEPA review is triggered by the release of "new and significant information," not by an agency's decision to consider and evaluate such information. 10 C.F.R. 51.92. Indeed, the purpose of NEPA is to force consideration and evaluation of relevant information that comes to the agency's attention. *Marsh*, 490 U.S. at 371 ("NEPA ensures that the agency will not act on incomplete information . . ."); *see also Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350-51 (1989) (describing requirement to prepare an environmental impact statement as "action-forcing.")

The ASLB's circular reasoning in LBP-11-27 would deprive NEPA of any action-forcing effect and therefore must be rejected. Instead, the Commission should require the ASLB to assess whether the Petitioners have raised a litigable claim, under an objective test of reasonableness, regarding the newness and significance of the Task Force Report. *South Trenton Residents Against 29 v. Federal Highway Administration*, 176 F.3d 658, 663 (3d Cir. 1999) ("[A]n agency's determination not to revise an Environmental Impact Statement must be

reasonable under the circumstances when viewed in the light of the mandatory requirements and high standards set by NEPA.ö) (quoting *Township of Lower Alloways Creek v. Public Serv. Elec. & Gas Co.*, 687 F.2d 732, 742 (3d Cir. 1982) (internal quotations and citations omitted)).

Petitioners respectfully submit that the Task Force's recommendation to completely overhaul the NRC regulatory structure, including redefining what level of protection of public health and safety should be regarded as adequate, easily surpasses the objective "new and significant" test because it "paints a seriously different picture of the environmental impact" of the licensing and re-licensing of nuclear reactors than before the release of the Task Force Report. *South Trenton*, 176 F.3d at 663; see also *Arkansas Wildlife Federation v. U.S. Army Corps of Engineers*, 431 F.3d 1096, 1102 (8th Cir. 2005).⁵

⁵ Even assuming for purposes of argument that the Task Force Report constitutes new and significant information only if its recommendations are adopted by the Commission, that condition has been fulfilled by SRM/SECY-11-0124, which directed the NRC Staff to "strive to complete and implement the lessons learned from the Fukushima accident within five years" by 2016.ö *Id.* at 1. While the SRM did not order the adoption of every single recommendation, it did endorse a significant number of them, including the sweeping Recommendation # 1 which would expand the scope of the adequate protection standard. Thus, the Commission has "accepted" the Task Force Report in significant respects. LBP-11-27, slip op. at 13.

IV. CONCLUSION

For the foregoing reasons, the petition should be granted and LBP-11-27 should be reversed.

Respectfully submitted this 2nd day of November, 2011.

Signed (electronically) by:

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UNITED STATES OF AMERICA
U.S. NUCLEAR REGULATORY COMMISSION
BEFORE THE COMMISSION

In the Matter of

Southern Nuclear Operating Co. (Vogtle Electric Generating Plant, Units 3 and 4)	)	Docket Nos. 52-025 & 52-026-COL ASLBP Nos. 11-912-02-COL-BD01 11-913-01-COL-BD01
Duke Energy Carolinas, L.L.C. (William States Lee III Nuclear Station, Units 1 and 2))	Docket Nos. 52-018 and 52-019 ASLBP No. 11-913-01-COL-BD01

CERTIFICATE OF SERVICE

I hereby certify that copies of the
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were served on the following persons via Electronic Information Exchange
this 2nd day of November, 2011

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Signed in Glendale Springs,
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A handwritten signature in black ink, appearing to read "Louis A. Zeller", followed by a horizontal line.

Louis A. Zeller
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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

Before the Licensing Board Panel:

Alan S. Rosenthal, Chair
Dr. Gary S. Arnold
Dr. William H. Reed

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

**MOTION TO REINSTATE AND SUPPLEMENT
THE BASIS FOR FUKUSHIMA TASK FORCE REPORT CONTENTION**

INTRODUCTION

Pursuant to 10 C.F.R. § 2.323(e), Center for a Sustainable Coast, Georgia Women's Action for New Directions f/k/a Atlanta Woman's Action for New Directions, and Southern Alliance for Clean Energy (collectively, "Intervenors") hereby move to reinstate and supplement the basis of their contention seeking consideration of the environmental implications of the Fukushima Task Force Report in a supplemental environmental impact statement for the proposed Plant Vogtle Units 3 and 4. *See* "Motion to Reopen the Record and Admit Contention to Address the Safety and Environmental Implications of the Nuclear Regulatory Commission Task Force Report on the Fukushima Dai-ichi Accident" (Aug. 11, 2011). The contention was rejected as premature by this Atomic Safety and Licensing Board ("ASLB") in LBP-11-27, Memorandum and Order (Denying Motions to Reopen Closed Proceedings and Intervention Petition/Hearing Request as Premature), __ NRC __ (Oct. 18, 2011).

Intervenors seek to supplement the contention's basis to assert that the Commissioners of the U.S. Nuclear Regulatory Commission ("NRC" or "Commission") have recognized the safety and environmental significance of the conclusions and recommendations of the Fukushima Task Force Report by issuing an order directing the NRC Staff to "strive to complete and implement the lessons learned from the Fukushima accident within five years – by 2016." SRM/SECY-11-0124, Memorandum from R.W. Borchardt, Executive Director for Operations to Annette L. Vietti-Cook, Secretary, re: Recommended Actions to be Taken Without Delay from the Near-Term Task Force Report (October 18, 2011) ("SRM/SECY-11-0124").¹ Intervenors also request the ASLB to rule that in light of SRM/SECY-11-0124, the contention is no longer premature under the standard established in LBP-11-27 and should be admitted.²

DISCUSSION

In LBP-11-27, the ASLB interprets the Commission's decision in *Union Electric Co. d/b/a Ameren Missouri* (Callaway Plant, Unit 2), et al., CLI-11-05, __ NRC __ (Sept. 9, 2011) to preclude admission of the Intervenors' contention because "it remains much too early in the process of assessing the Fukushima event in the context of the operation of reactors in the United States to allow any informed conclusion regarding the possible

¹ The SRM is posted on the NRC's website at <http://www.nrc.gov/reading-rm/doc-collections/commission/srm/2011/2011-0124srm.pdf>.

² Intervenors also wish to notify the ASLB that they believe that LBP-11-27 is based on an erroneous interpretation of the National Environmental Policy Act ("NEPA") and the Commission's decision in *Union Electric Co. d/b/a Ameren Missouri* (Callaway Plant, Unit 2), et al., CLI-11-05, __ NRC __ (Sept. 9, 2011), and therefore intend to petition the Commission for review of LBP-11-27. Intervenors will request the Commission to hold their petition for review in abeyance pending the outcome of this motion. See, e.g., *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-01-1, 53 NRC 1, 3 (2001) (citing *International Uranium Corp.* (White Mesa Uranium Mill), CLI-97-9, 46 NRC 23, 24-25 (1997)).

safety or environmental implications of that event regarding such operation.” *Id.* at 13.

LBP-11-27 indicates, however, that the ASLB would consider the contention to be admissible if and when the Commission adopts the Task Force recommendations:

It is difficult to fathom how the Commission could have stated more precisely and definitively that it remains much too early in the process of assessing the Fukushima event in the context of the operation of reactors in the United States to allow any informed conclusion regarding the possible safety or environmental implications of that event regarding such operation. *Of still greater importance given [the Intervenor’s] entire reliance on the findings and recommendations of the Task Force, the Commission stressed with equal force and clarity that, while under active study, none of those findings and recommendations has been accepted.* Thus, they scarcely have been given the effect that, according to [the Intervenor], gives rise to the environmental implications that undergird the contention that is sought to be admitted.

Id. (emphasis added).

Intervenors respectfully submit that the ASLB’s condition for admission of the contention is satisfied by a Staff Requirements Memorandum (“SRM”) that was issued by the Commission on October 18, 2011, the same day that LBP-11-27 was issued. *See* SRM/SECY-11-0124.³ In SRM/SECY-11-0124 the Commission ordered the NRC Staff to “strive to complete and implement the lessons learned from the Fukushima accident within five years – by 2016.” While the SRM did not order the adoption of every single recommendation, it did endorse a significant number of them, including the sweeping Recommendation # 1 which would expand the scope of the adequate protection standard. Thus, the Commission has “accepted” the Task Force Report in significant respects. LBP-11-27, slip op. at 13.

Therefore Intervenors request the ASLB to take the following actions:

- order the reinstatement of the contention;

³ There is no indication in LBP-11-27 that the ASLB was aware of the issuance of SRM/SECY-11-0124 at the time it issued LBP-11-27.

- permit the supplementation of the contention's basis to include (in addition to the language of the Task Force Report itself and the Declaration of Dr. Arjun Makhijani) SRM/SECY-11-0124 as an indication of the significance of the Task Force Report's conclusions and recommendations; and
- rule on the admissibility of the reinstated and revised contention in light of SRM/SECY-11-0124.

CONCLUSION

For the foregoing reasons, the Intervenor's motion should be granted.

CERTIFICATE PURSUANT TO 10 C.F.R. § 2.323(b)

Intervenor's certify that on October 27, 2011, we contacted counsel for the applicant and NRC Staff and attempted to resolve the issues raised by this motion. Counsel for the applicant opposed the motion. While counsel for the NRC Staff did not object to the filing of the motion on procedural grounds, it reserved judgment on the motion and will respond in due course.

Respectfully submitted this 28th day of October, 2011.

/signed (electronically) by/

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of

SOUTHERN NULCEAR OPERATING
COMPANY (Vogtle)

PPL BELL BEND, LLC (Bell Bend Nuclear
Power Plant)

LUMINANT GENERATION COMPANY
(Comanche Peak Nuclear Power Plant, Units
3 and 4)

ASLBP No. 11-914-02-COL-BD01

Docket Nos. 52-025 and 52-026-COL

Docket No. 52-039-COL

Docket Nos. 52-034-COL and 52-035-COL

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing **MOTION TO REINSTATE AND SUPPLEMENT THE BASIS FOR FUKUSHIMA TASK FORCE REPORT CONTENTION** were served upon the following persons by Electronic Information Exchange and/or electronic mail.

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October 18, 2011

MEMORANDUM TO: R. W. Borchardt
Executive Director for Operations

FROM: Annette L. Vietti-Cook, Secretary */RA/*

SUBJECT: STAFF REQUIREMENTS – SECY-11-0124 – RECOMMENDED
ACTIONS TO BE TAKEN WITHOUT DELAY FROM THE NEAR-
TERM TASK FORCE REPORT

The Commission has approved the staff's proposed actions to implement without delay the Near-Term Task Force recommendations as described in SECY-11-0124, subject to the comments below.

The NRC should strive to complete and implement the lessons learned from the Fukushima accident within five years - by 2016.

The process for implementing new or modified regulatory requirements or programs should be transparent and the regulatory mechanism (e.g., order, rulemaking, 10 CFR 50.54(f) letter, generic letter, etc.) used to impose them should be as clear and specific as possible when issued.

As the staff evaluates Fukushima lessons-learned and proposes modifications to NRC's regulatory framework, the Commission encourages the staff to craft recommendations that continue to realize the strengths of a performance-based system as a guiding principle. In order to be effective, approaches should be flexible and able to accommodate a diverse range of circumstances and conditions. In consideration of events beyond the design basis, a regulatory approach founded on performance-based requirements will foster development of the most effective and efficient, site-specific mitigation strategies, similar to how the agency approached the approval of licensee response strategies for the "loss of large area" event under its B.5.b program.

Where gaps in knowledge in the analyses of the reactor accidents at Fukushima Dai-ichi interfere with the staff's ability to make an informed recommendation on regulatory action, the staff should inform the Commission of these gaps.

For Recommendation 2.1, when the staff issues the requests for information to licensees pursuant to 10 CFR 50.54(f) to identify actions that have been taken or are planned to address

plant-specific vulnerabilities associated with the reevaluation of seismic and flooding hazards, the staff should explain the meaning of "vulnerability."

The staff should inform the Commission, either through an Information Paper or a briefing of the Commissioners' Assistants, when it has developed the technical bases and acceptance criteria for implementing Recommendations 2.1, 2.3, and 9.3.

For NTTF recommendations 4.2 and 5.1 the staff should provide the Commission with notation vote papers for Commission approval of the orders once the staff has engaged stakeholders and established the requisite technical bases and acceptance criteria. For cases in which backfits cannot be justified using existing requirements, yet the staff believes that regulatory enhancements should be made, the staff should clearly explain the legal and policy bases for proceeding.

For Recommendation 4.1 -- "Station blackout regulatory actions," the staff should initiate the rulemaking as an advance notice of proposed rulemaking (ANPR) rather than a proposed rule.

The staff should designate the station blackout (SBO) rulemaking associated with NTTF recommendation 4.1 as a high-priority rulemaking with a goal of completion within 24 to 30 months of the date of the Staff Requirements Memorandum for this SECY paper.

The staff should monitor nuclear industry efforts underway to strengthen SBO coping times and consider whether any interim regulatory controls (e.g., commitment letters or confirmatory action letters) for coping strategies for SBO events would be appropriate while rulemaking activities are in progress.

Concerning the potential to redefine what level of protection of public health and safety should be regarded as adequate, the Commission reaffirms its guidance to the staff in the SRM on SECY-11-0093 with respect to Recommendation 1.

cc: Chairman Jaczko
Commissioner Svinicki
Commissioner Apostolakis
Commissioner Magwood
Commissioner Ostendorff
OGC
CFO
OCA
OPA
Office Directors, Regions, ACRS, ASLBP (via E-Mail)
PDR

	Nuclear Regulatory Commission	
	Exhibit # - SNCR00011-MA-CM01	
	Docket # - 05-10002-1065200026	
	Identified: 11/01/2011	
Admitted: 11/01/2011		Withdrawn:
Rejected:		Stricken:

SNCR00011

**UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
BEFORE THE COMMISSION**

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In the Matter of)	Docket Nos. 52-025-COL and 52-026-COL
)	
Southern Nuclear Operating Company)	
)	
(COL Application for Vogtle Electric	)	October 17, 2011
Generating Plant, Units 3 and 4))	
<hr/>)	

**SOUTHERN NUCLEAR OPERATING COMPANY’S RESPONSE
TO THE COMMISSION’S ORDER OF OCTOBER 6, 2011**

On October 6, 2011, the Nuclear Regulatory Commission (“Commission” or “NRC”) issued the “Order (Supplemental Responses and Post-Hearing Questions)” providing a listing of questions for which written follow-up was requested or offered during the mandatory hearing for the Vogtle Units 3 and 4 combined license application (“COLA”)¹ and associated request for a Limited Work Authorization (“LWA-B”).² Pursuant to the Order, Southern Nuclear Operating Company (“SNC”) hereby responds to the Commission’s questions. SNC provides written follow-up to Items G and L, as well as answers to Questions 1, 2, 7, 8, 9, 12, 13 and 14.

As noted in SNC’s Response to the Commission’s Order of August 31, 2011 (filed September 13, 2011), to the extent practicable and consistent with providing full and complete answers to the Commission’s questions, SNC has attempted to include information in its

¹ Acronyms not defined herein are those provided in the Order, at note 1.
² Order (Supplemental Responses and Post-Hearing Questions), Docket Nos. 52-025-COL & 52-026-COL (Oct. 6, 2011) (“Order”).

Response: The Applicant provides the following statement in response to the first question identified above, i.e., “How will the Applicant reconcile differences between the feedwater flow venturi and the LEFM if they are not consistent?” The remaining questions are understood to be directed to the NRC Staff.

The feedwater system LEFMs are specified to provide a maximum uncertainty of $\pm 0.5\%$ of mass flow rate. The mass flow rate calculated by the LEFM is used to normalize the high range venturis. As such, the LEFM feedwater mass flow rate will be used as the primary input for the calorimetric calculation, and the normalized high range venturi feedwater mass flow rate will be used as a secondary input to the calorimetric calculation in the event of a degraded LEFM signal. Absent any fouling or erosion of the venturi piping, the LEFM and venturi flow meters are expected to correlate nearly one to one at high power, steady state operation. Therefore, the initial value of the normalization factor is expected to be approximately 1 (i.e., $N_F = W_{LEFM} / W_{Venturi} = 1$), where N_F is the normalization factor, W_{LEFM} is the LEFM mass flow rate, and $W_{Venturi}$ is the venturi mass flow rate).

The normalization factor is calculated for each LEFM-venturi set at 1 minute intervals, while operating at greater than 70% rated thermal power. When the normalization factor differs from its programmed value by a predetermined amount, the calorimetric program provides an input to the Plant Control System for generating an alarm in the main control room and at the remote shutdown workstation. The alarm indicates the normalization factor is outside expected limits and requires operator action to address the issue.

Potential sources creating differences between the LEFM mass flow rate and the venturi mass flow rate include, but are not limited to: 1) a faulted Main Feedwater System temperature and/or pressure sensor; 2) a faulted LEFM transducer; and 3) a change in pipe geometry (e.g., venturi fouling, pipe dimensions, alignment, thermal expansion, etc.). A change in any of the parameters above would affect the LEFM mass flow rate, the venturi mass flow rate, or potentially both. The operator is expected to review all appropriate parameters and determine the cause of the difference between the two flow rates. Once a determination has been made, the appropriate actions can be implemented to reconcile the difference between the measurements (e.g., remove the LEFM from service for maintenance, remove a sensor from service for maintenance, recalculate the normalization factor, etc.).

<u>No.</u>	<u>Category</u>	<u>Reference</u>	<u>Directed To</u>	<u>Question</u>
14	Environmental	Tr. at 325-26	Applicant	Please describe your analysis of the environmental impacts of the Fukushima events. Identify the relevant information you drew from the task force report and any other sources and describe your analysis of that information and your conclusions.

Response: SNC uses the New and Significant Process as described in Response to Question 35(c) provided in SNC’s September 13, 2011 filing to the Commission’s Order of August 31,

2011 for evaluating whether information available since the Vogtle ESP Environmental Impact Statement (EIS) is New and Significant.

The Fukushima event that occurred March 11, 2011 was a tragic and unexpected event that has been the topic of much discussion and investigation. As information became available, SNC considered whether the information warranted inclusion in the New and Significant Process. Since the event, SNC reviewed available information in the form of media articles, information released by the NRC, such as memorandums and the Task Force Report. Based on the totality of our review, SNC determined the Fukushima event consisted primarily of two incidents: first, the natural phenomena or initiating event (earthquake and tsunami) and second, the severe accident.

After screening available information, SNC determined that no documented “New and Significant” evaluation of the Fukushima event was necessary because the event did not screen in to the process as “new” information under 10 C.F.R. § 51.50(c)(1) as defined by SECY2006-0220. According to SECY2006-0220, for information to be new it must be both:

- (1) not considered in preparing the ESP environmental report or EIS (as may be evidenced by references in these documents, applicant responses to NRC requests for additional information, comment letters, etc.) and
- (2) not generally known or publicly available during the preparation of the EIS (such as information in reports, studies, and treatises).

The following paragraphs explain the logic.

As previously indicated, the Fukushima event consisted of the natural phenomena that were the initiating events (earthquake and tsunami) and the severe accident. Both were considered during the VEGP ESP review and included in the COL. Specifically, natural phenomena with the potential to impact the site (*e.g.*, probable maximum flood, dam breaks, seismology, etc.) are described in the ESP Safety Evaluation Report in Sections 2.4 and 2.5. The environmental consequences of severe accidents are evaluated in the ESP EIS in Section 5.10 for single unit accidents and Section 7.9 for cumulative impacts of severe accidents. The COL Supplemental EIS concluded there was no available New and Significant information at the time it was published and the conclusions in the ESP EIS remained valid.

For the EIS severe accident assessment, the consequences of an accident are considered independently of the initiating event. This analytical approach is consistent with the guidance in NUREG 1555, Environmental Standard Review Plan, which was used to develop the Vogtle Units 3 and 4 environmental impacts of postulated accidents involving radioactive materials.

No information available from the NRC Task Force Report indicates that the earthquake or tsunami in Japan could invalidate the assumptions utilized in either the Vogtle FSAR or the ESP Final EIS and COL Final Supplemental EIS.

EISs are detailed documents required by the National Environmental Policy Act (NEPA) (Section 102(2)(c)) and prepared for all major Federal Actions that significantly impact the human environment (40 C.F.R. § 1508.11). Specific to the requirements of NEPA, an EIS must

identify all indirect effects that are known, and make a good faith effort to explain the effects that are not known but are “reasonably foreseeable” (40 C.F.R. § 1508.8(b)).

SNC believes that initiating events such as those in Japan are not “reasonably foreseeable” at the VEGP location, based on the analysis of VEGP specific site characteristics done for the ESP and COL, and that severe accidents for the selected reactor technology (AP1000) have been evaluated in the VEGP EIS. Similarly, the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident states that, “a sequence of events like those occurring in the Fukushima accident is unlikely to occur in the United States...” and, that “the AP1000 design has many of the design features and attributes necessary to address the Task Force recommendations.”

Additionally, SNC is providing related clarification to the discussion responding to a question regarding the impact analysis of an accident involving multiple units at a single site during the environmental question and answer portion of the Mandatory Hearing Environmental Panel 1 on September 28, 2011. The question and answer are recorded immediately after the exchange referenced in Item M at p. 328 lines 23-25 and p. 329 lines 1-12. Because this question and answer overlaps with discussion related to the New and Significant consideration SNC undertook with respect to Fukushima (*see* p. 329 lines 10-12), SNC includes this clarification with this response to Question 14.

The overall risk to the public from the four unit site was discussed in the ESP EIS (Section 7.9). The risks described in Section 7.9 of the ESP EIS do include the potential, however extremely remote, that two or more reactors could experience concurrent accidents caused by different, independent events. However, the cumulative dose to the population from a severe accident involving multiple units at a single site was not evaluated in the ESP Environmental Report developed by SNC.

The cumulative impacts of a severe accident presented in Section 7.9 of the ESP EIS are derived by combining the four estimated reactor population dose risks for each reactor at or planned at VEGP. The cumulative impact is presented as the summation of the Population Dose Risks associated with a severe accident at each of the units. However, regarding the risk from multiple unit accidents, the EIS discussion assumes the risk from the reactors are independent, meaning that there is no credible event or series of events that could increase the likelihood of multiple concurrent accidents. This simplified analysis recognizes the dominant effect of adding units to an existing site (*e.g.*, that the risk to the population is essentially a multiple of the number of reactors at the site). The population dose risk of an accident from a single reactor was discussed in Section 5.10.2, *Severe Accidents*, of the ESP EIS.

The severe accident impact analysis results in a measure of the Population Dose Risk, which considers the radiation exposure, or dose (consequences) to the population, and the frequency of the accident.

The risk from concurrent accidents would be a function of two factors, the increased consequences to the public caused by larger potential inventory of radionuclides, combined with the lower frequency of multiple unit accidents. It is reasonable to expect that for a site having Vogtle’s limited **external hazard** exposure the risk to the public would remain dominated by the risk from an accident at any single unit. Therefore, the cumulative severe accident impact to population dose risk associated with four reactors at Vogtle remains SMALL.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE COMMISSION

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

NRC STAFF RESPONSES TO COMMISSION POST-HEARING QUESTIONS

Pursuant to the Commission's Order (Supplemental Responses and Post-Hearing Questions) of October 6, 2011, the staff of the U.S. Nuclear Regulatory Commission ("Staff") hereby responds to the questions posed in that Order. These questions provide supplemental responses to questions posed by the Commissioners during the hearing as well as answers to additional post-hearing questions.

The Commission's Order directed some questions to the Staff, some to Southern Nuclear Operating Company ("Applicant," "SNC"), and some to both. Attachment A to this filing presents the Staff's responses. Where a question was directed to both the Staff and Applicant, the Staff's response is included in the attached; however, where a question or sub-question was directed solely to the Applicant, the Staff accordingly has not provided a response.

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Dated at Rockville, Maryland
This 17th day of October, 2011

Item N

Environmental Panel, 1 p. 335, lines 10-25; p. 336, lines 1-5

For the severe accidents analyzed in the EIS evaluation and the assumed radiological releases, is it correct that the staff does not expect to see radiological impacts similar to those seen following the accident at Fukushima?

Staff Response:

The staff's examination of severe accidents does consider accidents that, like Fukushima, are assumed to involve radiological releases to the environment. However, to comport with the Commission's policy and NEPA's required focus on reasonably anticipated environmental impacts rather than "worst-case" scenarios, the staff's environmental evaluation of severe accidents considers impacts by evaluating probability-weighted consequences. Because of the potentially high consequence but extremely low probability of such accidents, looking at the consequences without accounting for risk would distort the purpose of disclosing the reasonably anticipated impacts of the project. Because of this framework, while it is clear that severe accidents such as that experienced at Fukushima are potentially high-consequence events, the staff's conclusion in the EIS examines those consequences in terms of risk.

The staff assesses the environmental impacts from severe accidents in terms of its health effects, economic costs, and land affected by contamination (e.g., rem/Ryr, \$/Ryr, ac/Ryr). Just as important, the Commission's 1985 Policy Statement on Severe Reactor Accidents Regarding Future Designs and Existing Plants directs the staff to describe the impacts from severe accidents in the context of risk. In the case of the Fukushima event, the staff has not completed a PRA or other quantitative analysis of such a multi-unit event occurring as part of the AP1000 design certification probabilistic risk assessment and the safety review of accidents documented in Chapter 19 of the Final Safety Evaluation Report for the Vogtle site. However, as explained above in response to Item M, the staff's analysis documented in the Vogtle COL SEIS (tiering off of the ESP FEIS) considered a range of severe accident scenarios and the associated releases and consequences. Moreover, the Fukushima Daiichi units are BWR-3 and BWR-4 plants with Mark I containments, and as explained in the ESP FEIS, risks calculated for the Westinghouse AP1000 reactor design at the Vogtle site are expected to be lower than those for current-generation plants, supporting the staff's conclusion that the severe accident risks at Vogtle remain SMALL.

Item O

Environmental Panel, 1 p. 336, lines 24-25; p. 337, lines 1-13

In its environmental analysis of severe accidents initiated by an external event, is the staff's impact conclusion based only on the radiological consequences of the accident, rather than the impacts of both the accident and any other damage in the vicinity just from the external event itself?

Staff Response:

The EIS impact conclusion regarding severe accidents does not consider the impact of any other damage in the vicinity caused by the external initiating event (e.g., an earthquake),

Table 2 – POST-HEARING QUESTIONS**Question 1:**

In the event the Commission decides to impose a license condition requiring implementation of all Commission approved recommendations from the near-term task force report, what language would you recommend?

Staff Response:

If the Commission decides that license conditions to implement Fukushima Near-Term Task Force (NTTF) recommendations are necessary to support issuance of the Vogtle combined licenses, the staff agrees that such conditions may be viable regulatory tools. The NTTF recommendations relevant to COL applications are directed to a relatively narrow set of technical issues, which are not already addressed within the scope of the AP1000 design. The relevant NTTF recommendations relate to enhancing onsite emergency response capability and emergency planning. Accordingly, any resulting conditions would be focused on these particular considerations. However, for reasons explained below, including the Commission's precedent regarding the appropriate use of license conditions, and consistent with the information provided in SECY-11-0137 (Oct. 3, 2011), the staff does not have sufficient information to propose such conditions at this time. The viability of any specific language would depend on what recommendations obtain Commission approval and how they are to be implemented. Following those determinations, the staff is confident that it could develop specific license conditions responsive to the Commission's instructions.

It is important to note at the outset that the Vogtle application meets all current regulatory requirements, and the staff continues to conclude that the application provides reasonable assurance of adequate protection of the public health and safety. For that reason, the staff concluded that the COLs could be issued, without the need for any new license conditions associated with the Fukushima NTTF recommendations. That is why the staff has acknowledged that the Commission can proceed to authorize issuance of the licenses and use existing regulatory approaches if the Commission's ultimate action to implement some or all of the NTTF recommendations does warrant modification of any issued licenses. This approach would provide adequate mechanisms to address regulatory changes the Commission subsequently determines are necessary. As explained in the staff's SECY information paper [SECY-11-0110, Staff Statement in Support of the Uncontested Hearing for Issuance of Combined Licenses and Limited Work Authorizations for Vogtle Electric Generating Plant (VEGP), Units 3 and 4 (Docket Nos. 52-025 and 52-026)], such future modifications would remain subject to applicable finality provisions under 10 CFR Part 52.

However, as emphasized above, if the Commission's view is that additional steps need to be taken now to support the findings for COL issuance, the staff agrees that regulatory controls could be imposed on the license before issuance, including use of license conditions. That said, the specific language and the legal viability of such conditions is dependent both on the exact recommendations that the Commission would choose to implement, the nature of how the Commission would seek to apply it to the COL applicant, and the basis given for implementing the particular recommendation. Neither of those has been determined at this time.

While Commission precedent does allow for reliance on license conditions, such conditions must be "precisely drawn so that the verification of compliance becomes a largely ministerial

rather than an adjudicatory act.” See *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-00-13, 52 NRC 23, 34 (2000). The Commission has further stated that “the mechanism of post-hearing resolution must not be employed to obviate the basic findings prerequisite to an operating license – including a reasonable assurance that the facility can be operated without endangering the health and safety of the public.” *Consolidated Edison Co.* (Indian Point Station, Unit 2), CLI-74-23, 7 AEC 947 (1974). Thus, any license condition must be drafted in such a way that the means of compliance with it can be objectively determined at the time the license is issued. Likewise, any license condition must be drafted such that it could not be interpreted as evidence that the staff does not have reasonable assurance of adequate protection of the public health and safety at the time the COL is issued. In short, a license condition could not simply be a generalized “placeholder” binding the licensee to agree to implemented unspecified future Fukushima-related recommendations. Accordingly, it would be difficult to draft a license condition in the absence of specific guidance from the Commission regarding what NTTF recommendations are to be implemented and what those recommendations would require a licensee to do (or provide).

The Fukushima NTTF specified certain aspects of its recommendations that it indicated would be applicable for near-term COL applications. Furthermore, the staff has provided its input on prioritizing the implementation of these recommendations in SECY-11-0137. These NTTF recommendations applicable to the Vogtle COL are:

- Enhance onsite emergency response capability through the integration of emergency operating procedures, severe accident management guidelines, and extensive damage mitigation guidelines; and
- Enhance emergency planning to address prolonged station blackout and multi-unit accidents.

The ultimate Commission determination on how to implement one of these Fukushima-related recommendations might be, for example, to require a licensee to implement a particular management guideline or operating procedure. With that kind of more detailed and objective instruction, the staff would likely have sufficient information to draft a viable license condition that could be added to a COL now as a prerequisite to issuance. Such a condition could require the specific change or addition to be made by a particular time - for example, prior to fuel load.

As explained in its response to the Commission’s prehearing questions, assuming such specific Commission direction regarding the form of such Fukushima-related recommendations, the Staff anticipates that preparing an appropriate combination of license conditions would be a relatively straightforward process. That process would entail information gathering and coordination of technical experts, as well as appropriate communication with the applicant, and would likely take time on the order of weeks.

However, as is evident in the Staff’s recent response to the Commission in SECY-11-0137 regarding which Fukushima-related recommendations to prioritize, the specific nature of the enhancements that would result from these recommendations is not yet determined. For example, the staff paper indicated that stakeholder involvement would be an important prerequisite to developing the content of the rulemakings that it recommended the Commission undertake. As stated previously, the staff believes that once the parameters of the recommendations are established, development of a license condition could be relatively straightforward. But without those objective parameters, imposing a broad “placeholder” license condition would not be compatible with the Commission’s precedent for license issuance.

September 29, 2011

UNITED STATES OF AMERICA
U.S. NUCLEAR REGULATORY COMMISSION
BEFORE THE COMMISSION

In the Matter of)	
AP1000 Design Certification Amendment	)	NRC-2010-0131
10 CFR Part 52	)	RIN 3150-A181

SUPPLEMENTAL COMMENTS BY THE AP1000 OVERSIGHT GROUP ET AL.
REGARDING FAILURE OF RULEMAKING ON CERTIFICATION

NOW COME the AP1000 Oversight Group, the North Carolina Waste Awareness and Reduction Network (NC WARN) and Friends of the Earth (collectively the “Oversight Group”) with supplements comments regarding the failure of the rulemaking on the certification of the AP1000 reactor design and operating procedures, Docket NRC-2010-0131, and raising the issue of thermal loading in the rulemaking record.

In its Memorandum and Order, CLI-11-05, September 9, 2011, the Commission addressed the Oversight Group’s concerns by referring its comments and petitions to the Staff to be resolved in the Rulemaking Docket, NRC-2010-0131. In its Order the Commission ruled that

[we] *Refer* to the NRC Staff those elements of the Petition that relate specifically to design certification, for consideration as rulemaking comments. *Refer* to the NRC Staff for resolution as comments in the AP1000 rulemaking proceeding, all additional filings relevant to the AP1000 rulemaking proceeding.

The Oversight Group has diligently submitted comments into the rulemaking record as issues affecting the safety and reliability of the AP1000 reactors. In addition to other comments in the rulemaking record, we urge the Commission and the NRC Staff to review the following:

- On April 6, 2011, the Oversight Group filed its Petition to Suspend AP1000 Design Certification Rulemaking Pending Evaluation of Fukushima Accident Implications on Design and Operational Procedures and Request for Expedited Consideration.
- On April 20, 2011, the Oversight Group filed additional comments in conjunction with the Emergency Petition regarding the Fukushima lessons learned filed in the various licensing and rulemaking dockets. On May 9, 2011, the Oversight Group filed a reply to the NRC and industry responses to the Emergency Petition.
- On May 10, 2011, the Oversight Group filed comments that included reports by Union of Concerned Scientists, "Safer Storage of Spent Nuclear Fuel: The Problems of Spent Fuel Pools"; the statement of David Lochbaum, Union of Concerned Scientists, to the U.S. Senate Energy and Natural Resources Committee; Alvarez et al., "Reducing the Hazardous from Stored Spent Power-Reactor Fuel in the United States"; Thompson, "Robust Storage of Spent Nuclear Fuel: A Neglected Issue of Homeland Security"; and National Academies of Science, "Safety and Security of Commercial Spent Nuclear Storage (Public Report)."
- On May 10, 2011, Friends of the Earth filed comments on behalf of itself and Fairewinds Associates.
- On May 24, 2011, the Oversight Group filed additional comments the Markey report, Chairman Jaczko's Statement on Fukushima of May 20, 2011 and news reports on the Fukushima accident.
- On June 16, 2011, the Oversight Group filed a Request to Reexamine the Rulemaking on Certification of AP1000 Reactors and Declare it Null and Void based on unresolved problems with the AP1000 design and operations, the Ma Nonconcurrence (redacted version), the changes in Revision 19 and the

Fukushima “lessons learned.”

- On August 11, 2011, the Oversight Group filed Supplemental Comments by the AP1000 Oversight Group et al. Regarding NEPA Requirement to Address Safety and Environmental Implications of the Fukushima Task Force Report, supported by a declaration of Arjun Makhijani, Institute for Energy and Environmental Research.

These earlier comments and petitions were submitted in the rulemaking docket and with the Commission, and are adopted herein by reference.

I. INTRODUCTION AND SUMMARY.

The Oversight Group provides the supplemental comments herein to describe the failure of the rulemaking process for the certification of the AP1000 reactor.¹ Initially the NRC expected the final design would be certified prior to the final reviews of the combined operating licenses (COLAs). See *Backgrounder on New Nuclear Plant Designs*.² This has not occurred as the certification process has become bogged down by design changes, unresolved issues and rapidly escalating costs to meet even basic safety considerations. The process has been excessively, even arbitrarily, fluid as Westinghouse-Toshiba has submitted various revisions to the Design Control Document (DCD) for the AP1000 reactor over the past five years and as noted in our earlier filings in this docket, still has not begun to address the Fukushima “lessons learned” in any meaningful way. The NRC staff review and review by the Advisory Committee on Reactor Safeguards (ACRS) have not been able to address critical issues in a timely manner, especially as Westinghouse-Toshiba has changed the design and operating procedures repeatedly over the past five years.

¹ Additional information on the AP1000 DCD is available at www.nrc.gov/reactors/new-reactors/design-cert/amended-ap1000.html

² www.nrc.gov/reading-rm/doc-collections/fact-sheets/new-nuc-plant-des-bg.html

On January 27, 2006, the Commission issued the final design certification rule AP1000 design, DCD Revision 15, in the Federal Register, 71 FR 4464, and adopted the rule on March 10, 2006. Applicants or licensees intending to construct and operate a plant based on the AP1000 design could do so by referencing the rule as set forth in 10 CFR Part 52, Appendix D. However, on May 26, 2007, Westinghouse-Toshiba submitted a Revision 16 of the AP1000 DCD; on September 22, 2008, Westinghouse-Toshiba updated its application with Revision 17; on October 14, 2008, Westinghouse-Toshiba provided the DCD Revision 17; on December 1, 2010, Westinghouse-Toshiba submitted DCD Revision 18; and on June 13, 2011, Westinghouse-Toshiba submitted DCD Revision 19. It is important to note the current certification rulemaking in Docket NRC-2010-0131 is on the AP1000 Revision 18 but subsequent to the end of the comment period on the rulemaking, May 10, 2011, Westinghouse-Toshiba submitted Revision 19 containing 100's of substantive changes to Tier 1 and Tier 2 components from Revision 18. ATTACHED. The Revision 19 changes have not been part of the certification rulemaking process to date.

Not only has the certification process constantly changed, recent actions to accelerate the certification process have called into question the ultimate results of the process. Pressure has apparently increased in order to certify the AP1000 reactors so combined operating licenses ("COLs") can be issued. In an August 5, 2011, letter from the NRC's Office of New Reactors to Westinghouse-Toshiba, the NRC said that "the final rulemaking package [for the AP1000] is in preparation, and is expected to be provided to the Commission for their deliberation no later than October 5, 2011, and the projected time frame for publication of the final rule in the Federal Register is January 2012." The NRC staff response to public comments apparently will not be provided to the public prior to the Commission decision. The NRC staff even requested the ACRS to waive its authority to sign off on the latest DCD revision so that the Commission could certify the design. As noted above, on May 10, 2011, Westinghouse-Toshiba filed

Revision 19, and yet only 85 days later, on August 5, 2011, the NRC issued a Final Safety Evaluation Report (FSER) which purported to address the Revision 19 changes.³ Expediting the process near its end – and at the same time ignoring safety concerns – shows the failure of the certification process to date. The Oversight Group contends that public health and safety necessitate that all problems must be addressed before the reactor is "certified" by the NRC and not during construction.

On September 19, 2011, the ACRS sent a letter to Chairman Jaczko signing off on the AP1000 reactors yet at the same time discussed concerns related to the shield building, the passive cooling system tank, seismic and thermal load combination, radiative effects on thermal loads (see discussion below), inclusion of design details in the DCD, the containment accident pressure analysis, radiative effects on containment evaluation model validation and the reactor coolant pump testing.⁴ These issues, and other changes between DCD Revisions 18 and 19, have not been subject to a rulemaking process and the Commission cannot certify the AP1000 design and operating procedures without availing the public with the opportunity to comment on Revision 19.

As demonstrated by the comments and petitions by the Oversight Group, the Fukushima accident requires a further reexamination of the AP1000 reactor design and operating procedures. As a result, the Oversight Group fully expects a DCD Revision 20 containing significant changes required from the Fukushima lessons learned to be forthcoming. As described in Lyman, *Surviving the One-Two Nuclear Punch: Assessing Risk and Policy in a Post-Fukushima World*, Union of Concerned Scientists, September 19, 2011, the AP1000 design would not have been an advantage in a Fukushima-type

³ FSER Related to Certification of the AP1000 Standard Plant Design, Docket No. 52-006, NUREG-1793 Supplement 2, August 5, 2011. ADAMS No. ML112061231.

⁴ ACRS, Revision 19 to the AP1000 Design Control Document and the AP1000 Final Safety Evaluation Report, September 19, 2011. ADAMS No. ML11256A180.

scenario. ATTACHED. Directly contrary to the long-standing process of certified design before issuance of the COL, the process suggested in the NRC Task Force 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 pushes the Fukushima lessons learned into the COL stage rather than resolved at the certification stage; each reactor then becomes a prototype as case-by-case review of potential design and operational changes are made after construction begins. The legal and policy question is whether changes stemming from the NRC review process of the Fukushima accident will occur after any of the reactors planning to utilize the AP1000 design receives its combined operating license.⁵

As demonstrated in the earlier comments and petitions by the Oversight Group, the safety issues related to the DCD Revision 18 and the earlier versions were glossed over. As an example, one of the ACRS's fundamental concerns about Revision 18 was the possibility of debris clogging up the "passive" water circulation system. Westinghouse-Toshiba relies on its claim that operators could "walk away" from an AP1000 accident due to its passive emergency cooling systems. This claim is seriously flawed as an earthquake, attack or loss of coolant accident could destroy those systems, including the water tanks on top of the reactor, and as the Fukushima accident demonstrated, debris could include the entire supporting structures and even the water tanks themselves, rendering the passive system inoperable. See Lyman, *supra*, p. 52.

In its comments and petitions, the Oversight Group presented several unresolved

⁵ The primary reactor applications being actively pursued using the AP1000 reactors are Plant Vogtle in Georgia, and the V.C. Summer reactor in South Carolina. Even without certification of the reactor design or licensing approval for the specific project, the companies are now being allowed to assemble the reactors' containments. Because of the nuclear financing laws in those states and the United States taxpayer loan guarantee for the Vogtle reactor, these reactors put federal taxpayers and state electricity customers at risk of massive cost overruns and project abandonment. The subsequent structural changes expected from Fukushima lessons learned will compound the cost factors.

issues with the DCD Revision 18, some of which were structural problems with the AP1000 design and others related to the Fukushima reactor:

- the fundamental design flaw with the AP1000 design, by which radioactive steam in some scenarios is vented directly into the environment through cracks and through holes in the containment structures.
- the brittleness of the concrete containment structures, as evidenced in the Nonconcurrence of Dr. John Ma.
- the inability of the shield building to withstand external forces, ranging from tornadoes and earthquakes to airplane crashes and terrorist attacks.
- the vulnerability of spent fuel pools, amplified by high density racking
- the lack of adequate emergency planning.
- the lack of consideration of severe accidents, i.e., beyond design basis accidents.

These issues were not resolved in the lately-filed DCD Revision 19, and the cursory review of that revision by the NRC staff demonstrates the failure of the certification process to date.

II. New Issue – Thermal Loading.

The shield building design is flawed as thermal loading has not been properly analyzed by Westinghouse-Toshiba or the NRC staff as part of its containment accident pressure analysis. One of the significant changes between DCD Revisions 18 and 19 stemmed from the result of the NRC staff requirement that Westinghouse-Toshiba recalculate pressure in the containment structures. Westinghouse-Toshiba has kept these calculations proprietary so the Oversight Group does not know the assumptions going into the calculations, although assumptions both increasing and decreasing the calculated pressure were made in DCD Revision 19.⁶ The conclusion of the

⁶ See also ACRS discussion in its letter of September 19, 2011, referenced in footnote 4 above.

Westinghouse-Toshiba calculations was that the pressure in the containment fell barely below the maximum design pressure limit of 59 psig, resulting in little margin for error. It is apparent that modeling assumptions, such as finding that metal grates were "new heat sinks," were changed over several computer runs to come in under the wire.

The issue of radiative effects on thermal loads was presented to the ACRS by Dr. Susan Sterrett at the ACRS subcommittee meeting of August 16, 2011 and the ACRS meeting of September 8, 2011, and in comments to the ACRS. ATTACHED, Transcript to the September 8, 2011 meeting of the ACRS, pp. 251-269, 490-512. At the ACRS meeting, Dr. Sterrett, a former design engineer for Westinghouse-Toshiba, indicated that the pressure calculations in DCD Revision 19 appear to disregard a significant component to the integrity of the shield building, i.e., thermal changes caused by solar heating and nighttime cooling. This is crucial because the AP1000 reactors have only been referenced by the utilities in the Southeastern states, where both daily and seasonal heat differentials are a reality. Dr. Sterrett demonstrated that the heat loading of the shield building could result in weakness and failure under external stresses, such as an earthquake, and could cause the reactor containment to exceed maximum design pressure during various accident conditions. Loss of the shield building or damage to it could mean loss of the water tank on top of the structure and thus loss of the key passive cooling feature. She noted that this summer, solar heating caused concrete to buckle at airports and bridges, and water pipes across the US to burst open, but that the NRC is ignoring this "simple matter of basic physics" in its review of the nuclear plant design.

Dr. Sterrett maintained that heat transfer to and from the reactor building is a very important factor in the safety analysis of this plant involving many calculations. The major omission of ignoring solar heating in the calculations has serious material consequences. First, solar heating is important to the structural integrity of the shield building, which supports the 7 – 10 million pound water tank for the passive containment

cooling system. Dr. Sterrett's stated the "testing for emergency cooling of the reactor containment was performed in a way that tends to overestimate the ability for water sprayed from the overhead tank to cool the containment dome, thus leading to the underestimation of peak pressure within the dome during an accident." She concluded that "both are important for predicting the heat removal capability of the passive containment cooling system to remove decay heat after an accident ACRS. It is more crucial on keeping the containment cooled in this passive design than on other operating plants, which have double-walled containments and powerful pumps to drive emergency cooling.

On pp. 3 and 4 of its letter of September 19, 2011⁷, the ACRS evaded fundamental issues concerning the radiative effects on thermal loads by first stating the most limiting case was the winter ambient temperature differences, but then "resolving" the issue by addressing the maximum summer surface temperatures. The ACRS simply does NOT address the radiative heat transfer for the case that it, and Westinghouse-Toshiba, maintain has the most impact. Nor does the ACRS resolve the issues of temperature differentials over time and the stresses those place on the shield building. It appears that from the graph provided by Westinghouse-Toshiba to the ACRS, the ACRS did not examine the effect of radiative heating over more than the course of a single day. This is significant for two reasons: first, the concrete failures in other concrete structures occurred only after many days of sunny hot weather, and, second, there can be cumulative temperature increases over the course of an extended period of hot sunny weather, such as the 2011 heat waves experienced throughout the southeastern US in 2011. Looking only at the solar gain over the course of one day does not provide sufficient information.

The ACRS letter relied upon an estimate from an unidentified ASHRAE table rather than the higher temperatures concrete surfaces have actually reached in various

⁷ Referenced in footnote 6 above.

parts of the United States this past summer. The ACRS does not provide any basis for relying solely on the estimate table rather than on using methodologies to calculate temperatures developed by other Federal agencies and cited in Dr. Sterrett's comments, such as the Oak Ridge Laboratory and the National Institute of Standards and Technology, for comparison. The Oversight Group suggests that the ACRS checks whether the ASHRAE table correctly predicts the much higher temperatures on the concrete surfaces that failed this past summer. These temperature differences becomes critical in assessing the integrity of the shield building over its operating life.

The corollary issue raised by Dr. Sterrett and not addressed by the ACRS is the differential thermal expansion of steel as compared to concrete in the concrete-filled steel panels. At page 186 of the transcript of the September 8, 2011, ACRS meeting⁸, Westinghouse-Toshiba indicates that the only consideration it checked regarding differential thermal expansion was the differential temperature through the wall, not the much more problematic question of the differential thermal expansion of the steel with respect to the concrete in the SC panels:

And we'd look at both the winter condition and the summer condition. And you will see here -- this slide is showing that the winter -- the delta T across the structure, across the wall, for the winter condition is the most limiting. And it is 110 degrees across the structure, degrees on the inside of the 18 shield building and minus 40 degrees on the outside. For the summer case, we look at the delta T as 45 degrees out and 70 degrees inside and 115 outside. And so you see our limiting case is the winter condition.

Differential expansion for steel and concrete was suspected as the cause of buckling of concrete bridges with steel joints or connections, and cannot be discounted.

The assumptions used by Westinghouse-Toshiba in calculating containment pressures and radiative effects, a fundamental part of the DCD Revision 19, have not been available for public review and comment. The cursory review by the NRC staff

⁸ ADAMS No. ML11256A117

and the ACRS is deficient, and as a result, the Oversight Group recommends outside expertise to analyze the thermal loading issue.

III. CONCLUSION.

For the foregoing reasons, the comments of the Oversight Group should be considered in the Commission's deliberations on the necessity of initiating a rulemaking on Revision 19 and then another on the lessons learned from Fukushima (DCD Revision 20?) in order to lawfully certify the AP1000 reactor design and operating procedures. These comments supplement the earlier comments and petitions the Oversight Group and others have filed in this docket, and demonstrate that the present certification process is a failure and the AP1000 design should not be certified.

Respectfully submitted this 29th day of September 2011.

/signed electronically by/

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ATTACHMENTS

1. Westinghouse AP1000 Design Control Document Rev. 19, ADAMS No. ML11157A500.
2. Lyman, *Surviving the One-Two Nuclear Punch: Assessing Risk and Policy in a Post-Fukushima World*, Union of Concerned Scientists, September 19, 2011
3. Dr. Sterrett presentation, transcript to the September 8, 2011 meeting of the ACRS, pp. 251-269.
4. Dr. Sterrett comments, transcript to the September 8, 2011 meeting of the ACRS, pp. 490-512

United States of America

Nuclear Regulatory Commission

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CORRECTED TRANSCRIPT

HEARING

IN THE MATTER OF

DOCKET NO: 52-025-COL and

SOUTHERN NUCLEAR OPERATING COMPANY

52-026-COL

VOGTLE ELECTRIC GENERATING PLANT,

UNITS 3 AND 4

Tuesday,

September 27, 2011

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Rockville, Maryland

The hearing commenced in the Commissioners' conference room,
11555 Rockville Pike, Rockville, Maryland, at 9:00 a.m.

BEFORE:

Gregory B. Jaczko, Chairman

Kristine L. Svinicki, Commissioner

George Apostolakis, Commissioner

William D. Magwood, IV, Commissioner

William C. Ostendorff, Commissioner

1 pretty well with the right amount of flexibility from both sides. I
2 think we were able to arrive at this in a fairly orderly process.

3 I do have a couple of questions, but before I begin, I
4 noticed that -- well, I'm not sure that I understood the response to
5 Chairman Jaczko's question about new and significant information arising
6 out of Japan. I noticed that some of the counsel were conferring. I
7 would ask if any representative of the Office of General Counsel would
8 like to in any way supplement the answer that was given about new and
9 significant information. There seemed to be a sidebar going on. Is
10 there anything you'd like to add, because I'm not certain and even the
11 Chairman said the answer was, "kind of yes and no." I'm not sure what
12 the answer was.

13 STEPHEN BURNS: My understanding from -- excuse me,
14 Commissioner, my understanding from Counsel is that I think one of the
15 other witnesses who is going to appear at the environmental piece of it
16 I think had a more specific answer to it. So, that's --

17 COMMISSIONER SVINICKI: Okay, but I assume you're a sworn
18 witness, would you --

19 GREGORY HATCHETT: Yes. This is Greg Hatchet. I'm the branch
20 chief of the Environmental Projects Branch where the environmental
21 review was conducted. More importantly, during the SEIS review, the
22 staff didn't find any new and significant information relevant to the
23 impacts postulated accidents conducted during the ESP stage.
24 Furthermore, after the Fukushima accident, the staff examined the task
25 force report and noted that the task force report emphasized that a

1 Fukushima like event is unlikely in the U.S. and the staff determined
2 that this did not represent new and significant information for the
3 Vogtle Review. Additionally, for the purpose of the environmental
4 analysis accident consequences the staff draws its key inputs from the
5 design basis accidents in the PRA reference and design certification and
6 the COL safety side analysis. Because those have not changed following
7 the Fukushima event, this further supports the determination there is no
8 currently new and significant information that would change the staff's
9 conclusion in the SEIS.

10 COMMISSIONER SVINICKI: Okay, thank you for that
11 supplementary testimony. That's helpful. Since this is the overview
12 panel, I think something that I would find helpful, and maybe this is
13 very basic, but as I said, you stepped through the findings. The staff
14 has concluded that for both the safety and environmental findings that
15 it is staff's assessment that the Commission can make an affirmative --
16 make the findings in the affirmative that are the regulatory findings
17 that are necessary. But this mandatory hearing, of course, is the
18 Commission's assessment of whether or not the review that you've
19 conducted, in our view, permits us to make those findings.

20 So if we were to take -- I know we have very detailed panels
21 coming up, but I wanted to pick a very general topic since you're the
22 overview presenters and you're supported by, I think, the 49 witnesses
23 that we swore in this morning, so I won't make you field all the
24 questions more appropriate for them. But one of the findings has to do
25 with technical qualifications of the applicant. Using that as an

1 NEPA action. So a regulatory agency has a different role in NEPA
2 then facilities and operators, sister agencies like managing forests,
3 preservation, conservation, consumption, utilization -- they all have
4 different responsibilities. But the NRC as a regulatory agency is very
5 unique in that respect.

6 COMMISSIONER OSTENDORFF: Thank you. Thank you, Mr.
7 Chairman.

8 CHAIRMAN JACZKO: Did you have --

9 COMMISSIONER OSTENDORFF: I was just going to comment. I'm
10 really -- I probably didn't frame the question well, and I'll maybe --
11 let me go ahead and just make a comment and then I'll -- maybe it will
12 be appropriate for me to ask tomorrow at the environmental panel. I
13 appreciate the distinction between the role of the NRC and DOE but if
14 I'm living -- if I'm a public citizen down there living by the, you
15 know, in that area, I look at the federal government as a federal
16 government. Whether it's the NRC or DOE, it doesn't make any
17 difference. I'm just trying to see is there a rough philosophical
18 alignment of the approaches that the two agencies that are -- that have
19 big footprints in that area take. And that's kind of the nature of the
20 motivation for my question. But I'll hold off until tomorrow on that.

21 MICHAEL JOHNSON: We'll get you a more complete answer. I
22 understand your question. Thank you, Commissioner.

23 COMMISSIONER OSTENDORFF: Thank you, Mr. Chairman.

24 CHAIRMAN JACZKO: Thank. I just wanted to follow up on one
25 point. If we go back to the question and maybe, Greg, maybe this would

1 be more for you. I just want to get correct -- I think I heard some
2 different information so I want to try and get straight what the staff
3 position is. When it comes to Fukushima and the staff's supplemental
4 EIS, the staff did consider this as new information and determined it
5 not to be significant? Is that the correct -- my correct understanding?

6 WHEREUPON,

7 GREGORY HATCHETT

8 was called as a witness for the staff of the Nuclear Regulatory
9 Commission and, having been previously duly sworn, assumed the witness stand,
10 was examined and testified as follows:

11 GREGORY HATCHETT: Yes, yes, Commissioner, I mean, Chairman.
12 Yes, sir, we did. It was new information, but it wasn't significant.
13 We looked at the task force report, and then with respect to severe
14 accident analysis, when the environmental review, we looked back to the
15 design certification in the COL to see what is changed in response to
16 that because we don't do anything different with respect to severe
17 accident than they do on the safety side in terms of the components. So
18 we're looking at the same thing. They didn't change. We didn't see a
19 need to proceed because nothing changed.

20 CHAIRMAN JACZKO: So there -- so this was looked at as new
21 but determined not to be significant. The -- and just walk me through
22 one more time. I'm confused why the safety side is relevant. I mean,
23 let's say if we in three months, or let's say in six months, the
24 Commission imposes regulatory requirements that require a modification
25 to a facility because, you know, we're concerned that the accident

1 consequences may be more significant. There's no going back for the
2 NEPA. I mean, we -- and I think, as Barry did a nice job explaining,
3 the NEPA is tied to the license issuance. So once the license is issued
4 our NEPA responsibilities end. Well, in the safety space, we can go and
5 impose new regulatory requirements. We can't go back and impose a new
6 environmental requirement. So I'm not understanding why this wasn't
7 significant information.

8 GREGORY HATCHETT: It depends. Because what happens is,
9 depending on the form that the Commission decision takes in terms of any
10 future action to impose different requirements, how the staff will
11 implement that may require further NEPA review for that particular
12 action because that will be an action -- federal action of the
13 Commission being taken with respect to new requirements. So if it, for
14 instance, it's an amendment, right, then you would have three potential
15 NEPA actions you could take: categorical exclusion, an EA, or an EIS,
16 depending on the level of impact that could be caused as a result of the
17 action that the Commission wanted to take at a nuclear facility.

18 CHAIRMAN JACZKO: But the licensing action is done?

19 GREGORY HATCHETT: Yes.

20 CHAIRMAN JACZKO: So the staff's position is that there is
21 not significant information from a NEPA perspective relative to
22 Fukushima Daiichi from a current licensing perspective?

23 GREGORY HATCHETT: At this time.

24 CHAIRMAN JACZKO: At this time.

25 GREGORY HATCHETT: Because there had been changes that would

1 require the staff to go back and relook as to what we would have to do
2 in response to some change. We haven't seen a change in requirements, a
3 change in accidents, and change in the design that will require us to go
4 back and reconsider anything to determine whether or not, assuming it is
5 significant, then determining whether or not it would change the
6 conclusions that were reached in the supplemental environmental impact
7 statement.

8 CHAIRMAN JACZKO: Okay. I'm not -- we'll probably have an
9 opportunity to explore this some more tomorrow. Any other comments or
10 questions from any of my colleagues? Okay, thank you very much. We'll
11 take a quick five-minute break.

12 (Whereupon, a short recess was taken)

13 CHAIRMAN JACZKO: Okay, we will now reconvene. I'll start
14 with our first safety panel. I'll note for the remaining panels the
15 applicant is expected to discuss the contents of the COL application,
16 they'll have 15 minutes for that, while the staff is expected to discuss
17 their regulatory conclusions and the review process. Each panel should
18 include a discussion of site specific ITAAC or other licensing
19 conditions associated with the subject matter of the panel.

20 Our first safety specific panel with focus on the first three
21 Chapters of the safety evaluation report and the relevant section of the
22 application.

23 And I would just remind anybody who is coming to the podium
24 to speak, if they can remember to state their name and whether or not
25 they've been sworn in, if they've not been sworn in then we'll have to

1 JOHN MCKIRGAN

2 was called as a witness for the Nuclear Regulatory Commission and,
3 having been previously duly sworn, assumed the witness stand, was examined and
4 testified as follows:

5 JOHN MCKIRGAN: Thank you Tom. My name is John McKirgan, I'm
6 chief of the containment ventilation branch in NRO. To provide a
7 context for the COL incorporation by reference of the AP1000 design I
8 will briefly describe some of the basic AP1000 engineered safety
9 features. As discussed in the next few slides, the AP1000 design uses
10 passive safety features to provide safety functions for emergency core
11 cooling and long-term core cooling, containment heat removal, and
12 control room habitability without operator action or reliance on AC
13 power. In addition there are normal or non safety active systems that
14 provide many of the accident mitigation functions as well. For example,
15 there is a non safety make up system, residual heat removal system,
16 containment spray system and control room ventilation system. The non-
17 safety active systems are not credited in the accident analysis but are
18 expected to function if available, but now we will turn to the passive
19 systems that are credited in the accident analysis. Unlike the current
20 operating fleet, the AP1000 design uses passive systems that rely on
21 natural forces such as gravity to operate. Next slide please.

22 This figure shows that the AP1000 passive core cooling system
23 design. The passive core cooling system consists of one passive
24 residual heat removal heat exchanger, two core make up tanks, two
25 accumulators, two sets of automatic depressurization valves, and one in-

1 MALE SPEAKER: Are there other or comments on these sections?

2 CHAIRMAN JACZKO: I had one area that I wanted to briefly explore.

3 The --this is not something we've talked a lot about, but it's similar context
4 to the technical support center. One of the first votes, actually, the first
5 one of, maybe the first vote I cast, probably the first substantive vote I cast
6 as Commissioner was to approve the combined EOF for seven for Vogtle Farley and
7 Hatch and one of the concerns I had at that time is whether that would really
8 be a workable system. And coming out of that, one of comments that Southern
9 made was to do a drill, a dual site drill once every five years. And I assume
10 that decision was in 2005, one of the drills has been conducted.

11 THEODORE AMUNDSON: Yes, those drills have been conducted.

12 CHAIRMAN JACZKO: The question that I have is of course, one of the
13 challenges we saw from Fukushima was the potential for multi-unit events. And
14 if the Commission approves this license and you're successful and constructing
15 plants at Vogtle, even at four units there, that would be a large site. So
16 your EOF would be handling potentially large, potentially a large number of
17 units at one time, up to potentially eight units. Have you considered, for the
18 EOF, what the impacts would be on the EOF to handle a large number of events
19 like that simultaneously?

20 THEODORE AMUNDSON: One of the things that we have done is look at
21 the impact of adding two more units to the UF, Vogtle 3 and 4. And --

22 CHAIRMAN JACZKO: And when you say that, does that mean the impact
23 of simultaneously having to deal with all of those units or --

24 THEODORE AMUNDSON: We already are in place, for an example, the
25 tech--as I mentioned in my previous testimony, the technical support center is

1 designed to handle an event on one or all four units at the same time. The
2 existing EOF is designed to handle an event at multiple sites and that would
3 include two sites, two reactors at each site. So it's already designed to
4 handle from four units.

5 Now we've been looking at it in terms of our planning for the EOF.
6 If going to be adding two more sites, or two more reactors, one more site. And
7 we have already looked at that and are planning and working that into our
8 emergency planning procedures so that we will in fact be able to handle
9 multiple units, multiple sites at one time.

10 CHAIRMAN JACZKO: Well that's good to hear, and I recognize at this
11 point, there's not a clear regulatory basis for this but I think as we look at
12 the Fukushima events, certainly one of the issues that I think we're going to
13 have to address is somehow how we handle multiple unit events and so it's good
14 to hear that this is something you're thinking about. And that if we do move
15 in that direction, it sounds like you'll be prepared to handle that.

16 THEODORE AMUNDSON: We believe we will be. Yes.

17 CHAIRMAN JACZKO: Thank you. Any other questions? Okay, thank
18 you. We will take a quick, take a five minute break.

19 (Whereupon, a short recess was taken)

20 CHAIRMAN JACZKO: That last panel concluded our safety focus panels
21 for the hearing. We're now going to turn to the core environmental issues
22 raised by the application. During this panel, we'll focus on the environmental
23 impact statement including the staff's analysis and conclusions as well as the
24 process by which the staff developed the EIS. This is an area where the staff
25 works closely with governmental agencies at the federal, state, and local level

1 the second limited work authorization conclusions from -- in addition to the
2 second limited work authorizations, the conclusions from the three license
3 amendments were incorporated in the COL supplemental environmental impact
4 statement. The COL supplemental environmental impact statement was issued
5 earlier this year with no open items. The environmental impacts concluded in
6 the COL supplemental environmental impact statement were consistent with the
7 conclusions in the ESP environmental impact statement with the exception of the
8 change in terrestrial impacts from small to moderate, resulting from the
9 license amendments.

10 However due to the environmental findings and voluntary mitigation
11 efforts for the two state threatened species, the impacts will not destabilize
12 terrestrial resources. Again, the COL supplemental environmental impact
13 statement was issued with no open items. Next slide please.

14 Now I will discuss the new and significant review. But before I
15 get into the general overview, I would like to take a moment to discuss
16 Fukushima. Obviously the Fukushima event is the subject of a lot of
17 discussion. While it was tragic and unexpected, the accidents comparable to
18 the Fukushima accident, and severe accident mitigation design alternatives have
19 already been considered during the NEPA review for the ESP environmental impact
20 statement. Therefore there is no new and significant information.

21 Now the new and significant review. As previously mentioned, the process
22 used to develop to the environmental report for the COL application and
23 ultimately the staff's independent evaluation to develop the COL supplemental
24 environmental impact statement referenced the ESP environmental impact
25 statement, which is the new and significant process. For information to be

1 those things are within the Commission's purview and some of those things are
2 outside of the Commission's purview.

3 CHAIRMAN JACZKO: So if you take this moderate impact for the
4 terrestrial ecology, are there, either through state or federal agencies, are
5 there requirements for specific mitigating measures to address that?

6 MALLECIA SUTTON: Yes, there's state permits that the applicant
7 must follow, that mitigates those impacts.

8 CHAIRMAN JACZKO: So is it moderate after the mitigation or before
9 the mitigation?

10 GREGORY HATCHETT: With respect to the specific question on the
11 terrestrial ecology, we'll note that there are no specific requirements for
12 mitigation on private land, and as the applicant indicated in their
13 presentation, they voluntarily did the mitigation, working with the state and
14 the other agencies and we physically were out there when they were doing some
15 of the trapping of the Pocket Gopher. Having said that, we look at the staff's
16 definitions and its regulations of small, moderate, large. We used that
17 process because we went from the ESP of no impact to the Pocket Gopher, to a
18 noticeable impact to the Pocket Gopher and we made the requisite change.

19 CHAIRMAN JACZKO: Okay. So at this point there is no relevant
20 state or local requirement that anything be done to address, okay. Mr.
21 Fulton, I had a question for you, you mentioned with regard to Fukushima, the
22 bounding of the Fukushima accident, can you provide whatever technical analysis
23 you have to support that statement?

24 DALE FULTON: Essentially what we considered was the Fukushima
25 event and the consequences associated with that event and not necessarily the

1 initiating event.

2 CHAIRMAN JACKZKO: As you can just provide us with whatever
3 analysis you have.

4 DALE FULTON: What we do is a screening. In our new and
5 significant process, we do a screening to determine if it's new and
6 significant. There was not --

7 CHAIRMAN JACZKO: Again, if you could just provide whatever
8 analysis you have, if you can just provide that. Thanks.

9 Turning back to this issue with the staff as well. We have -- as
10 to my recollection was that the EIS had come out a little bit later in than it
11 did, I think the date on it is March, by the time it goes to the printer and
12 all that, probably finished working on it sometime in February, and so
13 obviously Fukushima happened sometime after the current final EIS was done.
14 One of the things that was done -- and I'm not an expert in our severe accident
15 analysis that we do in the EISs, but one of the things that I would think would
16 be a little bit different, I think that we've learned from Fukushima is that
17 maybe to consider in a way that we haven't, multi-unit events and the potential
18 impact that that may have. So, I'm wondering if you can give me a sense if
19 that's something we've looked at, at this point or not.

20 GREGORY HATCHETT: Chairman, I think those issues are currently
21 under consideration as part of the task force recommendation and --

22 CHAIRMAN JACZKO: Which issues?

23 GREGORY HATCHETT: The issues of multi units events or station
24 blackouts, all the kinds of things that the lessons that we're learning about
25 the Fukushima event, what we principally focused on was first, any new any

1 significant information that we may have found with respect to the original
2 environmental analysis for severe accidents and that was done, published in the
3 same month that the event occurred,

4 CHAIRMAN JACZKO: So that analysis was done before --

5 GREGORY HATCHETT: But we didn't find anything, so then the next
6 step was the task force report came out, we looked to it, they essentially
7 documented that a Fukushima-like event was not likely in the U.S., but then
8 more importantly, we're looking at the Vogtle application and the Vogtle-
9 specific concerns related to an AP1000 plant and the ability of that plant to
10 withstand certain external events and obviously no one here at this table, the
11 staff part, are experts in severe accidents either, but we're looking to that
12 information.

13 CHAIRMAN JACZKO: So when we do the severe accident analysis, do we
14 assume that the severe accidents happen?

15 GREGORY HATCHETT: Do we assume that these happen?

16 CHAIRMAN JACZKO: I mean we do a severe accident analysis so we
17 assume a severe accident.

18 GREGORY HATCHETT: Yes, we do assume the accident --

19 CHAIRMAN JACZKO: And then when we do that analysis, do we assume,
20 let's take specifically the AP1000, did we consider more than one unit at a
21 time having a severe accident?

22 GREGORY HATCHETT: With respect to what we're doing in looking for
23 new and significant information --

24 CHAIRMAN JACZKO: No, I'm talking about the analysis that was done.

25 GREGORY HATCHETT: I can't answer the question about the analysis,

1 we can get back to you about that.

2 CHAIRMAN JACZKO: Can you --

3 GREGORY HATCHETT: From a safety side perspective --

4 CHAIRMAN JACZKO: No, I mean from the severe accident analysis that
5 was done in the EIS.

6 GREGORY HATCHETT: What we do with the EIS, we look at what's done
7 at the safety side and make sure we are consistent with what we are looking at
8 in terms of accidents, whether they're design basis accidents or severe
9 accidents. And what I said yesterday, with respect to that --

10 CHAIRMAN JACZKO: I mean -- we have a methodology for a severe
11 accident analysis that we do for EIS, is that not true?

12 ROBERT SCHAAF: In the environmental reviews?

13 CHAIRMAN JACZKO: Yeah.

14 ROBERT SCHAAF: Yes, yes.

15 CHAIRMAN JACZKO: So the licensee submits that, or we do that?

16 MALLECIA SUTTON: The information is submitted to the staff and the
17 staff then evaluates that information.

18 CHAIRMAN JACZKO: Okay, so the information that was submitted as
19 part of the early site -- I mean we go back to the early site permit. Did we
20 consider the severe accident involving more than one reactor simultaneously or
21 with some time lag or something like that?

22 DALE FULTON: Mr. Chairman, can I help answer that?

23 CHAIRMAN JACZKO: Sure.

24 DALE FULTON: Our severe accident analysis, I'm not a severe
25 accident expert, but in our ESP environmental report, we consider the dose

1 released to the public for a event of -- taking into account not only our
2 Vogtle three and four, also one and two.

3 CHAIRMAN JACZKO: So simultaneously?

4 DALE FULTON: Simultaneously.

5 CHAIRMAN JACZKO: All four? Okay. So that's the reason why it's
6 bounding.

7 DALE FULTON: I would tend to agree with that, yes.

8 CHAIRMAN JACZKO: Okay, thank you. When the staff looks at these
9 kinds of things -- so there's the issue of whether there's new and significant
10 information, then to what extent do we document that, to what extent do we put
11 in the EIS, a statement that says, as Mr. Fulton indicated, we previously
12 analyzed this and based on what we previously analyzed this accident is
13 bounding? Is there an extent to which -- does that require then a complete
14 supplementing of the EIS in order to conclude something like that or can that
15 be done, I guess, through the hearing process I suppose.

16 GREGORY HATCHETT: The answer to that question would be, yes, with
17 some clarification. Yes, if we found a need to do a supplement, we would have
18 done that. And we didn't find a need to do a supplement in this case. And
19 yes, if the record of decision of the hearing. The hearing basically serves as
20 the record of decision for the EIS, and so it could be documented as part of
21 the hearing as well. Thank you.

22 CHAIRMAN JACZKO: Commissioner Svinicki?

23 COMMISSIONER SVINICKI: Well thank you for your presentations. The
24 staff talked occasionally about site audits that the staff conducted and it
25 seems to me from the instances where that was mentioned, occasionally that

1 March of this year. And we haven't really touched upon how we deal with the
2 events of Fukushima Daiichi. And very early on in this situation I was asked a
3 question about how would we move forward with new reactor licensing in dealing
4 with the lessons of Fukushima, and what I said at the time and what I still
5 believe is that the timeline for those activities are generally somewhat
6 consistent. The licensing action, we still have a little bit more work to do
7 and if things move forward smoothly, we'd probably be in a position to have a
8 final decision sometime end of this year or early next year on the Vogtle
9 application. We should presumably also by the end of the year have a good
10 sense of where the Commission stands on a lot of the post Fukushima actions.

11 So, what I think is still missing is how we somehow tie those
12 activities together. What is the linkage between what we're doing with
13 Fukushima Daiichi, what we're going to be doing with the final decision on the
14 licensing of Vogtle? And if that license is in the affirmative, how do we
15 ensure that in the right way we are incorporating and securing what will likely
16 be a series of efforts and activities. So I would like to just offer that
17 first, to you Mike, and to Buzz or any of the -- anyone else who would like to
18 comment on what they see is the best way to kind of marry those two activities
19 together.

20 MICHAEL JOHNSON: Thank you, Chairman. In terms of moving forward,
21 I think it is important that we stay connected with the operating fleet in
22 terms of those actions that would play out. And in fact, as you are well
23 aware, I'm a member of that group, looking at the actions directed by the staff
24 in terms of what we'll do moving forward. Our plan would be to follow those
25 actions, to be involved in consideration of those actions, in fact, and to

1 raise for the Commission's consideration those actions in terms of how they
2 play out on new reactors. Those actions, once decided by the Commission in
3 terms of requirements, would be actions that we would take using our process to
4 go back to the design cert if appropriate, to the COL as appropriate to adjust
5 those requirements to adjust the license, if you will, depending on how those
6 requirements play out. So we're attuned, we're in step working certainly with
7 the AP1000 and Vogtle in terms of putting into place the actions decided by the
8 Commission with response to Fukushima.

9 BUZZ MILLER: Just to say it in a slightly different way, much like
10 we're confident our operating reactor fleet is safe and should continue
11 operating, we don't believe there's a technical basis to hold back this
12 licensing process. And the Commission has the same tools for license -- this
13 post licensing that you do for our operating fleet. And it's not like it goes
14 away so you still have the same opportunity to come back to us.

15 CHAIRMAN JACZKO: Well, thanks a lot. I appreciate those answers.
16 I have to say I may be in a slightly different place. We do have a big tool
17 right now which is the issuance of a license. I think we have an obligation to
18 make sure that we don't miss the opportunity to put in place the right kinds of
19 -- whether it's a license condition or whether it's some other statement that
20 does connect these things in a more significant way. Because it's one thing to
21 have an existing plant that has a licensing process, in my mind, and then to go
22 back and use our process to adjust that and adapt it versus one that we newly
23 licensed. We have the ability, knowingly, affirmatively to make that decision,
24 knowing what we know about what happened in Japan. And I think for us to
25 simply ignore it, to say we'll take care of it -- if we issue a license we'll

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Gregory B. Jaczko, Chairman
Kristine L. Svinicki
George Apostolakis
William D. Magwood, IV
William C. Ostendorff

In the Matters of

UNION ELECTRIC COMPANY
d/b/a AMEREN MISSOURI
(Callaway Plant, Unit 2)

AP1000 DESIGN CERTIFICATION AMENDMENT
(10 C.F.R. Part 52)

CALVERT CLIFFS NUCLEAR PROJECT, LLC
(Calvert Cliffs Nuclear Power Plant, Unit 3)

DETROIT EDISON CO.
(Fermi Nuclear Power Plant, Unit 3)

DUKE ENERGY CAROLINAS, LLC
(William States Lee III Nuclear Station, Units 1 and 2)

ENERGY NORTHWEST
(Columbia Generating Station)

ENTERGY NUCLEAR GENERATION CO. and
ENTERGY NUCLEAR OPERATIONS, INC.
(Pilgrim Nuclear Power Station)

ENTERGY NUCLEAR OPERATIONS, INC.
(Indian Point Nuclear Generating Station, Units 2 and 3)

ESBWR DESIGN CERTIFICATION AMENDMENT
(10 C.F.R. Part 52)

FIRSTENERGY NUCLEAR OPERATING CO.
(Davis-Besse Nuclear Power Station, Unit 1)

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) Docket No. 52-037-COL
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) NRC-2010-0131
) RIN 3150-AI81
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) Docket No. 52-016-COL
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) Docket No. 52-033-COL
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) Docket Nos. 52-018-COL
) & 52-019-COL
)

) Docket No. 50-397-LR
)
)

) Docket No. 50-293-LR
)
)

) Docket Nos. 50-247-LR
) & 50-286-LR
)

) NRC-2010-0135
) RIN-3150-AI85
)

) Docket No. 50-346-LR
)
)
)

FLORIDA POWER & LIGHT CO. (Turkey Point, Units 6 and 7)	)	Docket Nos. 52-040-COL & 52-041-COL
LUMINANT GENERATION CO. LLC (Comanche Peak Nuclear Power Plant, Units 3 and 4)	)	Docket Nos. 52-034-COL & 52-035-COL
NEXTERA ENERGY SEABROOK, LLC (Seabrook Station, Unit 1)	)	Docket No. 50-443-LR
PACIFIC GAS AND ELECTRIC CO. (Diablo Canyon, Units 1 and 2)	)	Docket Nos. 50-275-LR & 50-323-LR
PPL BELL BEND, LLC (Bell Bend Nuclear Power Plant)	)	Docket No. 52-039-COL
PROGRESS ENERGY CAROLINAS, INC. (Shearon Harris Nuclear Power Plant, Units 2 and 3)	)	Docket Nos. 52-022-COL & 52-023-COL
PROGRESS ENERGY FLORIDA, INC. (Levy County Nuclear Power Plant, Units 1 and 2)	)	Docket Nos. 52-029-COL & 52-030-COL
SOUTH CAROLINA ELECTRIC & GAS CO. and SOUTH CAROLINA PUBLIC SERVICE AUTHORITY (also referred to as SANTEE COOPER) (Virgil C. Summer Nuclear Station, Units 1 and 2)	)	Docket Nos. 52-027-COL & 52-028-COL
NUCLEAR INNOVATION NORTH AMERICA LLC (South Texas Project, Units 3 and 4)	)	Docket Nos. 52-012-COL & 52-013-COL
SOUTHERN NUCLEAR OPERATING CO. (Vogtle Electric Generating Plant, Units 3 and 4)	)	Docket Nos. 52-025-COL & 52-026-COL
TENNESSEE VALLEY AUTHORITY (Bellefonte Nuclear Power Plant, Units 3 and 4)	)	Docket Nos. 52-014-COL & 52-015-COL
TENNESSEE VALLEY AUTHORITY (Watts Bar, Unit 2)	)	Docket No. 50-391-OL
VIRGINIA ELECTRIC AND POWER CO. d/b/a DOMINION VIRGINIA POWER and OLD DOMINION ELECTRIC COOPERATIVE (North Anna, Unit 3)	)	Docket No. 52-017-COL

CLI-11-05

MEMORANDUM AND ORDER

We have received a series of petitions to suspend adjudicatory, licensing, and rulemaking activities, and requesting additional related relief, in the captioned matters.¹ The petitioners seek relief in light of the recent events at the Fukushima Daiichi Nuclear Power Station, following the March 11, 2011, earthquake and tsunami, to ensure the consideration in these matters of the safety and environmental implications of the Fukushima events. As discussed below, we grant the requests for relief in part and deny them in part. In particular, we decline to suspend the captioned rulemaking proceedings and adjudications, or any final licensing decisions in the captioned matters, but grant the request for a safety analysis to the extent that the NRC is conducting both a short-term and long-term lessons-learned analysis, incorporating stakeholder input.

I. BACKGROUND**A. Events at Fukushima Daiichi Nuclear Power Station**

On March 11, 2011, Japan suffered a 9.0 magnitude earthquake, followed by a devastating tsunami. The earthquake and tsunami damaged reactors, power grid and power supply connections, cooling and backup cooling systems, and the spent fuel pools at the six-unit

¹ A complete list of all filings associated with today's decision is provided in an Appendix to the decision. The petitions, amended petitions, and errata, although filed on multiple dockets, are substantively identical. For convenience, page references in today's decision correspond to a single set of pleadings, filed by Mindy Goldstein of the Turner Environmental Law Clinic, on behalf of Dan Kipnis, Mark Oncavage, National Parks Conservation Association, and Southern Alliance for Clean Energy, in *Florida Power & Light Co. (Turkey Point, Units 6 and 7): 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* (Apr. 14, 2011); *Amendment and Errata to 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* (Apr. 18, 2011); *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* (Apr. 18, 2011) ("Amended Petition" in citations, "Petition," generally, in the text of today's decision).

Fukushima Daiichi site, located on Japan's coast. Immediately upon learning of the events in Japan, the NRC staffed its Operations Center and deployed technical staff to assist the U.S. ambassador in Japan. Initial reports indicated that the plants, three of which were operating at the time of the events, survived the earthquake without major damage, only to experience significant damage after the tsunami irrevocably damaged backup diesel generators and diesel fuel supplies. Our understanding of the details of the failure modes at the Fukushima Daiichi site continues to evolve, and we continue to learn more about the extent of the damage at the site.

B. Domestic Regulatory Response to the Japanese Events

Following the earthquake and tsunami, the agency began prompt action to verify the safety of nuclear facilities in the United States. The Staff is working to gather and examine all available information in order to analyze the Japanese events and understand their implications for the United States. This effort has included regular Commission briefings.²

On our direction, the Staff established a Task Force to review our processes and regulations to determine, among other things, whether the agency should make additional improvements to our regulatory system. We instructed the Task Force to submit for our consideration recommendations for technical and policy direction.³ In the near term, we directed the Task Force to take a number of actions, including evaluation of currently available information from the Japanese events to identify "potential or preliminary near term/immediate

² See, e.g., Transcript, "Briefing on NRC Response to Recent Nuclear Events in Japan" (Mar. 21, 2011) (Mar. 21 Tr.); Transcript, "Briefing on the Status of NRC Response to Events in Japan and Briefing on Station Blackout" (Apr. 28, 2011) (ADAMS Accession No. ML111390571); Transcript, "Briefing on the Task Force Review of NRC Processes and Regulations Following Events in Japan" (July 19, 2011) (July 19 Tr.).

³ See "NRC Actions Following the Events in Japan," Staff Requirements – Tasking Memorandum COMGBJ–11–0002 (Mar. 23, 2011) (ML110800456) (Tasking Memorandum). See *generally* "Charter for the Nuclear Regulatory Commission Task Force to Conduct a Near-Term Evaluation of the Need for Agency Actions Following the Events in Japan" (Apr. 1, 2011) (ML11089A045).

operational or regulatory issues” affecting domestic operating reactors of all designs, in several areas.⁴ These areas include protection against earthquake, tsunami and other natural events, station blackout, severe accident mitigation, emergency preparedness, and combustible gas control.⁵

The Task Force completed its near-term effort and issued its report on July 12, 2011, for our consideration.⁶ This report includes twelve overarching recommendations for improving the safety of both new and operating nuclear reactors by clarifying our regulatory framework, reevaluating and enhancing protective and mitigative measures, strengthening emergency preparedness, and improving the efficiency of NRC regulatory oversight programs.⁷ However, the Task Force also stated that “continued operation and continued licensing activities do not pose an imminent risk to public health and safety.”⁸ The Task Force

⁴ Tasking Memorandum at 1 (unnumbered).

⁵ *Id.* at 1 (unnumbered). Consistent with direction in the Tasking Memorandum, the Task Force provided an initial status report to the Commission at a public meeting on May 12, 2011. See *generally* Transcript, “Briefing on the Progress of the Task Force Review of NRC Processes and Regulations Following the Events in Japan” (May 12, 2011) (ML111360513) (May 12 Tr.). A second briefing was provided on June 15, 2011. See *generally* Transcript, “Briefing on the Progress of the Task Force Review of NRC Processes and Regulations Following the Events in Japan” (June 15, 2011) (ML111672048) (June 15 Tr.).

⁶ See “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) (Near-Term Report) (transmitted to the Commission via SECY-11-0093, “Near-Term Report and Recommendations for Agency Actions Following the Events in Japan” (July 12, 2011) (ML11186A950 (package)). Any changes we decide to adopt as a result of these recommendations will be implemented through our normal regulatory processes. See “Near-Term Report and Recommendations for Agency Actions Following the Events in Japan,” Staff Requirements Memorandum SECY-11-0093 (Aug. 19, 2011) (SRM on Near-Term Report) (ML112310021), for our directions to the Staff in response to the Near-Term Report.

⁷ See, e.g., Near-Term Report at 69-70.

⁸ Near-Term Report at vii. The Task Force explained: “The current [U.S.] regulatory approach, and more importantly, the resultant plant capabilities allow the Task Force to conclude that a sequence of events like the Fukushima accident is unlikely to occur in the United States and some appropriate mitigation measures have been implemented, reducing the likelihood of core damage and radiological release.” *Id.*

formally presented the report to us at a briefing on July 19, 2011.⁹

We directed a number of actions in response to the Near-Term Report, including review and assessment, with stakeholder input, of the Task Force recommendations; provision of a draft charter for assessing the Task Force recommendations and conducting the agency's longer-term review; preparation of a notation vote paper that identifies recommended short-term actions; preparation of a notation vote paper that sets recommended priorities for the Task Force recommendations; and formal review of the Task Force recommendations by the Advisory Committee on Reactor Safeguards.¹⁰

In parallel with, and in support of the Task Force's efforts, the Staff has taken several actions to communicate with licensees and to obtain information regarding various aspects of their emergency preparations and compliance. Just a few days after the earthquake, the Staff issued an initial Information Notice to the power-reactor community, describing the circumstances at the Fukushima Daiichi site.¹¹ The Staff asked recipients to review the information to assess its applicability to their facilities, and to consider taking appropriate actions to prevent similar problems.

To date, the Staff also has issued two temporary inspection instructions to examine the readiness of U.S. facilities to respond to design basis and beyond design basis accidents. The

⁹ See *generally* July 19 Tr.

¹⁰ See SRM on Near-Term Report. We also directed a separate consideration of the recommendation that the agency re-evaluate its regulatory framework (Task Force Recommendation 1), followed by the preparation of a notation vote options paper regarding that recommendation. *Id.* at 2 (unnumbered).

¹¹ See *generally* NRC Information Notice 2011-05, "Tohoku-Taiheiyoku-Oki Earthquake Effects on Japanese Nuclear Power Plants" (Mar. 18, 2011) (ML110760432). Shortly thereafter, the Staff issued a second Information Notice to fuel-cycle licensees, updating the status of the Fukushima Daiichi facilities, and highlighting the regulatory requirements applicable to those licensees. See *generally* NRC Information Notice 2011-08, "Tohoku-Taiheiyoku-Oki Earthquake Effects on Japanese Nuclear Power Plants – for Fuel Cycle Facilities" (Mar. 31, 2011) (ML110830824).

first instruction directed the Staff to inspect operating power reactor facilities to assess their readiness to respond to events similar to those that occurred at the Fukushima Daiichi site.¹²

The second instruction directed the Staff to assess each licensee's ability to access and implement the severe accident management guidelines at its facility.¹³

The Staff also issued a bulletin to licensees for currently operating nuclear power reactors, to seek confirmation that they are complying with the requirements of 10 C.F.R. § 50.54(hh)(2)¹⁴ and to obtain information to determine whether additional assessment of

¹² NRC Inspection Manual, Temporary Instruction 2515/183, "Followup to the Fukushima Daiichi Nuclear Station Fuel Damage Event" (Mar. 23, 2011) (ML11077A007). The NRC Staff completed these inspections and issued inspection reports to licensees on May 13, 2011. As a general matter, the reports indicate that none of the observations made during the performance of these examinations raised a significant safety issue. See "Summary of Observations TI 2515/183" and "Results Overview TI 2515/183," both available at <http://www.nrc.gov/NRR/OVERSIGHT/ASSESS/follow-up-rpts.html> (released on May 20, 2011). The inspection reports informed the Task Force's near-term efforts; further evaluation of the inspection reports is occurring through the NRC's Reactor Oversight Process.

¹³ NRC Inspection Manual, Temporary Instruction 2515/184, "Availability and Readiness Inspection of Severe Accident Management Guidelines (SAMGs)" (Apr. 29, 2011) (ML11115A053) (TI 2515/184). SAMGs were put into place on a voluntary basis by licensees in the late 1990s. The purpose of SAMGs is to contain or reduce the impact of accidents that damage a reactor core. See May 12 Tr. at 9-10; TI 2515/184 at 1; June 15 Tr. at 15-16. Task Force representatives highlighted these inspections in the May 12 briefing, and stated the expectation that this examination would be of substantial assistance to the Task Force in the formulation of its recommendations. May 12 Tr. at 14. Inspection results were issued in June 2011. The Staff found that SAMGs were available at every location, although there was some inconsistency in how this voluntary program is implemented. The Staff concluded that, individually, none of its observations presented significant safety issues, but is evaluating the information in order to decide if additional agency actions are required. See "Summary of Observations TI 2515/184," and "Results Overview TI 2515/184," both available at <http://www.nrc.gov/NRR/OVERSIGHT/ASSESS/SAMGs.html> (released on June 6, 2011).

¹⁴ Section 50.54(hh)(2) requires licensees to "develop and implement guidance and strategies intended to maintain or restore core cooling, containment, and spent fuel pool cooling capabilities under the circumstances associated with loss of large areas of the plant due to explosions or fire. . . ."

mitigating strategy program implementation is required, whether the existing inspection program should be enhanced, or whether additional regulatory action is justified.¹⁵

C. Procedural Background

The initial petitions were filed over a period of days, beginning April 14, 2011. These petitions were followed by a series of amended petitions and errata to the original petitions. On April 19, 2011, the Secretary of the Commission issued an order establishing a briefing schedule.¹⁶ The Scheduling Order authorized two sets of additional filings: (1) supplements to the petition, and (2) answers to the Petition or briefs *amici*. A declaration prepared by Dr. Arjun Makhijani, supporting the petitions, was filed in the majority of the captioned proceedings.¹⁷ The Commonwealth of Massachusetts asked to be allowed to join the petitions to suspend, and asked for additional *Pilgrim*-specific relief.¹⁸ Answers to the petitions also were filed in the majority of the captioned matters. We subsequently received a series of pleadings, styled as

¹⁵ See *generally* NRC Bulletin 2011-01: "Mitigating Strategies" (May 11, 2011) (ML11250360). All operating power reactor licensees provided the requested information by July 11, 2011. The responses are available at <http://www.nrc.gov/NRR/OVERSIGHT/ASSESS/mitigating-strategies.html>.

¹⁶ Order (Apr. 19, 2011) (unpublished) (Scheduling Order).

¹⁷ See, e.g., *Declaration of Dr. Arjun Makhijani in Support of 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* (Apr. 20, 2011), filed by Mindy Goldstein of the Turner Environmental Law Clinic, on behalf of Dan Kipnis, Mark Oncavage, National Parks Conservation Association, and Southern Alliance for Clean Energy, in *Florida Power & Light Co.* (Turkey Point, Units 6 and 7) (Makhijani Declaration). For convenience, page references in today's decision correspond to this filing.

¹⁸ *Commonwealth of Massachusetts Response to Commission Order Regarding Lessons Learned from the Fukushima Daiichi Nuclear Power Station Accident, Joinder in Petition to Suspend the License Renewal Proceeding for the Pilgrim Nuclear Power Plant, and Request for Additional Relief* (May 2, 2011) (Commonwealth Petition).

motions to permit replies, replies, and responses opposing the motions to permit replies. We also received filings attaching additional supporting documents.¹⁹

Petitioners²⁰ invoke our supervisory authority under the Atomic Energy Act of 1954, as amended (AEA) and argue that, under the AEA and the National Environmental Policy Act (NEPA), the NRC is precluded “from issuing licenses or approving standardized reactor designs until it has completed its investigation of the Fukushima accident and considered the safety and environmental implications of the accident with respect to its regulatory program.”²¹ In brief summary, petitioners request relief including: suspension of all licensing and rulemaking decisions pending completion by the NRC’s Task Force of its near-term and long-term review; suspension of all proceedings on issues identified for investigation by the Task Force; suspension of proceedings in connection with any other issues identified by the Task Force; analysis of whether the events at Fukushima constitute “new and significant information” under NEPA; safety analysis of the regulatory implications of the events at Fukushima; and establishment of a schedule for raising new issues in pending licensing proceedings.

¹⁹ We have received four sets of substantively identical “supplemental comments” in support of the emergency petition, filed by participants on the *North Anna*, *Summer*, and *Shearon Harris* combined license dockets and by participants in the ESBWR design certification rulemaking. These filings, and corresponding answers, are listed in the Appendix to this decision. The commenters seek consideration of the Near-Term Report in all licensing proceedings and in the ESBWR rulemaking proceeding and raise several general concerns related to the conclusions in the Near-Term Report. The commenters point out that these comments are “substantially similar” to filings that have been made contemporaneously in other pending cases. With respect to the ESBWR-related filing, we refer the comments to the ESBWR design certification rulemaking docket. For the three adjudicatory matters, we have reviewed the comments, and find that none change our conclusion that the captioned licensing reviews and adjudicatory proceedings (as applicable) need not be stayed today. At bottom, the *North Anna*, *Summer*, and *Shearon Harris* commenters appear to seek consideration of their concerns in the corresponding proceedings. However, the appropriate vehicle for doing so is not the submission of comments. The proper mechanism for raising application-specific concerns in these combined license cases is to file a new contention, consistent with the procedural rules applicable to the proceeding. See, e.g., 10 C.F.R. §§ 2.309(c), 2.309(f), 2.326.

²⁰ A list of the petitioners is set out in the Amended Petition at 5-7.

²¹ Amended Petition at 24.

Petitioners included requests to suspend the AP1000 and ESBWR design certification rulemakings. A second, separate petition was filed in the AP1000 rulemaking docket in advance of the initial petitions.²² The second petition requested two remedies: the immediate postponement of the ongoing AP1000 design certification rulemaking and a comprehensive review of the Fukushima events focused on new reactor designs.²³ Westinghouse opposed both the Petition²⁴ and the AP1000 Petition.²⁵ GE Hitachi Nuclear Energy opposed the Petition in connection with the ESWBR rulemaking.²⁶

In mid-August, we received a series of petitions for rulemaking seeking to rescind certain regulations contained in 10 C.F.R. Part 51.²⁷ These petitions, citing 10 C.F.R. § 2.802(d), also

²² *Petition to Suspend AP1000 Design Certification Rulemaking Pending Evaluation of Fukushima Accident Implications on Design and Operational Procedures and Request for Expedited Consideration* (Apr. 6, 2011) (AP1000 Petition).

²³ *Id.* at 23.

²⁴ Ziesing, R.F., Westinghouse Electric Co., letter to Annette L. Vietti-Cook, NRC, Subject: "Emergency Petition to Suspend All Pending Licensing Decisions and Related Rulemaking Decisions Pending Investigation of Lessons Learned from Fukushima Daiichi Nuclear Power Station Accident" (May 2, 2011), endorsing *Brief of Nuclear Energy Institute in Opposition to Emergency Petition* (May 2, 2011).

²⁵ Ziesing, R.F., Westinghouse Electric Co., letter to Secretary, NRC, Subject: "Westinghouse Comments in the AP1000® Design Certification Amendment Rulemaking in Response to Petitions to Suspend Rulemaking" (May 10, 2011).

²⁶ Head, Jerald G., GE Hitachi Nuclear Energy, letter to Secretary, NRC, Subject: "Answer to Petition; SECY Order PR 52 (76FR16549), Docketed 04/19/2011 (NRC Accession No. ML111101277); Proposed Rule, ESBWR Design Certification, NRC-2010-0135, RIN 3150-AI85, 76 Federal Register 16549 (March 24, 2011)" (May 2, 2011).

²⁷ A complete list of these rulemaking petitions, and associated supporting declarations, is included in the Appendix to the decision. For convenience, page references in today's decision correspond to the set filed by Gene Stilp, in *PPL Bell Bend, LLC* (Bell Bend Nuclear Power Plant): *Rulemaking Petition to Rescind Prohibition Against Consideration of Environmental Impacts of Severe Reactor and Spent Fuel Pool Accidents and Request to Suspend Licensing Decision* (Aug. 10, 2011) (Rulemaking Petition); *Declaration of Dr. Arjun Makhijani Regarding Safety and Environmental Significance of Lessons Learned from Fukushima Daiichi Nuclear Power Station Accident* (Aug. 8, 2011).

seek suspension of certain of the captioned proceedings pending resolution of these rulemaking petitions. These rulemaking petitions are considered separately, in section III.²⁸

D. Historical Perspective—Parallels to Prior Regulatory Responses

Our decision today is informed by the actions taken by the Commission following the March 28, 1979, accident at Three Mile Island (TMI), and following the events of September 11, 2001. In both instances the agency assessed the events, including implications for existing licenses and pending licensing actions, over a period of time, and considered the impact of the events on pending licensing actions.

1. The Accident at Three Mile Island

The pleadings we consider today vary in their characterizations of the Commission's actions after the TMI accident.²⁹ We therefore set out a brief chronology of NRC decisions from the post-TMI era, as relevant to today's decision. For several months following the TMI accident, the NRC issued no new operating licenses, construction permits, or limited work authorizations.³⁰ In part, this was because Staff resources were reallocated from licensing

²⁸ We also received responses opposing these petitions, a motion for leave to reply to these responses, and an opposition to this motion for leave to reply. A list of these pleadings is included in the Appendix to the decision.

²⁹ Petitioners maintain that the Commission suspended all licensing actions in the aftermath of the TMI accident. Amended Petition at 25. Respondents argue, *e.g.*, that even after the TMI accident, "the Commission chose *not* to suspend ongoing licensing proceedings, but instead, on June 5, 1979, temporarily stopped issuing licenses for a short period pending its initial assessment of the accident." *E.g., Comanche Peak: Luminant Generation Company LLC's Answer in Opposition to Emergency Petition to Suspend Licensing Proceedings* (May 2, 2011), at 11 (emphasis in original).

³⁰ Following a May 31, 1979, meeting, the Commission directed the Staff to develop policy guidance addressing general principles for reaching licensing decisions, and to propose specific guidance to be applied for seven near-term operating license cases. See Staff Requirements – Discussion of Options Regarding Deferral of Licenses (May 31, 1979) (ML041900359).

reviews to TMI-related assignments.³¹ The so-called “licensing pause” also resulted from the Commission’s desire to ensure that lessons learned from the TMI accident were appropriately accounted for not only for operating reactors, but additionally for new reactor applications then under review. The Commission did not suspend adjudications during this time, although it did issue several iterations of adjudicatory guidance.

Beginning in October 1979, the Commission took several actions in fairly quick succession to provide guidance for power reactor adjudications. Initially, the Commission issued an interim policy statement where it determined that no new licenses for nuclear power reactors would be authorized by Atomic Safety and Licensing Boards, or issued by the NRC Staff, except after order of the Commission itself.³² Shortly thereafter, the Commission temporarily suspended the immediate effectiveness rule,³³ and set forth guidance for adjudications.³⁴ This policy required both Atomic Safety and Licensing Appeal Board consideration of effectiveness, and a Commission decision on effectiveness, prior to issuance of

³¹ See, e.g., SECY-79-344, “Interim NRR Organization to Deal with Impacts of TMI-2 and Other NRR Priority Tasks” (May 19, 1979) (ADAMS Legacy Library No. 7908030425) (detailing short-term realignment of resources and priorities in the Office of Nuclear Reactor Regulation to support TMI-related activities).

³² See Interim Statement of Policy and Procedure, 44 Fed. Reg. 58,559 (Oct. 10, 1979) (Interim Immediate Effectiveness Policy). At the same time, the Commission made clear that all other adjudicatory proceedings, “including enforcement and license amendment proceedings[,]” could continue, as could issuance of appellate decisions and partial initial decisions not related to issuance of new reactor licenses or permits. *Id.*

³³ See 10 C.F.R. § 2.764. This rule, subsequent to our 2004 10 C.F.R. Part 2 revisions, resides at 10 C.F.R. § 2.340 (See Final Rule, Changes to Adjudicatory Process, 69 Fed. Reg. 2182 (Jan. 14, 2004)).

³⁴ See Domestic Licensing Proceedings; Modified Adjudicatory Procedures, 44 Fed. Reg. 65,049 (Nov. 9, 1979). The amended procedures were set out as Appendix B to 10 C.F.R. Part 2. Appendix B, as a practical matter, provided for direct Commission review of licensing board decisions. In an *uncontested* operating license proceeding, the Commission would review informally the Staff recommendations, and the license would issue only after Commission action. *Id.* at 65,050.

any construction permit or operating license.³⁵ The Commission also directed the Boards, in deciding issues before them, to use the existing regulations, with the understanding that post-TMI analyses were still under way, and that, ultimately, compliance with then-existing rules might not be sufficient for an application to be approved.³⁶ Then-Chairman Hendrie formally announced a “licensing pause” on November 5, 1979.³⁷ The “licensing pause” lasted just a few months, ending in February 1980 with the issuance of a five percent power operating license for the Sequoyah facility.³⁸

After acting on three operating license applications and considering lessons learned, the

³⁵ *Id.* at 65,050. The “Appendix B” process nominally resulted in some delay in the issuance of operating licenses. One and a half years later, the Commission amended the immediate effectiveness rule as to operating license applications, by requiring direct, expedited Commission review of licensing board decisions in favor of granting operating licenses. The amendment eliminated the Appeal Board review required by Appendix B. These changes removed Appendix B and incorporated the revised procedures into 10 C.F.R. § 2.764. See *generally* Final Rule, Commission Review Procedures for Power Reactor Operating Licenses; Immediate Effectiveness Rule, 46 Fed. Reg. 28,627 (May 28, 1981). Shortly thereafter, the Commission again modified the rule, to delete the requirement that the Commission conduct an effectiveness review prior to fuel loading and low-power (up to five percent of rated power) testing. See *generally* Final Rule, Commission Review Procedures for Power Reactor Operating Licenses; Immediate Effectiveness Rule, 46 Fed. Reg. 47,764 (Sept. 30, 1981). Concurrently, the Commission issued a brief policy statement reiterating its intention that in uncontested cases the Commission still would authorize full power operation. Statement of Policy on Issuance of Uncontested Fuel Loading and Low Power Testing Operating Licenses, 46 Fed. Reg. 47,906 (Sept. 30, 1981).

³⁶ 44 Fed. Reg. at 65,050-51. The Commission advised that it would provide “case-by-case guidance” on changes as part of its own reviews in adjudicatory proceedings, which the Boards should apply in cases before them. *Id.*

³⁷ See Steve Wynkoop, *Gossick Resigns; NRC Responds to Kemeny with License ‘Pause,’* NUCLEONICS WEEK, Nov. 8, 1979, at 1.

³⁸ See NUREG/BR-0175, Rev. 2, “A Short History of Nuclear Regulation, 1946-2009” (Oct. 2010), at 59; Dircks, W.J., NRC, letter to R.J. Sherman, Atomic Industrial Forum, Inc. (Apr. 17, 1980). Six months later, the NRC issued the first full-power operating license following the TMI accident. *Id.*

Commission issued a third statement of policy in June 1980.³⁹ The Commission determined that operating license applications should be measured against our regulations, as augmented by several new requirements.⁴⁰ To facilitate adjudications, the Commission explained how to litigate TMI-related issues in operating license proceedings, and included guidance on certain case management issues.⁴¹ Notably, the Commission considered the question of timeliness, and directed that, where the time for filing contentions had expired in a given case, no new TMI-related contentions would be accepted absent a showing of good cause and a balancing of the late-filing factors.⁴² The Commission also directed boards to adhere strictly to our standards for reopening records, where applicable.⁴³

Just a few months later, in November 1980, the Commission approved a revision to its TMI Action Plan,⁴⁴ and shortly thereafter issued a revised policy statement.⁴⁵ Of note, the

³⁹ See Further Commission Guidance for Power Reactor Operating Licenses; Statement of Policy, 45 Fed. Reg. 41,738 (June 20, 1980) (June 1980 Policy Statement). Commissioners Gilinsky and Bradford provided separate and dissenting views, respectively.

⁴⁰ *Id.* at 41,739 (citing NUREG-0660, “NRC Action Plan Developed as a Result of the TMI-2 Accident” (May 1980) (ML072470526) (TMI Action Plan)).

⁴¹ *Id.* at 41,740. This guidance essentially expanded the scope of permissible contentions to include issues associated with TMI-related requirements that supplemented existing regulations.

⁴² *Id.* (citing 10 C.F.R. § 2.714(a)(1), now renumbered as 10 C.F.R. § 2.309(c), (f)(2)).

⁴³ “[F]or example, where initial decisions have been issued, the record should not be reopened to take evidence on some TMI-related issue unless the party seeking reopening shows that there is significant new evidence, not included in the record, that materially affects the decision.” *Id.* When challenged on this the following year, the Commission reiterated its expectation that parties would adhere to these requirements. See *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant), CLI-81-5, 13 NRC 361, 364-65 (1981).

⁴⁴ See generally NUREG-0737, “Clarification of TMI Action Plan Requirements” (Nov. 1980). Among other things, NUREG-0737 included revisions to previous requirements, more explicit requirements, and different schedules for implementation of actions.

⁴⁵ See Statement of Policy: Further Commission Guidance for Power Reactor Operating Licenses, CLI-80-42, 12 NRC 654 (1980) (December 1980 Policy Statement); *corrected by* Statement of Policy; Further Commission Guidance for Power Reactor Operating Licenses, 46 Fed. Reg. 15,242 (Mar. 4, 1981). Chairman Ahearne dissented.

Commission observed that many matters in the TMI Action Plan appropriately were addressed on a generic basis, rather than in individual adjudications. The Commission therefore recommended that litigants seeking to challenge new requirements provide additional, specific information supporting their challenges.⁴⁶

In 1981, the Commission proposed a rule that would have codified the TMI-related procedural provisions for operating license cases.⁴⁷ But the NRC never implemented a final rule because experience showed that the proposed guidance was rarely needed. The Commission observed that TMI-related issues were litigated in very few operating license proceedings, and concluded that the absence of a rule would not cause unnecessary delays in proceedings where such issues were raised.⁴⁸

Once all regulatory revisions implementing the TMI Action Plan had been completed, special TMI-related guidance no longer was needed. The Commission therefore rescinded the December 1980 Policy Statement in 1989.⁴⁹

⁴⁶ *Id.* at 660 (recommending that parties state “the nexus of the issue to the TMI-2 accident, . . . the significance of the issue, and . . . any differences between their positions and the rationale underlying the Commission[s] consideration of additional TMI-related requirements.”). The December 1980 Policy Statement reiterated the Commission’s expectations regarding the applicability of the late-filing and reopening rules. *Id.* at 661.

⁴⁷ See *generally* Proposed Rule, Licensing Requirements for Pending Operating License Applications, 46 Fed. Reg. 26,491 (May 13, 1981).

⁴⁸ Withdrawal of Proposed Rule, Licensing Requirements for Pending Operating License Applications, 48 Fed. Reg. 13,987, 13,988 (Apr. 1, 1983).

⁴⁹ See Statement of Policy on Litigation of TMI-Related Issues in Power Reactor Operating License Proceedings; Revocation of Superseded Policy Statement Concerning TMI-Related Procedures, 54 Fed. Reg. 7897 (Feb. 23, 1989). The Commission offered guidance for the litigation of TMI-related issues in operating license proceedings where the guidance might still be pertinent. *Id.* at 7898. As an administrative matter, the Commission also rescinded the October 1979 Interim Immediate Effectiveness Policy. *Id.* Concurrently, the Commission made minor revisions to the immediate effectiveness rule, to remove “TMI-related” portions of the rule that were no longer necessary. See Final Rule, Issuance or Amendment of Power Reactor License or Permit Following Initial Decision, 54 Fed. Reg. 7756, 7757 (Feb. 23, 1989). The “automatic stay” provisions were removed from 10 C.F.R. § 2.340 in 2007. See Final Rule, (continued . . .)

As this brief summary of the agency's actions makes clear, the NRC initiated a comprehensive analysis of the TMI accident immediately after it occurred. This analysis included thoughtful consideration of the potential ramifications of lessons learned for licensing decisions and ongoing adjudications. On the procedural front, the Commission provided guidance to facilitate adjudications and considered making formal changes to its Part 2 rules to codify this guidance. But throughout the evolution of this guidance, the Commission adhered to the fundamental premise that its procedural rules—as they related, for example, to new or amended contentions and to motions to reopen—should be applied in accordance with existing adjudicatory precedent and practices.

2. Events of September 11, 2001

The events of September 11, 2001, generated a flurry of litigation, including requests to suspend ongoing adjudications and licensing reviews. The Commission declined to suspend ongoing proceedings and licensing reviews. Instead, the agency pursued a top-to-bottom reassessment of its regulations and policies on terrorism generically, outside the adjudicatory process.

In October 2001, intervenor Georgians Against Nuclear Energy (GANE) and another requester filed a petition to suspend the mixed-oxide fuel fabrication proceeding (*MOX*) in view of the events of September 11.⁵⁰ The Commission denied the petition, finding no health and safety reason justifying suspension of the proceeding, no injury beyond litigation costs, ample time to implement new rules if appropriate, and value in moving forward with the proceeding in a timely and efficient way.⁵¹

Licenses, Certifications, and Approvals for Nuclear Power Plants, 72 Fed. Reg. 49,352, 49,415 (Aug. 28, 2007).

⁵⁰ See *Duke Cogema Stone & Webster* (Savannah River Mixed Oxide Fuel Fabrication Facility), CLI-01-28, 54 NRC 393, 397-98 (2001), *reconsideration denied*, CLI-02-2, 55 NRC 5 (2002).

⁵¹ *MOX*, CLI-01-28, 54 NRC at 398-401.

As GANE had in *MOX*, the State of Utah, in the *Private Fuel Storage* independent spent fuel storage installation (ISFSI) proceeding, petitioned the Commission to suspend licensing proceedings for the proposed ISFSI in light of the events of September 11.⁵² The Commission made three principal findings, which led it to deny Utah's suspension petition. First, the Commission found that even if the licensing, construction, and shipping processes went forward as planned, no radiological materials would be present onsite for at least two years, so there was no immediate threat to public safety.⁵³ Second, the Commission found that the interest in efficient adjudication would best be served if the proceeding went forward to resolve the numerous safety and environmental issues—many with no link to terrorism—at issue; moreover, the relief requested by Utah—suspension of the entire proceeding—was not narrowly tailored to the goal of adjudicatory efficiency.⁵⁴ Finally, the Commission found that continuing the proceeding would not thwart regulatory review, and that suspending the proceeding was not necessary to guarantee that the full benefit of the agency's post-September 11 review would be realized at the proposed facility.⁵⁵

In the *Catawba/McGuire* license renewal proceeding, intervenor Blue Ridge Environmental Defense League (BREDL) moved to dismiss an application to renew the operating licenses of four nuclear power units, as legally invalid.⁵⁶ In the alternative, BREDL asked the Commission to hold the proceeding in abeyance pending the Commission's

⁵² See *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-01-26, 54 NRC 376, 377-78 (2001).

⁵³ *Id.* at 380-81.

⁵⁴ *Id.* at 381-83.

⁵⁵ *Id.* at 383-84.

⁵⁶ *Duke Energy Corp.* (McGuire Nuclear Station, Units 1 and 2; Catawba Nuclear Station, Units 1 and 2), CLI-01-27, 54 NRC 385, 388 (2001).

comprehensive post-September 11 review of its rules and policies.⁵⁷ The Commission denied both the request to dismiss the proceeding and the alternative request to hold it in abeyance.⁵⁸ Noting the early stage of the proceeding—contentions had only just been submitted and the Board had not yet ruled on them—the Commission found that there was no risk of immediate threat to public health and safety, that there were non-terrorism related contentions to be considered, and that the only “harm” to BREDL would be inevitable litigation costs.⁵⁹ The Commission pointed out that any changes in rules that might bear on license renewal reviews could be addressed via late-filed contentions.⁶⁰ Additionally, the Commission reasoned that there would be time to apply any new rules that might result from the generic review of terrorism-related issues.⁶¹

While bearing in mind the history of Commission actions following the TMI accident, we look to the more recent post-September 11 “suspension-of-proceedings” cases for the framework under which we consider the current petitions.⁶²

II. DISCUSSION

A. Legal Framework

The petitions do not fall neatly within our regulations—the sole provision explicitly authorizing stay applications is available only to parties to adjudicatory proceedings seeking stays of decisions or actions of a presiding officer pending the filing and resolution of a petition

⁵⁷ *Id.*

⁵⁸ *Id.* at 388, 392.

⁵⁹ *Id.* at 390-91.

⁶⁰ *Id.* at 391.

⁶¹ *Id.*

⁶² See also *Pacific Gas and Electric Co.* (Diablo Canyon Power Plant Independent Spent Fuel Storage Installation), CLI-02-23, 56 NRC 230 (2002).

for review.⁶³ That is not the situation here. We previously considered requests to suspend or hold proceedings in abeyance in a number of proceedings following the September 11 terrorist attacks, as well as more recently, pursuant to our inherent supervisory authority over agency proceedings.⁶⁴ We exercise this supervisory authority again today.⁶⁵

We consider “suspension of licensing proceedings a ‘drastic’ action that is not warranted absent ‘immediate threats to public health and safety,’ ”⁶⁶ or other compelling reason. The three criteria articulated in the post-September 11 *Private Fuel Storage* proceeding are apt here, where we face analogous circumstances, and we apply them today. Thus, we consider, first, “whether moving forward . . . will jeopardize the public health and safety.”⁶⁷ Second, we

⁶³ See 10 C.F.R. § 2.342.

⁶⁴ See *Private Fuel Storage*, CLI-01-26, 54 NRC 376; *Catawba/McGuire*, CLI-01-27, 54 NRC 385; *MOX*, CLI-01-28, 54 NRC 393; *Diablo Canyon*, CLI-02-23, 56 NRC 230. See also *AmerGen Energy Co., LLC* (Oyster Creek Nuclear Generating Station); *Entergy Nuclear Operations, Inc.* (Indian Point, Units 2 and 3); *Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station); *Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), CLI-08-23, 68 NRC 461, 484-85 (2008) (citing *Private Fuel Storage*, CLI-01-26, 54 NRC 376; *Diablo Canyon*, CLI-02-23, 56 NRC 230; *MOX*, CLI-01-28, 54 NRC 393) (considering petitions to suspend multiple license renewal proceedings in view of an Inspector General’s report on the agency’s license renewal process).

⁶⁵ Because we consider the petitions, and take action, in our supervisory capacity, we need not address a number of procedural issues that would merit further discussion in a traditional adjudication. As Entergy Nuclear Operations, Inc. (Entergy) points out: “While the NRC rules require that motions be addressed to the Presiding Officer when a proceeding is pending, the Commission has previously indicated that suspension motions such as this are best addressed to it.” *Pilgrim & Indian Point: Entergy’s Answer Opposing Petition to Suspend Licensing Proceedings* (May 2, 2011), at 2 (citing *Oyster Creek/Indian Point/Pilgrim/Vermont Yankee*, CLI-08-23, 68 NRC at 476; *Diablo Canyon*, CLI-02-23, 56 NRC at 237). We agree that the filings here are appropriately brought before us in this instance. We do not address whether certain of the petitions (for example, filed on the *Callaway* and *Columbia Generating Station* dockets), are appropriate, given that they were filed in the absence of an ongoing adjudication. We also do not address the procedural propriety of a number of filings not contemplated by the Secretary’s Scheduling Order, including petitioners’ motions for leave to reply, answers to those motions, and various supplements filed after the date specified in the Scheduling Order. The participants should assume our familiarity with all relevant filings.

⁶⁶ *Oyster Creek/Indian Point/Pilgrim/Vermont Yankee*, CLI-08-23, 68 NRC at 484.

⁶⁷ *Private Fuel Storage*, CLI-01-26, 54 NRC at 380.

examine whether continuing the review process will “prove an obstacle to fair and efficient decision[-]making.”⁶⁸ Third, we decide whether going forward will “prevent appropriate implementation of any pertinent rule or policy changes that might emerge from our . . . ongoing evaluation.”⁶⁹

B. Analysis

As stated above, petitioners ask for a number of remedies. We consider each in turn.

1. Suspension Requests

The first three remedies sought by petitioners relate to suspension of decisions or proceedings for reasons related to the NRC’s review of the implications of the events at Fukushima. Petitioners request:

- Suspension of “all decisions regarding the issuance of construction permits, new reactor licenses, [Combined Licenses (COLs)], [Early Site Permits (ESPs)], license renewals, or standardized design certification pending completion by the NRC’s Task Force of its investigation of the near-term and long-term lessons of the Fukushima accident and the issuance of any proposed regulatory decisions and/or environmental analyses of those issues.”⁷⁰
- Suspension of all proceedings—specifically, all hearings and opportunities for public comment—on reactor or spent fuel pool issues identified for investigation by the Task Force, including external event issues, station blackout, severe accident measures, implementation of 10 C.F.R. § 50.54(hh)(2) requirements on response to fire or explosions, and emergency preparedness.⁷¹
- Suspension of proceedings in connection with any other issues identified by the Task Force pending completion of the Task Force’s investigation of those issues and issuance of any proposed regulatory decisions and/or environmental analyses.⁷²

As discussed below, we deny these requests.

⁶⁸ *Id.*

⁶⁹ *Id.* There, the evaluation pertained to terrorism-related policies. Here, the evaluation relates to the domestic implications of the Fukushima events.

⁷⁰ Amended Petition at 28. See also *id.* at 1-2.

⁷¹ *Id.* at 2, 28.

⁷² *Id.* at 2, 28-29.

According to petitioners, should the NRC continue to issue licenses and apply any lessons-learned retrospectively, its actions would be inconsistent with the AEA and NEPA.⁷³ Petitioners argue that “the NRC may not issue a license for a reactor if it would pose an ‘undue risk’ to public health and safety or the common security.”⁷⁴ To support their argument, petitioners point to the AEA’s prohibition against issuing a license if issuance would be “inimical to the common defense and security or to the health and safety of the public.”⁷⁵ Petitioners argue that “[t]he list of issues identified for investigation in the Task Force Charter demonstrates that the Fukushima accident raises significant questions about the adequacy of the NRC’s regulatory program,” and that it would be “almost impossible” for the NRC to make definitive findings on safety until after the Task Force completes its work.⁷⁶

Respondents reason, as a general matter, that the Petition does not offer a basis for suspending proceedings because the standards we have previously applied, as enumerated in the *Private Fuel Storage* proceeding, have not been satisfied.⁷⁷ Respondents argue that moving forward with ongoing Staff safety and environmental reviews and with hearings on admitted contentions will not threaten public health and safety or impede implementation of any regulatory changes necessitated by the NRC’s evaluation of the events in Japan, and that stopping the licensing process would be needlessly inefficient.⁷⁸ Respondents argue that the NRC has wide discretion to proceed with its usual licensing activities while the agency’s

⁷³ *Id.* at 27.

⁷⁴ *Id.* at 25.

⁷⁵ AEA § 103(d), 42 U.S.C. § 2133. (Petitioners cite 42 U.S.C. § 2311, Amended Petition at 25; we expect they intended § 2133.)

⁷⁶ Amended Petition at 25.

⁷⁷ *Columbia Generating Station: Energy Northwest’s Answer in Opposition to Emergency Petition to Suspend Licensing Proceedings* (May 2, 2011), at 14-15.

⁷⁸ See, e.g., *Calvert Cliffs: Opposition to Emergency Petition to Suspend Licensing Decisions and Proceedings* (May 2, 2011), at 5.

investigation of the implications of the Fukushima accident for U.S. facilities proceeds.

Respondents maintain that the NRC already has “exercised this discretion by allowing pending licensing actions to continue without interruption while the agency evaluates the regulatory significance of the Fukushima events.”⁷⁹

As discussed above, the events at Fukushima have prompted a comprehensive review of our regulations and practices and, as a result of this review, we may determine that regulatory or procedural changes are warranted. However, nothing we have learned to date puts the continued safety of our currently operating regulated facilities, including reactors and spent fuel pools, into question. Similarly, nothing learned to date requires immediate cessation of our review of license applications or proposed reactor designs. Significantly, the Petition fails to identify specific problems with any captioned COL application, license renewal application, or design certification rulemaking. This lack of a specific link between the relief requested and the particulars of the individual applications makes it difficult to conclude that moving forward with any individual licensing decision or proceeding will have a negative impact on public health and safety.

Petitioners have not shown that any of the license applications would pose an immediate threat to the public health and safety, if licensing activities are continued. At bottom, this is a practical consideration—in the case of every captioned new reactor license application, for

⁷⁹ *Levy County: Progress Energy Florida, Inc.’s Response Opposing Emergency Petition to Suspend All Pending Licensing Decisions and Related Rulemaking Decisions Pending Investigation of Lessons Learned from the Fukushima Daiichi Nuclear Power Station Accident* (May 2, 2011), at 14. In this connection, respondents note the approval of the Vermont Yankee license renewal application on March 28, 2011, and the approval of the renewal of the licenses for the Palo Verde Nuclear Generating Station units on April 29, 2011. *Id.* (citing Entergy Nuclear Operations, Inc.; Vermont Yankee Nuclear Power Station; Notice of Issuance of Renewed Facility Operating License No. DPR-28 for an Additional 20-Year Period; Record of Decision, 76 Fed. Reg. 17,162 (Mar. 28, 2011); Arizona Public Service Company; Palo Verde Nuclear Generating Station, Units 1, 2, and 3, Notice of Issuance of Renewed Facility Operating License Nos. NPF-41, NPF-51, and NPF-74 for an Additional 20-Year Period; Record of Decision, 76 Fed. Reg. 24,064 (Apr. 29, 2011)).

example, the proposed plants are years away from being placed into operation. We have factored this concept of immediacy into past decisions where suspension of a proceeding has been sought after significant and unusual events. We denied requests to immediately suspend proceedings in the aftermath of the September 11 attacks, finding suspension neither necessary nor appropriate. In the *Private Fuel Storage* case, where shipments of spent fuel to the facility were at least two years down the road, we found no immediate threat that the facility might be targeted for terrorists.⁸⁰ Similarly, in the post-September 11 *Diablo Canyon* proceeding, we denied a request for suspension, finding that there was “no reason to believe that any danger to public health and safety would result from *mere continuation of this adjudicatory proceeding*.”⁸¹

The same reasoning holds true for the matters for which petitioners request suspension. For example, licensing decisions for pending COL applications are months and, in many cases, years away and fuel loading into completed reactors is still further away; continuation of these reviews poses no immediate threat to public health and safety.⁸²

⁸⁰ *Private Fuel Storage*, CLI-01-26, 54 NRC at 378.

⁸¹ *Diablo Canyon*, CLI-02-23, 56 NRC at 239 (emphasis in original). See also *Potential Implications of Chernobyl Accident for All NRC-Licensed Facilities*, DD-87-21, 26 NRC 520 (1987).

⁸² *Callaway*—Staff’s review was suspended at the applicant’s request, proceeding terminated in August 2009 pursuant to settlement agreement (*Ameren Missouri Response to Emergency Petition* (May 2, 2011), at 2-3); *Calvert Cliffs*—final safety evaluation report (SER) scheduled for completion in January 2013 (*Calvert Cliffs Opposition to Emergency Petition to Suspend Licensing Decisions and Proceedings* (May 2, 2011), at 4); *Fermi*—final SER is scheduled for completion in September 2012, followed by final environmental impact statement (EIS) in November 2012 (*Detroit Edison Opposition to Emergency Petition to Suspend Licensing Decisions and Proceedings* (May 2, 2011), at 4); *William States Lee III*—final decision on the application is not expected until late 2012 or early 2013 (*Answer of Duke Energy Carolinas LLC Opposing Petition to Suspend All Pending Reactor License Proceedings* (May 2, 2011), at 7); *Turkey Point*—reactors are “years away” from receiving licenses and are at least ten years away from operation (*Florida Power & Light Response Opposing Petition to Suspend All Pending Licensing Decisions and Related Rulemaking Decisions Pending Investigation of Lessons Learned from the Fukushima Daiichi Nuclear Power Station Accident* (May 2, 2011), at 12); *Comanche Peak*—a petition for review of a board contention admissibility decision is pending before the Commission, and a final decision on the complete application is not expected until late 2013 (*Luminant Generation Company LLC’s Answer in Opposition to* (continued . . .)

Our regulatory processes provide sufficient time and avenues to ensure that design certifications and COLs satisfy any Commission-directed changes before any new power plant commences operations.⁸³ This is demonstrated by the implementation strategy for new reactor licensing outlined in the Near-Term Report. Whether we adopt the Task Force recommendations or require more, or different, actions associated with certified designs or COL

Emergency Petition to Suspend Licensing Proceedings (May 2, 2011), at 3, 10); *Bell Bend*—final SER expected in August 2012, no date for final EIS; (*Opposition to Emergency Petition* (May 2, 2011), at 3); *Shearon Harris*—the current projected start date for the first of the two units is, at the earliest, the first quarter of 2026, and the final EIS is not due to be issued until January 2014 (*Progress Energy Carolina, Inc.’s Response Opposing Emergency Petition to Suspend All Pending Licensing Decisions and Related Rulemaking Decisions Pending Investigation of Lessons Learned from the Fukushima Daiichi Nuclear Power Station Accident* (May 2, 2011), at 12, 20); *Levy County*—the current projected start date for operation of the first unit is projected for the second quarter of 2021, at the earliest (*Progress Energy Florida, Inc.’s Response Opposing Emergency Petition to Suspend All Pending Licensing Decisions and Related Rulemaking Decisions Pending Investigation of Lessons Learned from the Fukushima Daiichi Nuclear Power Station Accident* (May 2, 2011), at 10); *Virgil C. Summer*—the applicant expects a final decision on its COL application in the fall of 2011, but construction would not be completed for at least several years thereafter (*South Carolina Electric & Gas Company’s Answer in Opposition to Emergency Petition to Suspend Licensing Proceedings* (May 2, 2011), at 10); *South Texas*—the applicant expects a decision on the *South Texas* COL application sometime in 2012, but even if granted, construction would not be completed for at least several years (*Nuclear Innovation North America LLC’s Answer in Opposition to Emergency Petition to Suspend Licensing Proceedings* (May 2, 2011), at 9); *Vogtle*—“Vogtle Unit 3 will not go online until 2016, five years from now” (*Southern Nuclear Operating Company’s Answer to 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* (May 2, 2011), at 13); *Bellefonte*—currently deferred, with no decision on whether the units ever will be constructed (*Tennessee Valley Authority’s Answer in Opposition to Emergency Petition to Suspend Licensing Proceedings* (May 2, 2011), at 11); *North Anna*—the projected date for completing the mandatory hearing is in November 2013 (*Dominion’s Answer Opposing Petition to Suspend Pending Licensing Proceedings* (May 2, 2011), at 4).

⁸³ With respect to the timing associated with the Watts Bar operating license application, TVA states that it does not expect the proceeding to be completed until 2012, with operations to start sometime later. *Tennessee Valley Authority’s Answer in Opposition to Emergency Petition to Suspend Licensing Proceedings* (May 2, 2011), at 11. Here again, the agency has ample authority and time to make appropriate changes prior to commencement of operation of the plant. Any necessary changes that may be implemented post-license issuance would be imposed on the facility in the same manner as for operating reactors. Similarly, therefore, we find no imminent risk that would compel a stay of either the ongoing licensing review, or the associated adjudication.

applications, we have the authority to ensure that certified designs and combined licenses include appropriate Commission-directed changes before operation. We therefore find no imminent risk to public health and safety or to the common defense and security that necessitates a stay of new reactor licensing actions or adjudications.

The situation is similar for pending license renewal applications, where the period of extended operation, provided renewed licenses are issued, will not begin for, at a minimum, nearly a year, and, in the majority of cases, for several years.⁸⁴ In our view, there is no imminent threat to public health and safety that requires suspension of any of these proceedings or the associated licensing decisions now.⁸⁵

We further find that it is in the public interest that adjudicatory proceedings (as applicable) and licensing reviews continue. During the pendency of the agency's review, as respondents point out, safety and environmental contentions raised in our ongoing proceedings, "many with no conceivable connection to the accident in Japan or the issues identified in the

⁸⁴ *Columbia Generating Station*—current operating license expires on December 20, 2023 (*Energy Northwest's Answer in Opposition to Emergency Petition to Suspend Licensing Proceedings* (May 2, 2011), at 17); *Pilgrim*—current operating license expires on June 8, 2012 (*Entergy's Answer Opposing Petition to Suspend Pending Licensing Proceedings* (May 2, 2011), at 4); *Indian Point*—for Unit 2, the current operating license expires on September 9, 2013, and for Unit 3, the current operating license expires on December 12, 2015 (*Entergy's Answer Opposing Petition to Suspend Pending Licensing Proceedings* (May 2, 2011), at 5); *Davis-Besse*—current operating license expires on April 22, 2017 (*FirstEnergy's Answer in Opposition to Emergency Petition to Suspend Licensing Proceedings* (May 2, 2011), at 3); *Seabrook*—NRC decision on license renewal is not expected until December 2012 (*Answer of NextEra Energy Seabrook LLC Opposing Petition to Suspend Pending Licensing Proceedings* (May 2, 2011), at 2-3); and, *Diablo Canyon*—the final decision on the license renewal application has been significantly delayed (see Holian, Brian E., NRC, letter to John Conway, Pacific Gas and Electric Co., "Response to Request for Deferral of Issuance of Renewed Operating Licenses and Revision of Schedule for the Review of the Diablo Canyon Nuclear Power Plant, Units 1 and 2, License Renewal Application" (May 31, 2011) (ML111520068); *Pacific Gas & Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), Notice of 52-Month Delay and Order Requiring Status Reports (June 7, 2011) (unpublished)).

⁸⁵ See generally *Catawba/McGuire*, CLI-01-27, 54 NRC at 390-91.

Task Force Charter,” can, and should, be resolved.⁸⁶ As we stated in *Private Fuel Storage*, we have “a responsibility to go forward with other regulatory and enforcement activities even while” the agency conducts its review.⁸⁷ To the extent that our comprehensive review leads to new rules applicable to any pending application, we have sufficient authority and time to apply them to any new license that may be issued.

License renewal presents an additional circumstance factoring into our decision. As respondents argue, our license renewal review is a limited one, focused on aging management issues.⁸⁸ It is not clear whether any enhancements or changes considered by the Task Force will bear on our *license renewal* regulations, which encompass a more limited review. The NRC’s ongoing regulatory and oversight processes provide reasonable assurance that each facility complies with its “current licensing basis,” which can be adjusted by future Commission order or by modification to the facility’s operating license outside the renewal proceeding (perhaps even in parallel with the ongoing license renewal review).⁸⁹ As one respondent points out, “the Commission is conducting extensive reviews to identify and apply the lessons learned from the Fukushima Daiichi accident, and has made it clear that it will use the information from these activities to impose any requirements it deems necessary, irrespective of whether a plant

⁸⁶ *Columbia Generating Station: Energy Northwest’s Answer in Opposition to Emergency Petition to Suspend Licensing Proceedings* (May 2, 2011), at 17.

⁸⁷ *Private Fuel Storage*, CLI-01-26, 54 NRC at 381 (citing *Statement of Policy on Adjudicatory Proceedings*, CLI-98-12, 48 NRC 18 (1998), reaffirming the Commission’s commitment to efficient and expeditious processing of adjudications).

⁸⁸ See, e.g., *Columbia Generating Station: Energy Northwest’s Answer in Opposition to Emergency Petition to Suspend Licensing Proceedings* (May 2, 2011), at 20. See generally *Pilgrim*, CLI-10-14, 71 NRC ___, ___ (June 17, 2010) (slip op. at 4-8).

⁸⁹ See Final Rule, Nuclear Power Plant License Renewal, 56 Fed. Reg. 64,943, 64,949, 64,953-54 (Dec. 13, 1991) (explaining that the current licensing basis can be modified at any time to resolve emerging concerns, and expressly noting a change in the final rule to the definition of “current licensing basis” to ensure that changes could be made to the existing 10 C.F.R. Part 50 license while the 10 C.F.R. Part 54 license renewal application is under review).

is applying for or has been granted a renewed operating license.”⁹⁰ We agree. Further, we do not believe that an imminent risk will exist during the time period needed to apply any necessary changes to operating plants, whether a license renewal application is pending or not.⁹¹ Therefore, allowing these proceedings to continue will not prevent the appropriate implementation of any rule or policy changes we may make as a result of our post-Fukushima review.

Moreover, nothing in the Petition or in Dr. Makhijani’s Declaration persuades us otherwise. Respondents argue that Dr. Makhijani “provides no information showing that U.S. plants (particularly those on the east coast) are vulnerable to the type of accident scenarios that occurred at Fukushima Daiichi. In particular, he makes no showing that tsunami or station blackout risk at these plants is higher than previously assumed, or that spent fuel pool risk at U.S. plants is anything other than very low.”⁹² We essentially agree—Dr. Makhijani provides mostly speculation, not facts or evidence, on potential implications for U.S. facilities. He states

⁹⁰ *Pilgrim & Indian Point: Entergy’s Answer Opposing Petition to Suspend Pending Licensing Proceedings* (May 2, 2011), at 3.

⁹¹ However, to the extent that issues appropriately within the scope of license renewal are identified, our procedural rules provide avenues for the submission of proposed contentions on those issues. See 10 C.F.R. § 2.309(c), (f)(1)-(2). For example, prior to issuance of the Near-Term Report, one intervenor (in the *Pilgrim* proceeding) filed two new contentions associated with the Fukushima events. See *Pilgrim Watch Request for Hearing on Post Fukushima SAMA Contention* (May 12, 2011); *Pilgrim Watch Request for Hearing on a New Contention Regarding Inadequacy of Environmental Report, Post Fukushima* (June 1, 2011). (The Board has since ruled on these requests, and rejected them pursuant to 10 C.F.R. §§ 2.326, 2.309(c), and 2.309(f)(1). See *Entergy Nuclear Generation Co. and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), LBP-11-23, 74 NRC ____ (Sept. 8, 2011) (Young, J., concurring in part and dissenting in part).) Since issuance of the report, new contentions have been filed in a number of ongoing license renewal cases. See, e.g., *Motion to Admit New Contention Regarding the Safety and Environmental Implications of the Nuclear Regulatory Commission Task Force Report on the Fukushima Dai-ichi Accident* (Aug. 11, 2011) (Diablo Canyon); *Friends of the Coast and New England Coalition’s Contention Regarding NEPA Requirement to Address Safety and Environmental Implications of the Fukushima Task Force Report* (Aug. 11, 2011) (Seabrook).

⁹² *Id.* at 22.

that he “believe[s]” that “if” new information from the Japanese event is taken into account in the NRC’s analyses, then “it is likely” to change those analyses.⁹³ In connection with safety issues, he says that information learned as a result of the Japan event “is likely to result in more rigorous regulation.”⁹⁴ He goes on to predict that “[i]t is likely that more . . . protective features will be needed . . . [and i]t is also likely that additional measures involving significant costs will have to be taken,”⁹⁵ and, consequently, an economic analysis “may well result in a decision that licensing of new reactors and re-licensing of existing reactors is not cost-effective.”⁹⁶ And “[t]herefore . . . [he] believe[s] it is reasonable and necessary for the NRC to suspend licensing and re-licensing decisions and standardized design certifications until the NRC completes its review of the regulatory implications of the Fukushima accident.”⁹⁷

As discussed further in Section II.B.3., *infra*, to the extent that the petitions seek agency consideration of issues that were within the scope of the near-term Task Force charter or that we subsequently direct the Staff to review, the request is granted. In fact, the Makhijani Declaration points to a number of the same areas that the Task Force examined, and it may be that we take actions that will address concerns similar to Dr. Makhijani’s. On balance, however, Dr. Makhijani’s broad assertions are insufficient to support an immediate freeze of licensing decisions, and we do not institute one today.

As discussed above, the Task Force has provided us with its recommendations for short-term and long-term agency action. Our consideration of the Task Force’s recommendations, and the efforts we have directed the Staff to undertake based on those

⁹³ Makhijani Declaration at 12, ¶ 34.

⁹⁴ *Id.*

⁹⁵ *Id.* at 12, ¶ 36.

⁹⁶ *Id.*

⁹⁷ *Id.* at 13, ¶ 37.

recommendations⁹⁸ may result in actions including the issuance of regulatory and policy direction. Moreover, as the report reflects, the mechanisms and consequences of the events at Fukushima are not yet fully understood. If our consideration of the Near-Term Report or the results of the longer-term review of hazards like those that damaged reactors at the Fukushima site ultimately causes the NRC to revise its requirements, licensees may well become subject to new regulations or agency orders. But safety and environmental regulation is by its very nature a dynamic process. Outside the context of the events at Fukushima, new information and new analyses constantly emerge and may lead to fresh regulatory approaches. That is not a reason to halt ongoing regulatory activity in the meantime. Even for the licenses that the NRC issues before completing its review, any new Fukushima-driven requirements can be imposed later, if necessary to protect the public health and safety.⁹⁹

In sum, we find no imminent risk to public health and safety if we allow our regulatory processes to continue. Instead of finding obstacles to fair and efficient decision-making, we see benefits from allowing our processes to continue so that issues unrelated to the Task Force's review can be resolved. We have well-established processes for imposing any new requirements necessary to protect public health and safety and the common defense and security. Moving forward with our decisions and proceedings will have no effect on the NRC's ability to implement necessary rule or policy changes that might come out of our review of the Fukushima Daiichi events.

⁹⁸ See SRM on Near-Term Report.

⁹⁹ See *Private Fuel Storage*, CLI-01-26, 54 NRC at 383-84.

2. ***National Environmental Policy Act***

Our licensing reviews include (among other things) assessment of the environmental impacts of severe accidents, as well as severe accident mitigation alternatives.¹⁰⁰ Petitioners request that the NRC conduct a separate generic NEPA analysis regarding whether the Fukushima events constitute “new and significant information” under NEPA that must be analyzed as part of the environmental review for new reactor and license renewal decisions.¹⁰¹ At bottom, according to petitioners, such a review is required now because the NRC has “admitted” that it “has new information that concededly could have a significant effect on its regulatory program and the outcome of its licensing decisions for individual reactors.”¹⁰²

This request is premature. Although the Task Force completed its review and provided its recommendations to us, the agency continues to evaluate the accident and its implications for U.S. facilities and the full picture of what happened at Fukushima is still far from clear. In short, we do not know today the full implications of the Japan events for U.S. facilities. Therefore, any generic NEPA duty—if one were appropriate at all—does not accrue now.

If, however, new and significant information comes to light that requires consideration as part of the ongoing preparation of application-specific NEPA documents, the agency will assess

¹⁰⁰ See, e.g., 10 C.F.R. § 51.53(c)(3)(ii)(L) (requiring a site-specific consideration of severe accident mitigation alternatives at the time of license renewal, unless a previous consideration of such alternatives regarding plant operation has been included in a final environmental impact statement, final environmental assessment, or a related supplement); 10 C.F.R. Part 51, Subpart A, Appendix B, Table B-1, “Summary of Findings on NEPA Issues for License Renewal of Nuclear Power Plants” (reflecting the conclusion for the generic analysis of severe accidents, that the probability-weighted consequences of atmospheric releases, fallout onto open bodies of water, releases to groundwater, and societal and economic impacts of severe accidents are of small significance for all plants); 10 C.F.R. §§ 51.45 (requiring consideration of alternatives in environmental reports), 51.50(c) (requiring an environmental report for a combined license application); *Limerick Ecology Action v. NRC*, 869 F.2d 719 (3d Cir. 1989) (requiring that the NRC include consideration of certain SAMAs in environmental reviews performed under NEPA Section 102(2) in conjunction with operating license applications).

¹⁰¹ Amended Petition at 2, 29.

¹⁰² *Id.* at 26-27.

the significance of that information, as appropriate. Our regulations specify the circumstances under which the Staff must prepare supplemental environmental review documents. Section 51.72(a) requires preparation of a supplemental draft EIS when:

- (1) There are substantial changes in the proposed action that are relevant to environmental concerns; or
- (2) There are significant *new circumstances or information* relevant to environmental concerns and *bearing on the proposed action or its impacts*.¹⁰³

To merit this additional review, information must be both “new” and “significant,” and it must bear on the proposed action or its impacts. As we have explained, “[t]he new information must present ‘a seriously different picture of the environmental impact of the proposed project from what was previously envisioned.’”¹⁰⁴ That is not the case here, given the current state of information available to us. For these reasons, we decline petitioners’ request to commence a generic NEPA review today.

3. Request for Safety Analysis

Petitioners request that the NRC perform a safety analysis of the regulatory implications of the events at Fukushima. Petitioners request that long-term measures be issued as proposed rules (with opportunity for comment).¹⁰⁵

¹⁰³ 10 C.F.R. § 51.72(a) (emphasis added). Section § 51.92(a) sets forth substantively identical requirements for preparation of supplemental final EISs. In addition, the NRC Staff has the option of preparing a supplement to a draft or final EIS “when, in its opinion, preparation of a supplement will further the purposes of NEPA.” See 10 C.F.R. §§ 51.72(b), 51.92(c).

¹⁰⁴ See *Hydro Resources, Inc.* (2929 Coors Road, Suite 101, Albuquerque, NM 87120), CLI-99-22, 50 NRC 3, 14 (1999) (citing *Marsh v. Oregon Natural Resources Council*, 490 U.S. 360, 373 (1989); *Sierra Club v. Froehlke*, 816 F.2d 205, 210 (5th Cir. 1987)). As to license renewal in particular, the NRC Staff currently is preparing an update to the 1996 Generic Environmental Impact Statement (GEIS) for license renewal. See *generally* Proposed Rule, Revisions to Environmental Review for Renewal of Nuclear Power Plant Operating Licenses, 74 Fed. Reg. 38,117 (July 31, 2009).

¹⁰⁵ Amended Petition at 2, 29.

This request has, in essence, been granted. As explained above, we initiated a comprehensive examination of the implications of the Fukushima accident for U.S. facilities, establishing a Task Force instructed to undertake near-term review and to make recommendations for future actions.¹⁰⁶ After we received the Near-Term Report, we directed further Staff action, including longer-term review of the implications of the accident for U.S. facilities. As a result, the NRC may implement changes to its regulations and regulatory processes. These changes may be accomplished in a variety of ways, such as via issuance of Commission orders, or by formal changes to our regulations, all pursuant to our normal processes, which include appropriate opportunities for public and stakeholder input.

4. Scheduling and Procedural Request

Petitioners request that we “establish procedures and a timetable for raising new issues relevant to the Fukushima accident in pending licensing proceedings” to include a sixty-day period for raising new issues following the publication of regulatory proposals or environmental decisions.¹⁰⁷ Petitioners also seek the suspension of the requirement to satisfy late-filing standards if the relevance of the new issue to the Fukushima events can be demonstrated.¹⁰⁸

Petitioners maintain that we should modify our procedural rules by creating special timeliness definitions for new contentions and by setting out special processes for judging motions to reopen. Petitioners seek to ensure that boards in the various proceedings apply uniform standards for admitting contentions spawned by the events in Fukushima and to

¹⁰⁶ Petitioners request that we publish the results of our analysis for public comment. *Id.* at 2, 29. While the analysis will not be published specifically for public comment, we grant the request to the extent that we directed the Task Force efforts to be “informed by some stakeholder input,” and that, during the longer-term review, the agency should “receive input from and interact with all key stakeholders.” Tasking Memorandum at 1, 2 (unnumbered).

¹⁰⁷ Amended Petition at 29.

¹⁰⁸ *Id.*

establish an ordered process for applying “lessons learned” from those events.¹⁰⁹ Petitioners claim that the Commission will be better served if it establishes such an ordered process; without it, “intervenor groups will be placed in the position of rushing to file contentions, rulemaking comments, and motions to reopen closed hearing records, based on whatever evaluations they are able to make of slowly-emerging and ever-evolving information from the accident.”¹¹⁰

Respondents disagree, arguing that “NRC regulations and case law already provide clear and uniform standards to determine the timeliness of motions to add new contentions or to reopen the record” and this situation should not be treated differently.¹¹¹

As a general matter, we agree with the respondents’ assessment. Our normal processes for filing new or amended contentions, submitting rulemaking comments, and motions (including motions to reopen) carry with them costs typically associated with participation in litigation and rulemaking. Participants accept these costs when they elect to participate in our proceedings; our rules require a level of engagement that far exceeds simple interest in the outcome of a proceeding. For example, our rules deliberately place a heavy burden on proponents of contentions, who must challenge aspects of license applications with specificity, backed up with substantive technical support; mere conclusions or speculation will not suffice.¹¹² An even heavier burden applies to motions to reopen.¹¹³

¹⁰⁹ *Id.* at 23.

¹¹⁰ *Id.* at 23-24.

¹¹¹ *Comanche Peak: Luminant Generation Company LLC’s Answer in Opposition to Emergency Petition to Suspend Licensing Proceedings* (May 2, 2011), at 17.

¹¹² *See, e.g., AmerGen Energy Company, LLC* (Oyster Creek Nuclear Generating Station), CLI-09-7, 69 NRC 235, 259-61 (2009).

¹¹³ *See, e.g., id.* at 286-87. *See generally* 10 C.F.R. § 2.326.

Following the events of September 11, 2001, in ruling on petitions to intervene, the admissibility of new or amended contentions filed after initial petitions, and motions to reopen, the Commission did not deviate from its usual application of the Part 2 procedural rules. In the *Private Fuel Storage* case, intervenor State of Utah petitioned the Board for admission of a late-filed contention related to the risk of a terrorist attack on the ISFSI. The Board applied the late-filed contention standards to Utah's petition, and found the contention timely,¹¹⁴ but nonetheless denied admission of both the safety and environmental aspects of the contention.¹¹⁵ The Board referred its rulings to the Commission for further consideration.¹¹⁶ The Commission accepted review of the Board's ruling on the safety and environmental aspects of the contention, but declined the referral with respect to the Board's application of the late-filing factors.¹¹⁷

In another example, a proceeding in which the adjudicatory record had closed, the intervenors submitted a contention arguing that the September 11 events required additional environmental analysis of the proposed action. The Board applied, and found that the intervenors had satisfied, our rules for reopening the record and for late-filed contentions, but found that the contention was inadmissible. The Board referred its ruling to the Commission,¹¹⁸ which subsequently affirmed the Board's decision.¹¹⁹

¹¹⁴ *Private Fuel Storage*, LBP-01-37, 54 NRC 476, 483-84 (2001).

¹¹⁵ *Id.* at 484-87.

¹¹⁶ *Id.* at 487-88.

¹¹⁷ *Private Fuel Storage*, CLI-02-3, 55 NRC 155, 156 & 156 n.9 (2002). The Commission ultimately affirmed the Board's decision. *Private Fuel Storage*, CLI-02-25, 56 NRC 340, 357 (2002).

¹¹⁸ *Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Unit 3), LBP-02-5, 55 NRC 131, 145 (2002) (involving a license amendment request for reconfiguring a spent fuel pool).

¹¹⁹ *Millstone*, CLI-02-27, 56 NRC 367, 371-72 (2002).

In these post-September 11 cases, the Boards applied the existing procedural rules for issues raised late in ongoing adjudications.¹²⁰ We see no reason to proceed differently here. Reactor adjudications should go forward, including those that may involve proposed contentions based on issues implicated by the Fukushima events. To the extent that the Fukushima events provide the basis for contentions appropriate for litigation in individual proceedings, our procedural rules contain ample provisions through which litigants may seek admission of new or amended contentions, seek stays of licensing board decisions, appeal adverse decisions, and file motions to reopen the record, as appropriate. And, should a licensing board decision raise novel legal or policy questions, we encourage the boards to certify to us, in accordance with 10 C.F.R. §§ 2.319(l) and 2.323(f), those questions that would benefit from our consideration. All of these procedural mechanisms contribute towards guaranteeing the propriety of adjudicatory decisions, and allow proceedings to continue with minimal disruption to all participants. Neither new procedures nor a separate timetable for raising new issues related to the Fukushima events are therefore warranted.¹²¹

¹²⁰ And, as discussed above, in the post-TMI time frame, the Commission, although providing for some modified procedures, continued to apply the existing rules for filing new contentions and motions to reopen the record. See June 1980 Policy Statement, 45 Fed. Reg. at 41,470; December 1980 Policy Statement, CLI-80-42, 12 NRC at 661; *Diablo Canyon*, CLI-81-5, 3 NRC at 364-65.

¹²¹ Indeed, participants in a number of matters have availed themselves of our rules, and seek to raise issues related to the Fukushima events. See *supra* n.91; *Motion to Amend Contentions 1, 2, and 5 of the CASE Revised Petition to Intervene*, (August 20, 2010) (Apr. 18, 2011); *Amended Contentions 1, 2 and 5* (Apr. 18, 2011) (filed in the *Turkey Point* proceeding prior to issuance of the Near-Term Report). The *Turkey Point* Board denied the revised intervention petition; the intervenor is seeking reconsideration of the Board decision, as well as admission of new contentions. See LBP-11-15, 73 NRC ____ (June 29, 2011) (slip op.); *Citizens Allied for Safe Energy, Inc., Motion for Reconsideration of Amended Contentions 1, 2, and 5 and New Contentions Following Fukushima Near-Term Task Force Recommendations* (Aug. 11, 2011, revised Aug. 16, 2011). Following issuance of the Near-Term Report, a number of new contentions have been filed. *E.g.*, *Contention Regarding NEPA Requirement to Address Safety and Environmental Implications of the Fukushima Task Force Report* (Aug. 10, 2011) (Bell Bend); *Contention Regarding NEPA Requirement to Address Safety and Environmental Implications of the Fukushima Task Force Report* (Aug. 11, 2011) (Watts Bar).

Although we do not establish a timetable for future adjudicatory pleadings today, we will monitor our ongoing adjudicatory proceedings and will reassess this determination if it becomes apparent that additional guidance would be appropriate. To this end, boards in particular proceedings are welcome to notify us if additional procedures would assist the board in effectively managing the filings arising from the Fukushima events.

5. Separate Requests for Relief filed by Commonwealth of Massachusetts

The Commonwealth of Massachusetts asked to be allowed to join the petitions to suspend, and asked for additional, *Pilgrim*-specific relief. The Commonwealth requests that we suspend the *Pilgrim* license renewal proceeding pending the Commission's consideration of "new and significant" information related to spent fuel pools, related risks, and regulatory requirements; and "[g]rant the Commonwealth and the public an additional reasonable time following completion of the release of the NRC's own findings on the lessons of Fukushima to comment on them and propose licensing or regulatory changes as appropriate."¹²² Consistent with our decisions on the requests for relief contained in the primary Petition, above, we deny the Commonwealth of Massachusetts's similar requests for relief. The Commonwealth's petition, like the primary Petition, fails to satisfy our three-part *Private Fuel Storage* test and therefore does not support suspending the *Pilgrim* proceeding pending evaluation of information obtained as a result of the events in Japan.

¹²² Commonwealth Petition at 13-14. The Commonwealth also requested an additional thirty days, through June 2, 2011, to make additional filings in the *Pilgrim* proceeding. *Id.* at 13. Because it now has made these filings, this request is moot. See generally *Commonwealth of Massachusetts' Petition for Waiver of 10 C.F.R. Part 51, Subpart A, Appendix B or, in the Alternative, Petition for Rulemaking to Rescind Regulations Excluding Consideration of Spent Fuel Storage Impacts from License Renewal Environmental Review* (June 2, 2011); *Commonwealth of Massachusetts' Conditional Motion to Suspend Pilgrim Nuclear Power Plant License Renewal Proceeding Pending Resolution of Petition for Rulemaking to Rescind Spent Fuel Pool Exclusion Regulations* (June 2, 2011). These new filings will be addressed separately, in the *Pilgrim* proceeding.

We also reject the Commonwealth's premature request for additional time to comment on the agency's post-Fukushima findings and to propose licensing or regulatory changes of its own. As noted above, we directed the Task Force to consider stakeholder input in the development of its recommendations.¹²³ There will be further opportunities for stakeholder input as the agency's review proceeds, and public and stakeholder participation will be sought consistent with the established processes for any actions that we direct the NRC Staff to undertake.¹²⁴

6. *Requests for Relief: Design Certification Rulemaking Proceedings*

In addition to the requests for relief contained within the initial Petition directed at both the AP1000 and the ESBWR design certification rulemakings, we received requests for relief directed specifically to the ongoing AP1000 design certification rulemaking. The additional requests were made in a petition filed by a set of public interest groups.¹²⁵ These petitioners seek immediate postponement of the ongoing AP1000 design certification rulemaking,¹²⁶ and request initiation by the Commission of "a comprehensive review of the Fukushima accident to

¹²³ With respect to stakeholder involvement, the Near-Term Report notes that members of the Task Force: (1) met with representatives of the Institute of Nuclear Power Operations to gather information on the industry's post-Fukushima actions; (2) met with representatives of the Federal Emergency Management Agency to discuss offsite emergency preparedness, and to obtain insights on the U.S. National Response Framework; and (3) "appropriately screened and considered information and suggestions received from internal and external stakeholders." Near-Term Report at 2. The Task Force also held a public meeting with stakeholders on July 28, 2011. Transcript, "Public Meeting on the Results of the NRC's Near-Term Task Force Review of NRC Processes and Regulations Following Events in Japan." (July 28, 2011). We have since provided additional direction to the Staff for engaging internal and external stakeholders in our processes. See "Engagement of Stakeholders Regarding the Events in Japan," Staff Requirements Memorandum COMWDM-11-0001/COMWCO-11-0001 (Aug. 22, 2011) (ML112340693).

¹²⁴ The Commonwealth is free at any time to file a petition for rulemaking, pursuant to 10 C.F.R. § 2.802, to issue, amend, or rescind any regulation.

¹²⁵ AP1000 Petition. The AP1000 petitioners are a subset of the petitioners. See *id.* at 1 for a complete listing. This has been placed on the AP1000 rulemaking docket.

¹²⁶ *Id.* at 23.

develop lessons learned for new reactor designs and the subsequent development and implementation of new regulatory safeguards to protect public health and safety.”¹²⁷ We deny the request for immediate postponement of the AP1000 and ESBWR design certification rulemakings for the same reasons we decline to suspend ongoing adjudications and licensing decisions. However, insofar as these and other filings made with respect to the AP1000 rulemaking bear on the propriety of the AP1000 design, or suggest that additional substantive work on the rulemaking is needed, these filings are referred to the NRC Staff for consideration as comments on the AP1000 design certification rulemaking amendment.¹²⁸ We also refer the elements of the Petition that relate to the ESBWR rulemaking to the Staff for consideration as a rulemaking comment.

III. REQUESTS TO SUSPEND ASSOCIATED RULEMAKING PETITIONS

The fifteen petitions for rulemaking that we received in mid-August are substantively similar.¹²⁹ The rulemaking petitions seek to rescind regulations in 10 C.F.R. Part 51—in particular, petitioners cite 10 C.F.R. Part 51, Appendix B, and 10 C.F.R. §§ 51.45, 51.53, and 51.95—that “draw generic conclusions about the environmental impacts of severe reactor and

¹²⁷ *Id.*

¹²⁸ See, e.g., *Additional Comments Supporting the Petition by the AP1000 Oversight Group et al. to Suspend AP1000 Design Certification Rulemaking Pending Evaluation of Fukushima Accident Implications on Design and Operational Procedures and Request for Expedited Consideration* (May 24, 2011); E-mails from John Runkle to Docket ID NRC-2010-0131 (dated May 10, 2011, at 6:19 p.m. and 6:21 p.m.); Bell, R.J., Nuclear Energy Institute, letter to Secretary, NRC, “Comments on AP1000 Design Certification Amendment; Docket ID NRC 2010-0131, *Federal Register* Notice 76 FR 10269” (May 10, 2011). To the limited extent the recently filed request to terminate the AP1000 design certification raises issues or makes requests analogous to those in the Petition or the AP1000 Petition, we refer those items also to the Staff for consideration as rulemaking comments. (See Runkle, John D., Esq., letter to Gregory B. Jaczko, Chairman, NRC, Re “Petition to Terminate the Rulemaking on Design Certification of the AP1000 Reactor and Declare It Null and Void (Docket ID NRC-2010-0131)” (June 16, 2011)).

¹²⁹ See n.27, *supra*. The NRC has not yet determined whether the petitions are acceptable for docketing under 10 C.F.R. § 2.802.

spent fuel pool accidents and that preclude consideration of those issues in individual licensing proceedings.”¹³⁰ Related to their petitions, the rulemaking petitioners seek suspension of the associated licensing proceedings, pending disposition of the rulemaking petitions.¹³¹

Section 2.802(d) of our rules provides that a rulemaking petitioner “may request the Commission to suspend all or any part of any licensing proceeding to which the petitioner is a party pending disposition of the petition for rulemaking.” Of the petitioners, most are parties to ongoing adjudicatory proceedings.¹³² Although the petitioners provide no separate grounds for suspending the proceedings pending disposition of their rulemaking petition, they do reiterate the argument that the NRC must suspend the proceedings while it considers the environmental impacts of the Near-Term Report, including with respect to severe reactor and spent fuel pool accidents.¹³³

For the reasons discussed above, the rulemaking petitioners’ request does not support suspension of the named proceedings at this time. These petitioners have not shown that continuation of licensing proceedings, pending consideration of the rulemaking petition, would “jeopardize the public health and safety, prove an obstacle to fair and efficient decisionmaking, or prevent appropriate implementation of any pertinent rule or policy changes that might emerge” from our continued evaluation of the impacts of the events in Japan.¹³⁴ As we stated

¹³⁰ Rulemaking Petition at 2 (unnumbered).

¹³¹ *Id.* at 3 (unnumbered).

¹³² This is not true in all cases. For example, Mr. Stilp, proponent of the suspension request in the *Bell Bend* matter, is not a party to an ongoing proceeding. We may nonetheless consider the request of a non-party as an exercise of our inherent supervisory powers over proceedings. See *Petition for Rulemaking to Amend 10 C.F.R. § 54.17(c)*, CLI-11-1, 74 NRC __ (Jan. 24, 2011) (slip op. at 2 n.5) (quoting *AmerGen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-08-23, 68 NRC 461, 484-85 (2008)).

¹³³ Rulemaking Petition at 3 (unnumbered).

¹³⁴ *Private Fuel Storage*, CLI-01-26, 54 NRC at 380.

above, until we have a complete understanding of the Fukushima events, and have provided direction as to potential changes to regulatory requirements, we will not know whether, or the extent to which, an individual NEPA review might be impacted. If the NRC determines that changes to its current environmental assessment rules are warranted, we can revisit whether an individual licensing review or adjudication should be held in abeyance pending the outcome of a relevant rulemaking.

Additionally, the rules cited by the rulemaking petitioners that reach “generic conclusions” regarding severe reactor and spent fuel accidents appear to be those that pertain to license renewal.¹³⁵ None of the license renewal applications implicated here is on the verge of being granted, and those proceedings involve a number of issues unrelated to the rulemaking petitions; a request to suspend is therefore premature.¹³⁶ As we noted in the *Pilgrim* and *Vermont Yankee* matters, after considering the rulemaking petitions, the NRC will make a decision whether to deny the petitions, or proceed to make revisions to Part 51. Depending on the timing and outcome of the NRC Staff’s resolution of the rulemaking petitions, the Staff itself potentially could seek the Commission’s permission to suspend one or more of the generic determinations in the license renewal environmental rules, and include a new analysis in pending, plant-specific environmental impact statements.¹³⁷

¹³⁵ See 10 C.F.R. § 51.53(c)(3)(i), and Appendix B to Subpart A (excluding from individual analysis in an environmental report associated with a license renewal application certain “Category 1” issues, including severe accidents and onsite storage of spent fuel). It is not immediately clear that all petitioners would be affected even if the rulemaking petition is successful, in whole or in part. A number of the rulemaking petitioners are participants in combined license proceedings, associated with new reactors, where no such generic conclusions have been drawn.

¹³⁶ See *Entergy Nuclear Vermont Yankee, LLC, and Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station; Pilgrim Nuclear Power Station), CLI-07-3, 65 NRC 13, 22 n.37 (2007), *aff’d*, *Massachusetts v. United States*, 522 F.3d 115 (1st Cir. 2008).

¹³⁷ See *Vermont Yankee/Pilgrim*, CLI-07-3, 65 NRC at 22 (citing Final Rule, Environmental Review for Renewal of Nuclear Power Plant Operating Licenses, 61 Fed. Reg. 28,467, 28,472 (June 5, 1996) (providing that, if a commenter in a license renewal matter provides new, generic (continued . . .)

Given that the NRC will have the opportunity to further consider the concerns that the rulemaking petitioners have expressed, and as we further consider actions related to the Japan events, we decline to suspend any proceeding pending resolution of the rulemaking petition. No harm will accrue to the petitioners by continuation of ongoing proceedings, as we have discussed above. Nor does the ordinary burden to parties pursuing litigation pending the rulemaking justify disrupting our ongoing reviews.¹³⁸ For all of these reasons, we deny the rulemaking petitioners' request for suspension.

IV. CONCLUSION

For the reasons provided above, we:

- *Deny* petitioners' request to suspend licensing and standardized design certification decisions pending completion of the NRC Task Force's evaluation of the implications of the Fukushima accident and issuance of any proposed regulatory decisions and/or environmental analyses.
- *Deny* petitioners' request to suspend proceedings with respect to hearings and opportunities for public comment on reactor or spent fuel pool issues identified for investigation by the Task Force.
- *Deny* petitioners' request to suspend proceedings in connection with any other issues identified by the Task Force pending completion of the Task Force's investigation and issuance of any proposed regulatory decisions and/or environmental analyses.
- *Deny* petitioners' request for a separate generic NEPA analysis of the potential impacts of the Fukushima events.
- *Grant* petitioners' request for a safety analysis of the regulatory implications of the events at Fukushima, to the extent we directed the Task Force to undertake this analysis and to the extent we subsequently directed the Staff to further this analysis, incorporating stakeholder input as we have directed.
- *Refer* to the NRC Staff those elements of the Petition that relate specifically to design certification, for consideration as rulemaking comments. *Refer* to the NRC Staff for

information that demonstrates the analysis of an impact codified in the rule is incorrect, the Staff will seek Commission approval to either suspend the application of the rule on a generic basis with respect to the analysis, or delay granting the affected license renewal application (and possibly other pending applications) until its analysis is completed, and the rule amended.)

¹³⁸ See *Petition to Amend 10 C.F.R. § 54.17(c)*, CLI-11-1, 74 NRC at __ (slip op. at 5).

resolution as comments in the AP1000 rulemaking proceeding, all additional filings relevant to the AP1000 rulemaking proceeding.

- *Deny* petitioners' request to revise our procedural rules.
- *Deny* the requests for relief made by the Commonwealth of Massachusetts.
- *Deny* the requests to suspend certain of the captioned proceedings pending resolution of petitions for rulemaking arising from the events in Japan.

IT IS SO ORDERED.¹³⁹

For the Commission

[NRC SEAL]

/RA/

Annette L. Vietti-Cook
Secretary of the Commission

Dated at Rockville, Maryland,
this 9th day of September, 2011.

¹³⁹ Petitioners also request that we suspend all decisions and proceedings regarding all licensing and related rulemaking proceedings, "pending the outcome of any *independent* investigation of the Fukushima accident that may be ordered by Congress or the President or instigated by the Commission" and request that the President establish an independent investigation of the Fukushima accident and its implications, similar to the President's Commission on the Accident at Three Mile Island. Amended Petition at 3 (emphasis in original). The initiation of independent investigations by Congress or the President lies beyond the scope of our authority; to date no such investigations have been initiated. We have confidence in the objectivity of our Task Force and ongoing agency review and have no plans to establish an additional investigatory body at this time.

Commissioner Apostolakis's approval does not pertain to the *Pilgrim* and *Indian Point* license renewal proceedings, in which he is not participating.

APPENDIX**I. Initial and Revised Petitions**

1. *Union Electric Company, d/b/a Ameren Missouri* (Callaway Plant Unit 2), Missouri Coalition for the Environment, Missourians for Safe Energy: *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* (Apr. 15, 2011); *Amendment and Errata to 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* (Apr. 18, 2011); *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* (Apr. 18, 2011).
2. AP1000 Design Certification Amendment (10 C.F.R. Part 52), AP1000 Oversight Group, Bellefonte Efficiency and Sustainability Team, Blue Ridge Environmental Defense League, Citizens Allied for Safe Energy, Friends of the Earth, Georgia Women's Action for New Directions, Green Party of Florida, Mothers Against Tennessee River Radiation, North Carolina Waste Awareness and Reduction Network, Nuclear Information and Resource Service, Nuclear Watch South, South Carolina Chapter-Sierra Club, Southern Alliance for Clean Energy: *Petition to Suspend AP1000 Design Certification Rulemaking Pending Evaluation of Fukushima Accident Implications on Design and Operational Procedures and Request for Expedited Consideration* (Apr. 6, 2011).
3. *Calvert Cliffs Nuclear Project, LLC* (Calvert Cliffs Nuclear Power Plant, Unit 3), Nuclear Information and Resource Service: *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* (Apr. 14, 2011); *Amendment and Errata to 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* (Apr. 21, 2011); *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* (Apr. 21, 2011).
4. *Detroit Edison Co.* (Fermi Nuclear Power Plant, Unit 3), Keith Gunter, Michael J. Keegan, Edward McArdle, Leonard Mandeville, Frank Mantei, Marcee Meyers, Henry Newnan, Sierra Club (Michigan Chapter), Don't Waste Michigan, Inc., Citizens Environment Alliance of Southwestern Ontario, Beyond Nuclear, George Steinman, Shirley Steinman, Harold L. Stokes, Citizens for Alternatives to Chemical Contamination, Marilyn R. Timmer: *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* (Apr. 14, 2011); *Amendment and Errata to 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* (Apr. 21, 2011).
5. *Duke Energy Carolinas, LLC* (William States Lee III Nuclear Station, Units 1 and 2), Blue Ridge Environmental Defense League: *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* (Apr. 18, 2011).
6. *Energy Northwest* (Columbia Generating Station), Northwest Environmental Advocates: *Emergency Petition to Suspend All Pending Reactor Licensing Decisions and Related*

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Rulemaking Decisions Pending Investigation of Lessons Learned from Fukushima Daiichi Nuclear Power Station Accident (Apr. 18, 2011).

7. *Entergy Nuclear Generation Co. and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), *Pilgrim Watch: 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* (Apr. 14, 2011); *Amendment and Errata to 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* (Apr. 19, 2011); *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* (Apr. 19, 2011).

8. *Entergy Nuclear Generation Co. and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), *Commonwealth of Massachusetts: Commonwealth of Massachusetts Response to Commission Order Regarding Lessons Learned from the Fukushima Daiichi Nuclear Power Station Accident, Joinder in Petition to Suspend the License Renewal Proceeding for the Pilgrim Nuclear Plant, and Request for Additional Relief* (May 2, 2011).

9. *Entergy Nuclear Operations, Inc.* (Indian Point Nuclear Generating Station, Units 2 and 3), *Hudson River Sloop Clearwater, Inc.: 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* (Apr. 19, 2011).

10. *FirstEnergy Nuclear Operating Co.* (Davis-Besse Nuclear Power Station, Unit 1), *Citizens Environment Alliance of Southwestern Ontario, Don't Waste Michigan, Green Party of Ohio: 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* (Apr. 14, 2011); *Amendment and Errata to 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* (Apr. 21, 2011).

11. *Florida Power & Light Co.* (Turkey Point, Units 6 and 7), *Citizens Allied for Safe Energy, Inc.: 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* (Apr. 14, 2011); *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* (Apr. 18, 2011).

12. *Florida Power & Light Co.* (Turkey Point, Units 6 and 7), *Village of Pinecrest, Florida: 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* (Apr. 18, 2011).

13. *Florida Power & Light Co.* (Turkey Point, Units 6 and 7), *Dan Kipnis, Mark Oncavage, National Parks Conservation Association, Southern Alliance for Clean Energy: 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* (Apr. 14, 2011); *Amendment and Errata to Emergency Petition to Suspend All Pending Reactor Licensing Decisions and Related Rulemaking Decisions Pending Investigation*

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of Lessons Learned from Fukushima Daiichi Nuclear Power Station Accident (Apr. 18, 2011); *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* (Apr. 18, 2011).

14. NextEra Energy Seabrook, LLC (Seabrook Station, Unit 1), Beyond Nuclear: *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* (Apr. 18, 2011); *Amendment and Errata to 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* (Apr. 19, 2011); *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* (Apr. 19, 2011).

15. NextEra Energy Seabrook, LLC (Seabrook Station, Unit 1), Friends of the Coast, New England Coalition: *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* (Apr. 15, 2011); *Amendment and Errata to 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* (Apr. 20, 2011); *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* (Apr. 20, 2011).

16. Pacific Gas and Electric Co. (Diablo Canyon Power Plant, Units 1 and 2), San Luis Obispo Mothers for Peace: *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* (Apr. 14, 2011); *Amendment and Errata to 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* (Apr. 18, 2011); *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* (Apr. 18, 2011).

17. PPL Bell Bend, LLC (Bell Bend Nuclear Power Plant), Gene Stilp: *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* (Apr. 14, 2011); *Amendment and Errata to 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* (Apr. 19, 2011).

18. Progress Energy Carolinas, Inc. (Shearon Harris Nuclear Power Plant, Units 2 and 3), North Carolina Waste Awareness and Reduction Network: *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* (Apr. 18, 2011).

19. Progress Energy Florida, Inc. (Levy County Nuclear Power Plant, Units 1 and 2), Nuclear Information and Resource Service: *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* (Apr. 14, 2011); *Amendment*

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and Errata to 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 (Apr. 18, 2011); *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* (Apr. 18, 2011).

20. *South Carolina Electric & Gas Co. and South Carolina Public Service Authority (also referred to as Santee Cooper)* (Virgil C. Summer Nuclear Station, Units 1 and 2), Friends of the Earth, South Carolina Chapter of Sierra Club: *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* (Apr. 19, 2011).

21. *Southern Nuclear Operating Co.* (Vogtle Electric Generating Plant, Units 3 and 4), Blue Ridge Environmental Defense League: *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* (Apr. 18, 2011).

22. *Southern Nuclear Operating Co.* (Vogtle Electric Generating Plant, Units 3 and 4), Blue Ridge Environmental Defense League, Center for a Sustainable Coast, Georgia Women's Action for New Directions, Savannah Riverkeeper, Southern Alliance for Clean Energy: *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* (Apr. 14, 2011); *Amendment and Errata to 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* (Apr. 18, 2011); *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* (Apr. 18, 2011).

23. *Tennessee Valley Authority* (Bellefonte Nuclear Power Plant, Units 3 and 4), Blue Ridge Environmental Defense League, Bellefonte Efficiency and Sustainability Team: *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* (Apr. 18, 2011).

24. *Tennessee Valley Authority* (Watts Bar, Unit 2), Southern Alliance for Clean Energy: *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* (Apr. 14, 2011); *Amendment and Errata to 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* (Apr. 18, 2011); *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* (Apr. 18, 2011).

25. *Virginia Electric and Power Co. d/b/a Dominion Virginia Power and Old Dominion Electric Cooperative* (North Anna, Unit 3), Blue Ridge Environmental Defense League, People's Alliance for Clean Energy: *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* (Apr. 18, 2011).

APPENDIX**II. Supplemental Filings**

1. *Union Electric Company, d/b/a Ameren Missouri* (Callaway Plant Unit 2), Missouri Coalition for the Environment, Missourians for Safe Energy: *Declaration of Dr. Arjun Makhijani in Support of 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* (Apr. 20, 2011).
2. AP1000 Design Certification Amendment (10 C.F.R. Part 52), AP1000 Oversight Group, Bellefonte Efficiency and Sustainability Team, Blue Ridge Environmental Defense League, Citizens Allied for Safe Energy, Friends of the Earth, Georgia Women's Action for New Directions, Green Party of Florida, Mothers Against Tennessee River Radiation, North Carolina Waste Awareness and Reduction Network, Nuclear Information and Resource Service, Nuclear Watch South, South Carolina Chapter-Sierra Club, Southern Alliance for Clean Energy: *Inquiry by the AP1000 Oversight Group et al. on the Status of Their Petition to Suspend AP1000 Design Certification Rulemaking Pending Evaluation of Fukushima Accident Implications on Design and Operational Procedures and Request for Expedited Consideration* (Apr. 29, 2011); E-mails from John Runkle to Docket ID NRC-2010-0131 (dated May 10, 2011, at 6:19 p.m. and 6:21 p.m.); *Additional Comments Supporting the Petition by the AP1000 Oversight Group et al. to Suspend AP1000 Design Certification Rulemaking Pending Evaluation of Fukushima Accident Implications on Design and Operational Procedures and Request for Expedited Consideration* (May 24, 2011).
3. *Calvert Cliffs Nuclear Project, LLC* (Calvert Cliffs Nuclear Power Plant, Unit 3), Nuclear Information and Resource Service: *Declaration of Dr. Arjun Makhijani in Support of 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* (Apr. 21, 2011).
4. *Detroit Edison Co.* (Fermi Nuclear Power Plant, Unit 3), Keith Gunter, Michael J. Keegan, Edward McArdle, Leonard Mandeville, Frank Mantei, Marcee Meyers, Henry Newnan, Sierra Club (Michigan Chapter), Don't Waste Michigan, Inc., Citizens Environment Alliance of Southwestern Ontario, Beyond Nuclear, George Steinman, Shirley Steinman, Harold L. Stokes, Citizens for Alternatives to Chemical Contamination, Marilyn R. Timmer: *Declaration of Dr. Arjun Makhijani in Support of 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* (Apr. 21, 2011).
5. *Energy Northwest* (Columbia Generating Station), Northwest Environmental Advocates: *Declaration of Dr. Arjun Makhijani in Support of 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* (Apr. 20, 2011).
6. *Entergy Nuclear Generation Co. and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), Pilgrim Watch: *Declaration of Dr. Arjun Makhijani in Support of 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* (Apr. 19, 2011).
7. *Entergy Nuclear Operations, Inc.* (Indian Point Nuclear Generating Station, Units 2 and 3), Hudson River Sloop Clearwater, Inc.: *Declaration of Dr. Arjun Makhijani in Support of*

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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 (Apr. 19, 2011).

8. *FirstEnergy Nuclear Operating Co. (Davis-Besse Nuclear Power Station, Unit 1), Citizens Environment Alliance of Southwestern Ontario, Don't Waste Michigan, Green Party of Ohio: Declaration of Dr. Arjun Makhijani in Support of 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* (Apr. 21, 2011).

9. *Florida Power & Light Co. (Turkey Point, Units 6 and 7), Village of Pinecrest, Florida: Declaration of Dr. Arjun Makhijani in Support of 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* (Apr. 20, 2011).

10. *Florida Power & Light Co. (Turkey Point, Units 6 and 7), Dan Kipnis, Mark Oncavage, National Parks Conservation Association, Southern Alliance for Clean Energy: Declaration of Dr. Arjun Makhijani in Support of 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* (Apr. 20, 2011).

11. *NextEra Energy Seabrook, LLC (Seabrook Station, Unit 1), Beyond Nuclear: Declaration of Dr. Arjun Makhijani in Support of 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* (Apr. 20, 2011).

12. *NextEra Energy Seabrook, LLC (Seabrook Station, Unit 1), Friends of the Coast, New England Coalition: Declaration of Dr. Arjun Makhijani in Support of 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* (Apr. 20, 2011).

13. *Pacific Gas and Electric Co. (Diablo Canyon Power Plant, Units 1 and 2), San Luis Obispo Mothers for Peace: Declaration of Dr. Arjun Makhijani in Support of 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* (Apr. 19, 2011).

14. *PPL Bell Bend, LLC (Bell Bend Nuclear Power Plant), Gene Stilp: Declaration of Dr. Arjun Makhijani in Support of 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* (Apr. 19, 2011).

15. *Progress Energy Carolinas, Inc. (Shearon Harris Nuclear Power Plant, Units 2 and 3), North Carolina Waste Awareness and Reduction Network: Supplement to 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* (Apr. 19, 2011); *Declaration of Dr. Arjun Makhijani in Support of 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* (Apr. 19, 2011).

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16. *Progress Energy Florida, Inc.* (Levy County Nuclear Power Plant, Units 1 and 2), Nuclear Information and Resource Service: *Declaration of Dr. Arjun Makhijani in Support of 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* (Apr. 19, 2011).
17. *South Carolina Electric & Gas Co. and South Carolina Public Service Authority* (also referred to as *Santee Cooper*) (Virgil C. Summer Nuclear Station, Units 1 and 2), Friends of the Earth, South Carolina Chapter of Sierra Club: *Declaration of Dr. Arjun Makhijani in Support of 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* (Apr. 19, 2011).
18. *Southern Nuclear Operating Co.* (Vogtle Electric Generating Plant, Units 3 and 4), Blue Ridge Environmental Defense League: *Supplement to 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* (Apr. 20, 2011); *Declaration of Dr. Arjun Makhijani in Support of 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* (Apr. 20, 2011).
19. *Southern Nuclear Operating Co.* (Vogtle Electric Generating Plant, Units 3 and 4), Blue Ridge Environmental Defense League, Center for a Sustainable Coast, Georgia Women's Action for New Directions, Savannah Riverkeeper, Southern Alliance for Clean Energy: *Declaration of Dr. Arjun Makhijani in Support of 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* (Apr. 20, 2011).
20. *Tennessee Valley Authority* (Watts Bar, Unit 2), Southern Alliance for Clean Energy: *Declaration of Dr. Arjun Makhijani in Support of 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* (Apr. 19, 2011).
21. *Virginia Electric and Power Co. d/b/a Dominion Virginia Power and Old Dominion Electric Cooperative* (North Anna, Unit 3), Blue Ridge Environmental Defense League, People's Alliance for Clean Energy: *Supplement to 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* (Apr. 20, 2011), *Declaration of Dr. Arjun Makhijani in Support of 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* (Apr. 19, 2011).

III. Responsive Pleadings

1. Served in all captioned proceedings except design certification rulemaking proceedings: *Brief of the Nuclear Energy Institute as Amicus Curiae in Opposition to the Emergency Petition to Suspend All Pending Reactor Licensing Decisions and Related Rulemaking Decisions* (May 2, 2011).
2. Served in all captioned proceedings except design certification rulemaking proceedings: *NRC Staff Answer to Emergency Petition to Suspend All Pending Reactor Licensing Decisions*

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and Related Rulemaking Decisions Pending Investigation of Lessons Learned from Fukushima Daiichi Nuclear Power Station Accident (May 2, 2011).

3. *Union Electric Company, d/b/a Ameren Missouri* (Callaway Plant Unit 2), Missouri Coalition for the Environment, Missourians for Safe Energy: *Ameren Missouri Response to Emergency Petition* (May 2, 2011).
4. AP1000 Design Certification Amendment (10 C.F.R. Part 52), AP1000 Oversight Group, Bellefonte Efficiency and Sustainability Team, Blue Ridge Environmental Defense League, Citizens Allied for Safe Energy, Friends of the Earth, Georgia Women's Action for New Directions, Green Party of Florida, Mothers Against Tennessee River Radiation, North Carolina Waste Awareness and Reduction Network, Nuclear Information and Resource Service, Nuclear Watch South, South Carolina Chapter-Sierra Club, Southern Alliance for Clean Energy: Ziesing, R.F., Westinghouse Electric Co., letter to Annette L. Vietti-Cook, NRC, "Emergency Petition to Suspend All Pending Licensing Decisions and Related Rulemaking Decisions Pending Investigation of Lessons Learned from Fukushima Daiichi Nuclear Power Station Accident" (May 2, 2011); Bell, R.J., Nuclear Energy Institute, letter to Secretary, NRC, "Comments on AP1000 Design Certification Amendment; Docket ID NRC 2010-0131, Federal Register Notice 76 FR 10269" (May 10, 2011); Ziesing, R.F., Westinghouse Electric Co., letter to Secretary, NRC, Subject: "Westinghouse Comments in the AP1000® Design Certification Amendment Rulemaking in Response to Petitions to Suspend Rulemaking" (May 10, 2011).
5. *Calvert Cliffs Nuclear Project, LLC* (Calvert Cliffs Nuclear Power Plant, Unit 3), Nuclear Information and Resource Service: *Opposition to Emergency Petition to Suspend Licensing Decisions and Proceedings* (May 2, 2011).
6. *Detroit Edison Co.* (Fermi Nuclear Power Plant, Unit 3), Keith Gunter, Michael J. Keegan, Edward McArdle, Leonard Mandeville, Frank Mantei, Marcee Meyers, Henry Newnan, Sierra Club (Michigan Chapter), Don't Waste Michigan, Inc., Citizens Environment Alliance of Southwestern Ontario, Beyond Nuclear, George Steinman, Shirley Steinman, Harold L. Stokes, Citizens for Alternatives to Chemical Contamination, Marilyn R. Timmer: *Opposition to Emergency Petition to Suspend Licensing Decisions and Proceedings* (May 2, 2011).
7. *Duke Energy Carolinas, LLC* (William States Lee III Nuclear Station, Units 1 and 2), Blue Ridge Environmental Defense League: *Answer of Duke Energy Carolinas LLC Opposing Petition to Suspend All Pending Reactor Licensing Proceedings* (May 2, 2011).
8. *Energy Northwest* (Columbia Generating Station), Northwest Environmental Advocates: *Energy Northwest's Answer in Opposition to Emergency Petition to Suspend Licensing Proceedings* (May 2, 2011).
9. *Entergy Nuclear Generation Co. and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), Pilgrim Watch: *Entergy's Answer Opposing Petition to Suspend Pending Licensing Proceedings* (May 2, 2011).
10. *Entergy Nuclear Generation Co. and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), Commonwealth of Massachusetts: *Entergy's Answer Opposing Commonwealth's Joinder in Petition to Suspend the License Renewal Proceedings for the Pilgrim Nuclear Power Plant and Request for Additional Relief* (May 12, 2011).

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11. *Entergy Nuclear Operations, Inc.* (Indian Point Nuclear Generating Station, Units 2 and 3), Hudson River Sloop Clearwater, Inc.: *Entergy's Answer Opposing Petition to Suspend Pending Licensing Proceedings* (May 2, 2011).
12. ESBWR Design Certification Amendment (10 C.F.R. Part 52), Head, Jerald G., GE Hitachi Nuclear Energy, letter to Secretary, NRC, Subject: "Answer to Petition; SECY Order PR 52 (76FR16549), Docketed 04/19/2011 (NRC Accession No. ML111101277); Proposed Rule, ESBWR Design Certification, NRC-2010-0135, RIN 3150-AI85, 76 Federal Register 16549 (March 24, 2011)" (May 2, 2011).
13. *FirstEnergy Nuclear Operating Co.* (Davis-Besse Nuclear Power Station, Unit 1), Citizens Environment Alliance of Southwestern Ontario, Don't Waste Michigan, Green Party of Ohio: *FirstEnergy's Answer in Opposition to Emergency Petition to Suspend Licensing Proceedings* (May 2, 2011).
14. *Florida Power & Light Co.* (Turkey Point, Units 6 and 7), Citizens Allied for Safe Energy, Inc.; Village of Pinecrest, Florida; Dan Kipnis, Mark Oncavage, National Parks Conservation Association, Southern Alliance for Clean Energy: *Florida Power & Light Response Opposing Petition to Suspend All Pending Licensing Decisions and Related Rulemaking Decisions Pending Investigation of Lessons Learned from the Fukushima Daiichi Nuclear Power Station Accident* (May 2, 2011).
15. *Luminant Generation Co. LLC* (Comanche Peak Nuclear Power Plant, Units 3 and 4), Public Citizen, SEED Coalition: *Luminant Generation Company LLC's Answer in Opposition to Emergency Petition to Suspend Licensing Proceedings* (May 2, 2011).
16. *NextEra Energy Seabrook, LLC* (Seabrook Station, Unit 1), Beyond Nuclear; Friends of the Coast, New England Coalition: *Answer of NextEra Energy Seabrook LLC Opposing Petition to Suspend Pending Licensing Proceedings* (May 2, 2011).
17. *Pacific Gas and Electric Co.* (Diablo Canyon Power Plant, Units 1 and 2), San Luis Obispo Mothers for Peace: *Opposition to Emergency Petition to Suspend Licensing Decisions and Proceedings* (May 2, 2011).
18. *PPL Bell Bend, LLC* (Bell Bend Nuclear Power Plant), Gene Stilp: *Opposition to Emergency Petition* (May 2, 2011).
19. *Progress Energy Carolinas, Inc.* (Shearon Harris Nuclear Power Plant, Units 2 and 3), North Carolina Waste Awareness and Reduction Network: *Progress Energy Carolina, Inc.'s Response Opposing Emergency Petition to Suspend All Pending Licensing Decisions and Related Rulemaking Decisions Pending Investigation of Lessons Learned from the Fukushima Daiichi Nuclear Power Station Accident* (May 2, 2011).
20. *Progress Energy Florida, Inc.* (Levy County Nuclear Power Plant, Units 1 and 2), Nuclear Information and Resource Service: *Progress Energy Florida, Inc.'s Response Opposing Emergency Petition to Suspend All Pending Licensing Decisions and Related Rulemaking Decisions Pending Investigation of Lessons Learned from the Fukushima Daiichi Nuclear Power Station Accident* (May 2, 2011).
21. *South Carolina Electric & Gas Co. and South Carolina Public Service Authority* (also referred to as *Santee Cooper*) (Virgil C. Summer Nuclear Station, Units 1 and 2), Friends of the

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Earth, South Carolina Chapter of Sierra Club: *South Carolina Electric & Gas Company's Answer in Opposition to Emergency Petition to Suspend Licensing Proceedings* (May 2, 2011).

22. Nuclear Innovation North America LLC (South Texas Project, Units 3 and 4), Public Citizen, SEED Coalition: *Nuclear Innovation North America LLC's Answer in Opposition to Emergency Petition to Suspend Licensing Proceedings* (May 2, 2011).

23. Southern Nuclear Operating Co. (Vogtle Electric Generating Plant, Units 3 and 4), Blue Ridge Environmental Defense League (Runkle); Blue Ridge Environmental Defense League, Center for a Sustainable Coast, Georgia Women's Action for New Directions, Savannah Riverkeeper, Southern Alliance for Clean Energy (Goldstein): *Southern Nuclear Operating Company's Answer to 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* (May 2, 2011).

24. Tennessee Valley Authority (Bellefonte Nuclear Power Plant, Units 3 and 4), Blue Ridge Environmental Defense League, Bellefonte Efficiency and Sustainability Team: *Tennessee Valley Authority's Answer in Opposition to Emergency Petition to Suspend Licensing Proceedings* (May 2, 2011).

25. Tennessee Valley Authority (Watts Bar, Unit 2), Southern Alliance for Clean Energy: *Tennessee Valley Authority's Answer in Opposition to Emergency Petition to Suspend Licensing Proceedings* (May 2, 2011).

26. Virginia Electric and Power Co. d/b/a Dominion Virginia Power and Old Dominion Electric Cooperative (North Anna, Unit 3), Blue Ridge Environmental Defense League, People's Alliance for Clean Energy: *Dominion's Answer Opposing Petition to Suspend Licensing Proceedings* (May 2, 2011).

IV. Reply Pleadings

1. Union Electric Company, d/b/a Ameren Missouri (Callaway Plant Unit 2), Missouri Coalition for the Environment, Missourians for Safe Energy: *Petitioners' Motion for Modification of the Commission's April 19, 2011, Order to Permit a Consolidated Reply* (May 6, 2011); *Petitioners' Reply to Responses to 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* (May 6, 2011); *Certificate Regarding Consultation* (May 6, 2011).

2. AP1000 Design Certification Amendment (10 C.F.R. Part 52), AP1000 Oversight Group, Bellefonte Efficiency and Sustainability Team, Blue Ridge Environmental Defense League, Citizens Allied for Safe Energy, Friends of the Earth, Georgia Women's Action for New Directions, Green Party of Florida, Mothers Against Tennessee River Radiation, North Carolina Waste Awareness and Reduction Network, Nuclear Information and Resource Service, Nuclear Watch South, South Carolina Chapter-Sierra Club, Southern Alliance for Clean Energy: *Petitioners' Motion for Modification of the Commission's April 19, 2011, Order to Permit a Consolidated Reply* (May 10, 2011); *Petitioners' Reply to Responses to 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* (May 10, 2011).

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3. *Calvert Cliffs Nuclear Project, LLC* (Calvert Cliffs Nuclear Power Plant, Unit 3), Nuclear Information and Resource Service: *Petitioners' Motion for Modification of the Commission's April 19, 2011, Order to Permit a Consolidated Reply* (May 9, 2011); *Petitioners' Reply to Responses to 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* (May 9, 2011); *Certificate Regarding Consultation* (May 9, 2011).
4. *Detroit Edison Co.* (Fermi Nuclear Power Plant, Unit 3), Keith Gunter, Michael J. Keegan, Edward McArdle, Leonard Mandeville, Frank Mantei, Marcee Meyers, Henry Newnan, Sierra Club (Michigan Chapter), Don't Waste Michigan, Inc., Citizens Environment Alliance of Southwestern Ontario, Beyond Nuclear, George Steinman, Shirley Steinman, Harold L. Stokes, Citizens for Alternatives to Chemical Contamination, Marilyn R. Timmer: *Petitioners' Motion for Modification of the Commission's April 19, 2011, Order to Permit a Consolidated Reply* (May 6, 2011); *Petitioners' Reply to Responses to 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* (May 6, 2011); *Certificate of Consultation* (May 6, 2011).
5. *Duke Energy Carolinas, LLC* (William States Lee III Nuclear Station, Units 1 and 2), Blue Ridge Environmental Defense League: *Petitioners' Motion for Modification of the Commission's April 19, 2011, Order to Permit a Consolidated Reply* (May 12, 2011); *Petitioners' Reply to Responses to 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* (May 12, 2011); *Certificate Regarding Consultation* (May 12, 2011).
6. *Energy Northwest* (Columbia Generating Station), Northwest Environmental Advocates: *Petitioners' Motion for Modification of the Commission's April 19, 2011, Order to Permit a Consolidated Reply* (May 9, 2011); *Petitioners' Reply to Responses to 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* (May 9, 2011); *Certificate Regarding Consultation* (May 9, 2011).
7. *Entergy Nuclear Generation Co. and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), Pilgrim Watch: *Petitioners' Motion for Modification of the Commission's April 19, 2011, Order to Permit a Consolidated Reply* (May 6, 2011); *Petitioners' Reply to Responses to 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* (May 6, 2011); *Certificate Regarding Consultation* (May 6, 2011).
8. *Entergy Nuclear Generation Co. and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), Commonwealth of Massachusetts: *Commonwealth of Massachusetts Motion to Reply to Entergy's Answer Opposing Commonwealth's Joinder in Petition to Suspend the License Renewal Proceeding for the Pilgrim Nuclear Power Plant and Request for Additional Relief* (May 19, 2011); *Commonwealth of Massachusetts Reply to Entergy's Answer Opposing Commonwealth's Joinder in Petition to Suspend the License Renewal Proceeding for the Pilgrim Nuclear Power Plant and Request for Additional Relief* (May 19, 2011); *Commonwealth of Massachusetts Motion to Reply to NRC Staff and Entergy Oppositions to the Commonwealth of Massachusetts Motion to Suspend the License Renewal Proceeding for the Pilgrim Nuclear*

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Power Plant (June 16, 2011) (with integrated *Certificate of Counsel*); *Commonwealth of Massachusetts Reply to Oppositions of NRC Staff and Entergy to Commonwealth Motion to Suspend Pilgrim License Renewal Proceeding* (June 16, 2011).

9. *Entergy Nuclear Operations, Inc.* (Indian Point Nuclear Generating Station, Units 2 and 3), *Hudson River Sloop Clearwater, Inc.*: *Petitioners' Motion for Modification of the Commission's April 19, 2011, Order to Permit a Consolidated Reply* (May 6, 2011); *Petitioners' Reply to Responses to 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* (May 6, 2011); *Certificate Regarding Consultation* (May 6, 2011).

10. *FirstEnergy Nuclear Operating Co.* (Davis-Besse Nuclear Power Station, Unit 1), *Citizens Environment Alliance of Southwestern Ontario*, *Don't Waste Michigan*, *Green Party of Ohio*: *Petitioners' Motion for Modification of the Commission's April 19, 2011, Order to Permit a Consolidated Reply* (May 6, 2011); *Petitioners' Reply to Responses to 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* (May 6, 2011); *Certificate of Consultation* (May 6, 2011).

11. *Florida Power & Light Co.* (Turkey Point, Units 6 and 7), *Citizens Allied for Safe Energy, Inc.*: *Petitioners' Motion for Modification of the Commission's April 19, 2011, Order to Permit a Consolidated Reply* (May 9, 2011); *Petitioners' Reply to Responses to 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* (May 9, 2011).

12. *Florida Power & Light Co.* (Turkey Point, Units 6 and 7), *Village of Pinecrest, Florida*: *Petitioners' Motion for Modification of the Commission's April 19, 2011, Order to Permit a Consolidated Reply* (May 6, 2011); *Petitioners' Reply to Responses to 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* (May 6, 2011); *Certificate Regarding Consultation* (May 6, 2011).

13. *Florida Power & Light Co.* (Turkey Point, Units 6 and 7), *Dan Kipnis*, *Mark Oncavage*, *National Parks Conservation Association*, *Southern Alliance for Clean Energy*: *Petitioners' Motion for Modification of the Commission's April 19, 2011, Order to Permit a Consolidated Reply* (May 6, 2011); *Petitioners' Reply to Responses to 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* (May 6, 2011); *Certificate Regarding Consultation* (May 6, 2011).

14. *NextEra Energy Seabrook, LLC* (Seabrook Station, Unit 1), *Beyond Nuclear*: *Petitioners' Motion for Modification of the Commission's April 19, 2011, Order to Permit a Consolidated Reply* (May 6, 2011); *Petitioners' Reply to Responses to 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* (May 6, 2011); *Certificate Regarding Consultation* (May 6, 2011).

15. *NextEra Energy Seabrook, LLC* (Seabrook Station, Unit 1), *Friends of the Coast*, *New England Coalition*: *Petitioners' Motion for Modification of the Commission's April 19, 2011, Order*

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to Permit a Consolidated Reply (May 6, 2011); *Petitioners' Reply to Responses to 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* (May 6, 2011); *Certificate Regarding Consultation* (May 6, 2011).

16. *Pacific Gas and Electric Co.* (Diablo Canyon Power Plant, Units 1 and 2), San Luis Obispo Mothers for Peace: *Petitioners' Motion for Modification of the Commission's April 19, 2011, Order to Permit a Consolidated Reply* (May 6, 2011); *Petitioners' Reply to Responses to 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* (May 6, 2011); *Certificate of Counsel Regarding Consultation* (May 6, 2011).

17. *Progress Energy Carolinas, Inc.* (Shearon Harris Nuclear Power Plant, Units 2 and 3), North Carolina Waste Awareness and Reduction Network: *Petitioners' Motion for Modification of the Commission's April 19, 2011, Order to Permit a Consolidated Reply* (May 9, 2011); *Petitioners' Reply to Responses to 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* (May 9, 2011); *Certificate Regarding Consultation* (May 9, 2011).

18. *Progress Energy Florida, Inc.* (Levy County Nuclear Power Plant, Units 1 and 2), Nuclear Information and Resource Service: *Petitioners' Motion for Modification of the Commission's April 19, 2011, Order to Permit a Consolidated Reply* (May 6, 2011); *Petitioners' Reply to Responses to 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* (May 6, 2011); *Certificate Regarding Consultation* (May 6, 2011).

19. *South Carolina Electric & Gas Co. and South Carolina Public Service Authority* (also referred to as *Santee Cooper*) (Virgil C. Summer Nuclear Station, Units 1 and 2), Friends of the Earth, South Carolina Chapter of Sierra Club: *Petitioners' Motion for Modification of the Commission's April 19, 2011, Order to Permit a Consolidated Reply* (May 9, 2011); *Petitioners' Reply to Responses to 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* (May 9, 2011); *Certificate Regarding Consultation* (May 9, 2011).

20. *Southern Nuclear Operating Co.* (Vogtle Electric Generating Plant, Units 3 and 4), Blue Ridge Environmental Defense League, Center for a Sustainable Coast, Georgia Women's Action for New Directions, Savannah Riverkeeper, Southern Alliance for Clean Energy: *Petitioners' Motion for Modification of the Commission's April 19, 2011, Order to Permit a Consolidated Reply* (May 6, 2011); *Petitioners' Reply to Responses to 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* (May 6, 2011); *Certificate Regarding Consultation* (May 6, 2011).

21. *Tennessee Valley Authority* (Bellefonte Nuclear Power Plant, Units 3 and 4), Blue Ridge Environmental Defense League, Bellefonte Efficiency and Sustainability Team: *Petitioners' Motion for Modification of the Commission's April 19, 2011, Order to Permit a Consolidated Reply* (May 12, 2011); *Petitioners' Reply to Responses to Emergency Petition to Suspend All*

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Pending Reactor Licensing Decisions and Related Rulemaking Decisions Pending Investigation of Lessons Learned from Fukushima Daiichi Nuclear Power Station Accident (May 12, 2011); *Certificate Regarding Consultation* (May 12, 2011).

22. *Tennessee Valley Authority* (Watts Bar, Unit 2), *Southern Alliance for Clean Energy: Petitioners' Motion for Modification of the Commission's April 19, 2011, Order to Permit a Consolidated Reply* (May 6, 2011); *Petitioners' Reply to Responses to 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* (May 6, 2011); *Certificate of Counsel Regarding Consultation* (May 6, 2011).

23. *Virginia Electric and Power Co. d/b/a Dominion Virginia Power and Old Dominion Electric Cooperative* (North Anna, Unit 3), *Blue Ridge Environmental Defense League, People's Alliance for Clean Energy: Petitioners' Reply to Responses to 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* (May 9, 2011); *Petitioners' Motion for Modification of the Commission's April 19, 2011, Order to Permit a Consolidated Reply* (May 9, 2011); *Certificate Regarding Consultation* (May 9, 2011).

V. Responses to Reply Pleadings

1. Served in all captioned proceedings except design certification rulemaking proceedings: *NRC Staff's Answer to Petitioners' Motion for Modification of the Commission's April 19, 2011, Order to Permit a Consolidated Reply* (May 16, 2011).

2. *Union Electric Company, d/b/a Ameren Missouri* (Callaway Plant Unit 2), *Missouri Coalition for the Environment, Missourians for Safe Energy: Ameren Missouri's Response Opposing Motion to Permit Filing of Unauthorized Reply* (May 16, 2011).

3. *Calvert Cliffs Nuclear Project, LLC* (Calvert Cliffs Nuclear Power Plant, Unit 3), *Nuclear Information and Resource Service: Applicants' Response to Motion for Leave to Reply* (May 16, 2011).

4. *Detroit Edison Co.* (Fermi Nuclear Power Plant, Unit 3), *Keith Gunter, Michael J. Keegan, Edward McArdle, Leonard Mandeville, Frank Mantei, Marcee Meyers, Henry Newnan, Sierra Club (Michigan Chapter), Don't Waste Michigan, Inc., Citizens Environment Alliance of Southwestern Ontario, Beyond Nuclear, George Steinman, Shirley Steinman, Harold L. Stokes, Citizens for Alternatives to Chemical Contamination, Marilyn R. Timmer: Applicant's Response to Motion for Leave to Reply* (May 16, 2011).

5. *Duke Energy Carolinas, LLC* (William States Lee III Nuclear Station, Units 1 and 2), *Blue Ridge Environmental Defense League: Duke Energy's Answer Opposing Motion to Allow Unauthorized Reply* (May 23, 2011).

6. *Energy Northwest* (Columbia Generating Station), *Northwest Environmental Advocates: Energy Northwest's Answer in Opposition to Petitioners' Motion to Permit a Consolidated Reply* (May 16, 2011).

7. *Entergy Nuclear Generation Co. and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), *Pilgrim Watch; and Entergy Nuclear Operations, Inc.* (Indian Point Nuclear Generating Station, Units 2 and 3), *Hudson River Sloop Clearwater, Inc.: Entergy's Answer Opposing Motion to Permit Unauthorized Reply* (May 16, 2011).

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8. *Entergy Nuclear Generation Co. and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), Commonwealth of Massachusetts: *Entergy's Answer Opposing Commonwealth of Massachusetts Motion to Permit Unauthorized Reply* (May 31, 2011); *Entergy Answer Opposing Commonwealth of Massachusetts Motion to Permit Unauthorized Reply to Entergy and NRC Staff Answers Opposing Conditional Motion for Suspension* (June 24, 2011).
9. *FirstEnergy Nuclear Operating Co.* (Davis-Besse Nuclear Power Station, Unit 1), Citizens Environment Alliance of Southwestern Ontario, Don't Waste Michigan, Green Party of Ohio: *FirstEnergy's Answer Opposing Petitioners' Motion to Permit a Consolidated Reply* (May 16, 2011).
10. *Florida Power & Light Co.* (Turkey Point, Units 6 and 7), Citizens Allied for Safe Energy, Inc.; Village of Pinecrest, Florida; Dan Kipnis, Mark Oncavage, National Parks Conservation Association, Southern Alliance for Clean Energy: *Florida Power & Light Company's Response Opposing Motion to Permit Filing of Unauthorized Reply* (May 16, 2011).
11. *Luminant Generation Co. LLC* (Comanche Peak Nuclear Power Plant, Units 3 and 4), Public Citizen, SEED Coalition: *Luminant Generation Company LLC's Answer in Opposition to Petitioners' Motion to Permit a Consolidated Reply* (May 16, 2011).
12. *NextEra Energy Seabrook, LLC* (Seabrook Station, Unit 1), Beyond Nuclear; Friends of the Coast, New England Coalition: *Answer of NextEra Energy Seabrook, LLC Opposing Motion to Permit Unauthorized Reply* (May 16, 2011).
13. *Progress Energy Carolinas, Inc.* (Shearon Harris Nuclear Power Plant, Units 2 and 3), North Carolina Waste Awareness and Reduction Network: *Progress Energy Carolinas, Inc.'s Response Opposing Motion to Permit Filing of Unauthorized Reply* (May 16, 2011).
14. *Progress Energy Florida, Inc.* (Levy County Nuclear Power Plant, Units 1 and 2), Nuclear Information and Resource Service: *Progress Energy Florida, Inc.'s Response Opposing Motion to Permit Filing of Unauthorized Reply* (May 16, 2011).
15. *South Carolina Electric & Gas Co. and South Carolina Public Service Authority* (also referred to as *Santee Cooper*) (Virgil C. Summer Nuclear Station, Units 1 and 2), Friends of the Earth, South Carolina Chapter of Sierra Club: *South Carolina Electric & Gas Company's Answer in Opposition to Petitioners' Motion to Permit a Consolidated Reply* (May 16, 2011).
16. *Nuclear Innovation North America LLC* (South Texas Project, Units 3 and 4), Public Citizen, SEED Coalition: *Nuclear Innovation North America LLC's Answer Opposing Petitioners' Motion to Permit a Consolidated Reply* (May 16, 2011).
17. *Southern Nuclear Operating Co.* (Vogtle Electric Generating Plant, Units 3 and 4), Blue Ridge Environmental Defense League (Runkle); Blue Ridge Environmental Defense League, Center for a Sustainable Coast, Georgia Women's Action for New Directions, Savannah Riverkeeper, Southern Alliance for Clean Energy (Goldstein): *Southern Nuclear Operating Company's Answer in Opposition to Petitioners' Motion for Modification of the Commission's April 19, 2011, Order to Permit a Consolidated Reply* (May 16, 2011).
18. *Tennessee Valley Authority* (Bellefonte Nuclear Power Plant, Units 3 and 4), Blue Ridge Environmental Defense League, Bellefonte Efficiency and Sustainability Team: *Tennessee Valley Authority's Answer Opposing Petitioners' Motion to Permit a Consolidated Reply* (May 16,

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2011); *Tennessee Valley Authority's Answer Opposing Petitioners' Motion to Permit a Consolidated Reply* (May 16, 2011) (corrected certificate of service).

19. *Tennessee Valley Authority* (Watts Bar, Unit 2), Southern Alliance for Clean Energy: *Tennessee Valley Authority's Answer Opposing Petitioners' Motion to Permit a Consolidated Reply* (May 16, 2011); *Tennessee Valley Authority's Answer Opposing Petitioners' Motion to Permit a Consolidated Reply* (May 20, 2011) (corrected certificate of service).

20. *Virginia Electric and Power Co. d/b/a Dominion Virginia Power and Old Dominion Electric Cooperative* (North Anna, Unit 3), Blue Ridge Environmental Defense League, People's Alliance for Clean Energy: *Dominion's Answer Opposing Motion to Permit Unauthorized Reply* (May 19, 2011).

VI. Supplemental Comments and Supporting Declarations

1. AP1000 Design Certification Amendment (10 C.F.R. Part 52), AP1000 Oversight Group, Bellefonte Efficiency and Sustainability Team, Blue Ridge Environmental Defense League, Citizens Allied for Safe Energy, Friends of the Earth, Georgia Women's Action for New Directions, Green Party of Florida, Mothers Against Tennessee River Radiation, North Carolina Waste Awareness and Reduction Network, Nuclear Information and Resource Service, Nuclear Watch South, South Carolina Chapter-Sierra Club, Southern Alliance for Clean Energy: *Petition to Terminate the Rulemaking on Design Certification of the AP1000 Reactor and Declare it Null and Void* (June 16, 2011) (*SECOND PETITION, rather than Supplemental Comments*).

2. ESBWR Design Certification Amendment (10 C.F.R. Part 52), Beyond Nuclear, Citizens Environment Alliance, Citizens for Alternatives to Chemical Contamination, Don't Waste Michigan, Sierra Club-MI Chapter: *Supplemental Comments by the ESBWR Intervenors et al. Regarding NEPA Requirement to Address Safety and Environmental Implications of the Fukushima Task Force Report* (Aug. 11, 2011).

3. *Progress Energy Carolinas, Inc.* (Shearon Harris Nuclear Power Plant, Units 2 and 3), North Carolina Waste Awareness and Reduction Network: *Supplemental Comments by NC WARN in Support of Emergency Petition Regarding NEPA Requirement to Address Safety and Environmental Implications of the Fukushima Task Force Report* (Aug. 11, 2011); *Declaration of Dr. Arjun Makhijani Regarding Safety and Environmental Significance of NRC Task Force Report Regarding Lessons Learned from Fukushima Daiichi Nuclear Power Station Accident* (Aug. 8, 2011).

4. *South Carolina Electric & Gas Co. and South Carolina Public Service Authority* (also referred to as Santee Cooper) (Virgil C. Summer Nuclear Station, Units 1 and 2), Friends of the Earth, South Carolina Chapter of Sierra Club: *Supplemental Comments by Friends of the Earth and the South Carolina Chapter of the Sierra Club in Support of Emergency Petition Regarding NEPA Requirement to Address Safety and Environmental Implications of the Fukushima Task Force Report* (Aug. 10, 2011); *Declaration of Dr. Arjun Makhijani Regarding Safety and Environmental Significance of NRC Task Force Report Regarding Lessons Learned from Fukushima Daiichi Nuclear Power Station Accident* (Aug. 8, 2011).

5. *Virginia Electric and Power Co. d/b/a Dominion Virginia Power and Old Dominion Electric Cooperative* (North Anna, Unit 3), Blue Ridge Environmental Defense League: *Supplemental Comments by the Blue Ridge Environmental Defense League in Support of Emergency Petition Regarding NEPA Requirement to Address Safety and Environmental Implications of the Fukushima Task Force Report* (Aug. 11, 2011); *Declaration of Dr. Arjun*

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Makhijani Regarding Safety and Environmental Significance of NRC Task Force Report Regarding Lessons Learned from Fukushima Daiichi Nuclear Power Station Accident (Aug. 8, 2011).

VII. Answers to Supplemental Comments

1. AP1000 Design Certification Amendment (10 C.F.R. Part 52), AP1000 Oversight Group, Bellefonte Efficiency and Sustainability Team, Blue Ridge Environmental Defense League, Citizens Allied for Safe Energy, Friends of the Earth, Georgia Women's Action for New Directions, Green Party of Florida, Mothers Against Tennessee River Radiation, North Carolina Waste Awareness and Reduction Network, Nuclear Information and Resource Service, Nuclear Watch South, South Carolina Chapter-Sierra Club, Southern Alliance for Clean Energy: Ziesing, R.F., Westinghouse Electric Co., letter to Annette L. Vietti-Cook, NRC, "Petition to Terminate the Rulemaking on Design Certification of the AP1000 Reactor and Declare it Null and Void" (Aug. 15, 2011) (*RESPONSE TO SECOND PETITION, rather than Answer to Supplemental Comments*).
2. *Progress Energy Carolinas, Inc.* (Shearon Harris Nuclear Power Plant, Units 2 and 3), North Carolina Waste Awareness and Reduction Network: *Progress Energy Carolina's Objection to the North Carolina Waste Awareness and Reduction Network's Supplemental Comments Relating to Petition to Suspend Licensing Proceedings* (Aug. 22, 2011).
3. *Progress Energy Carolinas, Inc.* (Shearon Harris Nuclear Power Plant, Units 2 and 3), North Carolina Waste Awareness and Reduction Network: *NRC Staff's Answer to Supplemental Comments in Support of Emergency Petition Regarding Fukushima Task Force Report* (Aug. 22, 2011).
4. *South Carolina Electric & Gas Co. and South Carolina Public Service Authority (also referred to as Santee Cooper)* (Virgil C. Summer Nuclear Station, Units 1 and 2), Friends of the Earth, South Carolina Chapter of Sierra Club: *South Carolina Electric & Gas Company's Answer in Opposition to Supplemental Comments Regarding Fukushima Task Force Report* (Aug. 22, 2011).
5. *South Carolina Electric & Gas Co. and South Carolina Public Service Authority (also referred to as Santee Cooper)* (Virgil C. Summer Nuclear Station, Units 1 and 2), Friends of the Earth, South Carolina Chapter of Sierra Club: *NRC Staff Answer to Supplemental Comments in Support of Emergency Petition Regarding Fukushima Task Force Report* (Aug. 22, 2011).
6. *Virginia Electric and Power Co. d/b/a Dominion Virginia Power and Old Dominion Electric Cooperative* (North Anna, Unit 3), Blue Ridge Environmental Defense League: *Dominion's Objection to the Blue Ridge Environmental League's Supplemental Comments Relating to Petition to Suspend Pending Licensing Proceedings* (Aug. 22, 2011).
7. *Virginia Electric and Power Co. d/b/a Dominion Virginia Power and Old Dominion Electric Cooperative* (North Anna, Unit 3), Blue Ridge Environmental Defense League: *NRC Staff's Answer to Supplemental Comments in Support of Emergency Petition Regarding Fukushima Task Force Report* (Aug. 22, 2011).

VIII. Rulemaking Petitions/Requests to Suspend; Supporting Declarations

1. *Calvert Cliffs Nuclear Project, LLC* (Calvert Cliffs Nuclear Power Plant, Unit 3), Nuclear Information and Resource Service: *Rulemaking Petition to Rescind Prohibition Against*

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Consideration of Environmental Impacts of Severe Reactor and Spent Fuel Pool Accidents and Requests to Suspend Licensing Decision (Aug. 11, 2011); *Declaration of Dr. Arjun Makhijani Regarding Safety and Environmental Significance of NRC Task Force Report Regarding Lessons Learned from Fukushima Daiichi Nuclear Power Station Accident* (Aug. 8, 2011).

2. *Detroit Edison Co.* (Fermi Nuclear Power Plant, Unit 3), Keith Gunter, Michael J. Keegan, Edward McArdle, Leonard Mandeville, Frank Mantei, Marcee Meyers, Henry Newnan, Sierra Club, Don't Waste Michigan, Inc., Citizens Environment Alliance of Southwestern Ontario, Beyond Nuclear, George Steinman, Shirley Steinman, Harold L. Stokes, Citizens for Alternatives to Chemical Contamination, Marilyn R. Timmer, Derek Coronado, Sandra Bihn, Richard Coronado: *Rulemaking Petition to Rescind Prohibition Against Consideration of Environmental Impacts of Severe Reactor and Spent Fuel Pool Accidents and Requests to Suspend Licensing Decision* (Aug. 11, 2011); *Declaration of Dr. Arjun Makhijani Regarding Safety and Environmental Significance of NRC Task Force Report Regarding Lessons Learned from Fukushima Daiichi Nuclear Power Station Accident* (Aug. 8, 2011).

3. *Energy Northwest* (Columbia Generating Station), Northwest Environmental Advocates: *Rulemaking Petition to Rescind Prohibition Against Consideration of Environmental Impacts of Severe Reactor and Spent Fuel Pool Accidents and Request to Suspend Licensing Decision* (Aug. 22, 2011); *Declaration of Dr. Arjun Makhijani Regarding Safety and Environmental Significance of NRC Task Force Report Regarding Lessons Learned from Fukushima Daiichi Nuclear Power Station Accident* (Aug. 8, 2011).

4. *Entergy Nuclear Operations, Inc.* (Indian Point Nuclear Generating Station, Units 2 and 3), Hudson River Sloop Clearwater, Inc., Riverkeeper: *Riverkeeper, Inc. and Hudson River Sloop Clearwater, Inc. Rulemaking Petition to Rescind Prohibition Against Consideration to Environmental Impacts of Severe Reactor and Spent Fuel Pool Accidents and Request to Suspend Licensing Decision* (Aug. 11, 2011); *Declaration of Dr. Arjun Makhijani Regarding Safety and Environmental Significance of NRC Task Force Report Regarding Lessons Learned from Fukushima Daiichi Nuclear Power Station Accident* (Aug. 8, 2011).

5. *FirstEnergy Nuclear Operating Co.* (Davis-Besse Nuclear Power Station, Unit 1), Citizens Environment Alliance of Southwestern Ontario, Don't Waste Michigan, Green Party of Ohio, Beyond Nuclear: *Rulemaking Petition to Rescind Prohibition Against Consideration of Environmental Impacts of Severe Reactor and Spent Fuel Pool Accidents And Request to Suspend Licensing Decision* (Aug. 12, 2011); *Declaration of Dr. Arjun Makhijani Regarding Safety and Environmental Significance of NRC Task Force Report Regarding Lessons Learned from Fukushima Daiichi Nuclear Power Station Accident* (Aug. 8, 2011).

6. *Florida Power & Light Co.* (Turkey Point, Units 6 and 7), Citizens Allied for Safe Energy, Inc.: *Rulemaking Petition to Rescind Prohibition Against Consideration of Environmental Impacts of Severe Reactor and Spent Fuel Pool Accidents And Request to Suspend Licensing Decision* (Aug. 12, 2011); *Declaration of Dr. Arjun Makhijani Regarding Safety and Environmental Significance of NRC Task Force Report Regarding Lessons Learned from Fukushima Daiichi Nuclear Power Station Accident* (Aug. 8, 2011).

7. *Florida Power & Light Co.* (Turkey Point, Units 6 and 7), Dan Kipnis, Mark Oncavage, National Parks Conservation Association, Southern Alliance for Clean Energy: *Rulemaking Petition to Rescind Prohibition Against Consideration of Environmental Impacts of Severe Reactor and Spent Fuel Pool Accidents and Request to Suspend Licensing Decision* (Aug. 11, 2011); *Declaration of Dr. Arjun Makhijani Regarding Safety and Environmental Significance of*

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NRC Task Force Report Regarding Lessons Learned from Fukushima Daiichi Nuclear Power Station Accident (Aug. 8, 2011).

8. *Luminant Generation Co. LLC (Comanche Peak Nuclear Power Plant, Units 3 and 4), Public Citizen, SEED Coalition: Rulemaking Petition to Rescind Prohibition Against Consideration of Environmental Impacts of Severe Reactor and Spent Fuel Pool Accidents and Request to Suspend Licensing Decision (Aug. 11, 2011); Declaration of Dr. Arjun Makhijani Regarding Safety and Environmental Significance of NRC Task Force Report Regarding Lessons Learned from Fukushima Daiichi Nuclear Power Station Accident (Aug. 8, 2011).*

9. *NextEra Energy Seabrook, LLC (Seabrook Station, Unit 1), Beyond Nuclear, Seacoast Anti-Pollution League, Sierra Club of New Hampshire: Rulemaking Petition to Rescind Prohibition Against Consideration of Environmental Impacts of Severe Reactor and Spent Fuel Pool Accidents and Request to Suspend Licensing Decision (Aug. 11, 2011); Declaration of Dr. Arjun Makhijani Regarding Safety and Environmental Significance of NRC Task Force Report Regarding Lessons Learned from Fukushima Daiichi Nuclear Power Station Accident (Aug. 8, 2011).*

10. *NextEra Energy Seabrook, LLC (Seabrook Station, Unit 1), Friends of the Coast, New England Coalition: Rulemaking Petition to Rescind Prohibition Against Consideration of Environmental Impacts of Severe Reactor and Spent Fuel Pool Accidents and Request to Suspend Licensing Decision (Aug. 11, 2011); Declaration of Dr. Arjun Makhijani Regarding Safety and Environmental Significance of NRC Task Force Report Regarding Lessons Learned from Fukushima Daiichi Nuclear Power Station Accident (Aug. 8, 2011).*

11. *Pacific Gas and Electric Co. (Diablo Canyon Power Plant, Units 1 and 2), San Luis Obispo Mothers for Peace: Rulemaking Petition to Rescind Prohibition Against Consideration of Environmental Impacts of Severe Reactor and Spent Fuel Pool Accidents and Request to Suspend Licensing Decision (Aug. 11, 2011); Declaration of Dr. Arjun Makhijani Regarding Safety and Environmental Significance of Task Force Report Regarding Lessons Learned from Fukushima Daiichi Nuclear Power Station Accident (Aug. 8, 2011).*

12. *PPL Bell Bend, LLC (Bell Bend Nuclear Power Plant), Gene Stilp: Rulemaking Petition to Rescind Prohibition Against Consideration of Environmental Impacts of Severe Reactor and Spent Fuel Pool Accidents and Request to Suspend Licensing Decision (Aug. 10, 2011); Declaration of Dr. Arjun Makhijani Regarding Safety and Environmental Significance of Lessons Learned from Fukushima Daiichi Nuclear Power Station Accident (Aug. 8, 2011).*

13. *Progress Energy Florida, Inc. (Levy County Nuclear Power Plant, Units 1 and 2), Nuclear Information and Resource Service, The Ecology Party of Florida, Green Party of Florida: Rulemaking Petition to Rescind Prohibition Against Consideration of Environmental Impacts of Severe Reactor and Spent Fuel Pool Accidents and Request to Suspend Licensing Decision (Aug. 11, 2011); Declaration of Dr. Arjun Makhijani Regarding Safety and Environmental Significance of NRC Task Force Report Regarding Lessons Learned from Fukushima Daiichi Nuclear Power Station Accident (Aug. 8, 2011).*

14. *Nuclear Innovation North America LLC (South Texas Project, Units 3 and 4), Public Citizen, SEED Coalition: Rulemaking Petition to Rescind Prohibition Against Consideration of Environmental Impacts of Sever Reactor and Spent Fuel Pool Accidents and Request to Suspend Licensing Decision (Aug. 11, 2011); Declaration of Dr. Arjun Makhijani Regarding*

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Safety and Environmental Significance of Lessons Learned from Fukushima Daiichi Nuclear Power Station Accident (Aug. 8, 2011).

15. *Southern Nuclear Operating Co.* (Vogtle Electric Generating Plant, Units 3 and 4), Blue Ridge Environmental Defense League, Center for a Sustainable Coast, Georgia Women's Action for New Directions, Savannah Riverkeeper, Southern Alliance for Clean Energy: *Rulemaking Petition to Rescind Prohibition Against Consideration of Environmental Impacts of Severe Reactor and Spent Fuel Pool Accidents and Request to Suspend Licensing Decision* (Aug. 11, 2011); *Declaration of Dr. Arjun Makhijani Regarding Lessons Learned from Fukushima Daiichi Nuclear Power Station Accident* (Aug. 8, 2011).

16. *Tennessee Valley Authority* (Watts Bar, Unit 2), Southern Alliance for Clean Energy: *Rulemaking Petition to Rescind Prohibition Against Consideration of Environmental Impacts of Severe Reactor and Spent Fuel Pool Accidents and Request to Suspend Licensing Decision* (Aug. 11, 2011); *Declaration of Dr. Arjun Makhijani Regarding Safety and Environmental Significance of NRC Task Force Report Regarding Lessons Learned from Fukushima Daiichi Nuclear Power Station Accident* (Aug. 8, 2011).

IX. Responses to Rulemaking Petitions/Requests to Suspend

1. *Florida Power & Light Co.* (Turkey Point, Units 6 and 7), Citizens Allied for Safe Energy, Inc.: *Florida Power & Light Company's Response Opposing Request for Stay of Licensing Proceedings Pending Resolution of Rulemaking Petition* (Aug. 20, 2011).

2. *Florida Power & Light Co.* (Turkey Point, Units 6 and 7), Dan Kipnis, Mark Oncavage, National Parks Conservation Association, Southern Alliance for Clean Energy: *Florida Power & Light Company's Response Opposing Request for Stay of Licensing Proceedings Pending Resolution of Rulemaking Petition* (Aug. 20, 2011).

3. *NextEra Energy Seabrook, LLC* (Seabrook Station, Unit 1), Beyond Nuclear, Seacoast Anti-Pollution League, Sierra Club of New Hampshire: *NextEra Energy Seabrook, LLC's Response Opposing Request to Suspend Licensing Proceedings Pending Resolution of Rulemaking Petition* (Aug. 22, 2011).

4. *NextEra Energy Seabrook, LLC* (Seabrook Station, Unit 1), Friends of the Coast, New England Coalition: *NextEra Energy Seabrook, LLC's Response Opposing Request to Suspend Licensing Proceedings Pending Resolution of Rulemaking Petition* (Aug. 22, 2011).

5. *Progress Energy Florida, Inc.* (Levy County Nuclear Power Plant, Units 1 and 2), Nuclear Information and Resource Service, The Ecology Party of Florida, Green Party of Florida: *Progress Energy Florida, Inc.'s Response Opposing Request for Suspension of Licensing Proceedings Pending Resolution of Rulemaking Petition* (Aug. 22, 2011).

X. Reply to Responses to Rulemaking Petitions/Requests to Suspend

1. *Florida Power & Light Co.* (Turkey Point, Units 6 and 7), Dan Kipnis, Mark Oncavage, National Parks Conservation Association, Southern Alliance for Clean Energy: *Joint Intervenor's Motion for Leave to Reply to Florida Power & Light Company's Response Opposing Request for Stay of Licensing Proceedings Pending Resolution of Rulemaking Petition* (Aug. 29, 2011).

APPENDIX**XI. Opposition to Reply to Responses to Rulemaking Petitions/Requests to Suspend**

1. *Florida Power & Light Co.* (Turkey Point, Units 6 and 7), Dan Kipnis, Mark Oncavage, National Parks Conservation Association, Southern Alliance for Clean Energy: *Florida Power & Light Company's Response Opposing Joint Intervenors' Motion for Leave to Reply* (Sept. 8, 2011).

For the Nuclear Regulatory Commission.

James R. Hall,

*Senior Project Manager, Plant Licensing
Branch IV, Division of Operating Reactor
Licensing, Office of Nuclear Reactor
Regulation.*

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BILLING CODE 7590-01-P

NUCLEAR REGULATORY COMMISSION

[NRC-2010-0355; Order EA-11-180; Docket
Nos. 70-7003, 70-7004; License Nos. SNM-
7003, SNM-2011]

In the Matter of USEC Inc., American Centrifuge Lead Cascade Facility, and American Centrifuge Plant; Order Extending the Date by Which the Direct Transfer of Licenses Is To Be Completed

I

USEC Inc. (USEC) is the holder of materials licenses SNM-7003 and SNM-2011 for the American Centrifuge Lead Cascade Facility (Lead Cascade) and American Centrifuge Plant (ACP), respectively, which authorize the licensee to: (1) Possess and use source and special nuclear material at the Lead Cascade at the Portsmouth Gaseous Diffusion Plant site in Piketon, Ohio, in accordance with materials license number SNM-7003; and (2) construct and operate a gas centrifuge uranium enrichment facility (the ACP) at the Portsmouth Gaseous Diffusion Plant site in Piketon, Ohio, in accordance with materials license number SNM-2011.

II

The U.S. Nuclear Regulatory Commission's (NRC) Order, dated February 10, 2011, approved the direct transfer of the licenses of the above facilities from USEC to the limited liability company American Centrifuge Operating, LLC (ACO), pursuant to Sections 161(b), 161(i), 161(o) and 184 of the Atomic Energy Act, as amended; 42 United States Code (U.S.C.) 2201(b), 2201(i), and 2234; and Title 10 *Code of Federal Regulations* (10 CFR) parts 30.34(b), 40.46, "Inalienability of Licenses," and 70.36, "Inalienability of Licenses." By its terms, the February 10, 2011, Order will become null and void if the license transfers are not completed within 180 days from February 10, 2011 (i.e., by August 9, 2011). However, the February 10 Order further states that upon written application and for good cause shown, the 180-day period may be extended by further Order.

III

By letter dated July 22, 2011, as supplemented by electronic communication dated August 1, 2011, USEC submitted a request to extend the date by which the license transfers must be completed from August 9, 2011, to February 9, 2012. USEC stated that it has been working diligently with the Department of Energy over the past several months to conclude the review process for USEC's loan guarantee application, but would not be able to complete this process by August 9, 2011.

USEC states that there have been no changes in the information and technical and financial qualifications presented in its September 10, 2010, request to transfer the licenses. USEC states that the basis for granting that request has, thus, not changed and remains valid. The NRC staff notes that its basis for approving the transfers of USEC's licenses for the Lead Cascade and the ACP from USEC to ACO is documented in its Safety Evaluation Report (SER) supporting the February 10 Order. The NRC staff concluded that the basis for approval has not changed since the issuance of the February 10 Order.

The NRC staff has considered the submittal of July 22, 2011, as supplemented by electronic communication dated August 1, 2011, and has determined that good cause has been shown to extend, until February 9, 2012, the date by which the license transfers must be completed.

IV

Accordingly, pursuant to Sections 161b, 161i, 161o, and 184 of the Atomic Energy Act of 1954, as amended, 42 U.S.C. 2201(b), 2201(i), and 2234; and 10 CFR 30.34(b), 40.46, "Inalienability of Licenses," and 70.36, "Inalienability of Licenses," *It Is Hereby Ordered* that the date by which the license transfers described above must be completed is extended to February 9, 2012. If the proposed direct transfer of licenses is not completed by February 9, 2012, this Order and the February 10 Order shall become null and void. However, upon written application and for good cause shown, the February 9, 2012, date may be extended by further Order.

This Order is effective upon issuance. The Order of February 10, 2011, as modified by this Order, remains in full force and effect.

For further details with respect to this Order, see the submittal dated July 22, 2011 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML11210B497), as supplemented by electronic

communication dated August 1, 2011 (ADAMS Accession No. ML11213A282), and the SER documenting NRC's staff evaluation of USEC's submittal dated July 22, 2011 (ADAMS Accession No. ML112140088), which may be examined—and/or copied for a fee—at the NRC's Public Document Room, located at One White Flint North, 11555 Rockville Pike (First Floor), Rockville, MD 20852; and accessible online in the NRC Library at <http://www.nrc.gov/reading-rm/adams.html>.

Dated at Rockville, Maryland, this 8th day of August 2011.

For the U.S. Nuclear Regulatory
Commission.

Catherine Haney,

*Director, Office of Nuclear Material Safety
and Safeguards.*

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NUCLEAR REGULATORY COMMISSION

[NRC-2008-0441; Docket Nos. 52-025-COL
and 52-026-COL]

Southern Nuclear Operating Co., et al.; Combined Licenses for Vogtle Electric Generating Plant, Units 3 and 4, and Limited Work Authorizations

AGENCY: Nuclear Regulatory
Commission.

ACTION: Notice of hearing.

SUMMARY: The U.S. Nuclear Regulatory Commission (NRC or the Commission) will convene an evidentiary session to receive testimony and exhibits in the uncontested portion of this proceeding regarding the application of Southern Nuclear Operating Company for two combined licenses (COLs) seeking approval to construct and operate new nuclear power generation facilities at the Vogtle Electric Generating Plant, Units 3 & 4 (VEGP), as well as for two limited work authorizations (LWAs) to engage in selected construction activities. This mandatory hearing will concern safety and environmental matters relating to the proposed issuance of the requested COLs and LWAs.

DATES: The hearing will be held on September 27, 2011, from 9 a.m. (Eastern Daylight Time). For a schedule for submitting prefiled documents and deadlines affecting Interested Government Participants, see the **SUPPLEMENTARY INFORMATION** section of this document.

FOR FURTHER INFORMATION CONTACT:
Rochelle C. Baval, Office of the
Secretary, U.S. Nuclear Regulatory

Commission, Washington, DC 20555–0001, telephone: 301–415–1651; e-mail: Rochelle.Bavol@nrc.gov.

SUPPLEMENTARY INFORMATION:

Background

The Commission hereby gives notice that, pursuant to Section 189a of the Atomic Energy Act, it will convene an evidentiary session to receive testimony and exhibits in the uncontested portion of this proceeding regarding the March 28, 2008, application of Southern Nuclear Operating Company, acting for itself and Georgia Power Company, Oglethorpe Power Corporation, Municipal Electric Authority of Georgia, and the City of Dalton, Georgia, for two Title 10 of the *Code of Federal Regulations* (10 CFR) part 52 combined licenses (COLs), seeking approval to construct and operate new nuclear power generation facilities at the existing Vogtle Electric Generating Plant (VEGP) site near Waynesboro, Georgia. This mandatory hearing will also encompass the applicant's October 2, 2009, request for two limited work authorizations (LWAs) to engage in selected construction activities as defined in 10 CFR 50.10. This mandatory hearing will concern safety and environmental matters relating to the proposed issuance of the requested COLs and LWAs, as more fully described below. Participants in the hearing are not to address any contested issues in their written filings or oral presentations.

Matters To Be Considered

The matter at issue in this proceeding is whether the review of the application by the Commission's staff has been adequate to support the findings found in 10 CFR 52.97 and 10 CFR 51.107(a), for each of the COLs to be issued, and in 10 CFR 50.10 and 10 CFR 51.107(d), with respect to the LWAs. Those findings are as follows:

Issues Pursuant to the Atomic Energy Act of 1954, as Amended

With respect to each COL: (1) Whether the applicable standards and requirements of the Act and the Commission's regulations have been met; (2) whether any required notifications to other agencies or bodies have been duly made; (3) whether there is reasonable assurance that the facility will be constructed and will operate in conformity with the license, the provisions of the Act, and the Commission's regulations; (4) whether the applicant is technically and financially qualified to engage in the activities authorized; and (5) whether issuance of the license will not be

inimical to the common defense and security or the health and safety of the public.

With respect to the LWAs: (1) Whether the applicable standards and requirements of the Atomic Energy Act of 1954, as amended, and the Commission's regulations applicable to the activities to be conducted under the LWAs, have been met; (2) whether the applicant is technically qualified to engage in the activities authorized; (3) whether issuance of the LWAs will provide reasonable assurance of adequate protection to public health and safety and will not be inimical to the common defense and security; and (4) whether there are no unresolved safety issues relating to the activities to be conducted under the LWAs that would constitute good cause for withholding the authorization.

Issues Pursuant to the National Environmental Policy Act (NEPA) of 1969, as Amended

With respect to each COL: (1) Determine whether the requirements of Sections 102(2) (A), (C), and (E) of NEPA and the applicable regulations in 10 CFR part 51 have been met; (2) independently consider the final balance among conflicting factors contained in the record of the proceeding with a view to determining the appropriate action to be taken; (3) determine, after weighing the environmental, economic, technical, and other benefits against environmental and other costs, and considering reasonable alternatives, whether the combined license should be issued, denied, or appropriately conditioned to protect environmental values; and (4) determine whether the NEPA review conducted by the NRC staff has been adequate.

With respect to the LWAs: (1) Determine whether the requirements of Section 102(2)(A), (C), and (E) of NEPA and the regulations in Subpart A of 10 CFR part 51 have been met, with respect to the activities to be conducted under the LWAs; (2) independently consider the balance among conflicting factors with respect to the LWAs, which is contained in the record of the proceeding, with a review to determining the appropriate action to be taken; (3) determine whether the redress plan will adequately redress the activities performed under the LWAs, should limited work activities be terminated by the holder or the LWAs be revoked by the NRC, or upon effectiveness of the Commission's final decision denying the COL application; and (4) determine whether the NEPA

review conducted by the NRC staff for the LWAs has been adequate.

Evidentiary Uncontested Hearing

The Commission will conduct this hearing beginning at 9 a.m., Eastern Daylight Time (EDT) on September 27, 2011, at the Commission's headquarters in Rockville, Maryland. The hearing on these issues will continue on subsequent days, if necessary.

Presiding Officer

The Commission is the presiding officer for this proceeding.

Schedule for Submittal of Pre-Filed Documents

No later than September 12, 2011, unless the Commission directs otherwise, the staff and the applicant shall submit a list of its anticipated witnesses for the hearing.

No later than September 12, 2011, unless the Commission directs otherwise, the applicant shall submit its pre-filed written testimony. The staff previously submitted its testimony on August 9, 2011.

The Commission may issue written questions to the applicant or the staff before the hearing. If such questions are issued, an order containing such questions will be issued no later than August 30, 2011. Responses to such questions are due September 12, 2011, unless the Commission directs otherwise.

Interested Government Participants

No later than August 26, 2011, any interested State, local government body, or affected, Federally-recognized Indian Tribe may file with the Commission a statement of any issues or questions that the State, local government body, or Indian Tribe wishes the Commission to give particular attention to as part of the uncontested hearing process. Such statement may be accompanied by any supporting documentation that the State, local government body, or Indian Tribe sees fit to provide. Any statements and supporting documentation (if any) received by the Commission using the agency's E-filing system¹ by the

¹ The process for accessing and using the agency's E-filing system is described in the September 16, 2008, notice of hearing that was issued by the Commission for this proceeding. See Notice of Hearing and Opportunity To Petition for Leave To Intervene and Order Imposing Procedures for Access to Sensitive Unclassified Non-Safeguards Information and Safeguards Information for Contention Preparation on a Combined License for the Vogtle Electric Generating Plant Units 3 and 4 [73 FR 53446]. Participants who are unable to use the EIE, or who will have difficulty complying with EIE requirements in the time frame provided for submission of written statements, may provide their statements by electronic mail to hearingdocket@nrc.gov.

deadline indicated above will be made part of the record of the proceeding. The Commission will use such statements and documents as appropriate to inform its pre-hearing questions to the Staff and applicant, its inquiries at the oral hearing and its decision following the hearing. The Commission may also request, prior to September 13, 2011, that one or more particular States, local government bodies, or Indian Tribes send one representative each to the evidentiary hearing to answer Commission questions and/or make a statement for the purpose of assisting the Commission's exploration of one or more of the issues raised by the State, local government body, or Indian Tribe in the pre-hearing filings described above. The decision of whether to request the presence of a representative of a State, local government body, or Indian Tribe at the evidentiary hearing to make a statement and/or answer Commission questions is solely at the Commission's discretion. The Commission's request will specify the issue or issues that the representative should be prepared to address.

States, local governments, or Indian Tribes should be aware that this evidentiary hearing is separate and distinct from the NRC's contested hearing process. Issues within the scope of contentions that have been admitted in a contested proceeding for a COL application are outside the scope of the uncontested proceeding for that COL application. In addition, while States, local governments, or Indian Tribes participating as described above may take any position they wish, or no position at all, with respect to issues regarding the COL application or the NRC Staff's associated environmental review that do fall within the scope of the uncontested proceeding (*i.e.*, issues that are not within the scope of admitted contentions), they should be aware that many of the procedures and rights applicable to the NRC's contested hearing process due to the inherently adversarial nature of such proceedings are not available with respect to this uncontested hearing. Participation in the NRC's contested hearing process is governed by 10 CFR 2.309 (for persons or entities, including States, local governments, or Indian Tribes, seeking to file contentions of their own) and 10 CFR 2.315(c) (for interested States, local governments, and Indian Tribes seeking to participate with respect to contentions filed by others). Participation in this uncontested hearing does not affect a State's, local government's, or Indian Tribe's right to

participate in the separate contested hearing process.

Dated at Rockville, Maryland, this 10th day of August 2011.

For the Nuclear Regulatory Commission.

Andrew L. Bates,

Acting Secretary of the Commission.

[FR Doc. 2011-20938 Filed 8-12-11; 4:15 pm]

BILLING CODE 7590-01-P

NUCLEAR REGULATORY COMMISSION

[NRC-2011-0006]

Sunshine Act Meetings

AGENCY HOLDING THE MEETINGS: Nuclear Regulatory Commission.

DATES: Weeks of August 15, 22, 29, September 5, 12, 19, 2011.

PLACE: Commissioners' Conference Room, 11555 Rockville Pike, Rockville, Maryland.

STATUS: Public and Closed.

Week of August 15, 2011

There are no meetings scheduled for the week of August 15, 2011.

Week of August 22, 2011—Tentative

There are no meetings scheduled for the week of August 22, 2011.

Week of August 29, 2011—Tentative

Tuesday, August 30, 2011

8:55 a.m. Affirmation Session (Public Meeting) (Tentative)

Final Rule: Enhancements to Emergency Preparedness Regulations (10 CFR part 50 and 10 CFR part 52) (RIN-3150-A110) (Tentative)

This meeting will be webcast live at the Web address—<http://www.nrc.gov>.

9 a.m. Information Briefing on Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) Related Activities (Public Meeting) (Contact: Aida Rivera-Varona, 301-251-4001)

This meeting will be webcast live at the Web address—<http://www.nrc.gov>.

Week of September 5, 2011—Tentative

There are no meetings scheduled for the week of September 5, 2011.

Week of September 12, 2011—Tentative

There are no meetings scheduled for the week of September 12, 2011.

Week of September 19, 2011—Tentative

There are no meetings scheduled for the week of September 19, 2011.

* * * * *

* The schedule for Commission meetings is subject to change on short

notice. To verify the status of meetings, call (recording)—(301) 415-1292. Contact person for more information: Rochelle Baval, (301) 415-1651.

* * * * *

The NRC Commission Meeting Schedule can be found on the Internet at: <http://www.nrc.gov/public-involve/public-meetings/schedule.html>.

* * * * *

The NRC provides reasonable accommodation to individuals with disabilities where appropriate. If you need a reasonable accommodation to participate in these public meetings, or need this meeting notice or the transcript or other information from the public meetings in another format (*e.g.*, braille, large print), please notify Bill Dosch, Chief, Work Life and Benefits Branch, at 301-415-6200, TDD: 301-415-2100, or by e-mail at william.dosch@nrc.gov. Determinations on requests for reasonable accommodation will be made on a case-by-case basis.

* * * * *

This notice is distributed electronically to subscribers. If you no longer wish to receive it, or would like to be added to the distribution, please contact the Office of the Secretary, Washington, DC 20555 (301-415-1969), or send an e-mail to darlene.wright@nrc.gov.

Dated: August 11, 2011.

Rochelle C. Baval,

Policy Coordinator, Office of the Secretary.

[FR Doc. 2011-20940 Filed 8-12-11; 4:15 pm]

BILLING CODE 7590-01-P

OFFICE OF PERSONNEL MANAGEMENT

[OMB Control number 3206-0248]

Submission for Review: Application for Senior Administrative Law Judge (OPM Form 1655), and Geographic Preference Statement for Senior Administrative Law Judge Applicant (OPM Form 1655-A)

AGENCY: U.S. Office of Personnel Management.

ACTION: 30-Day Notice and request for comments.

SUMMARY: The Human Resources Solutions, U.S. Office of Personnel Management (OPM) offers the general public and other Federal agencies the opportunity to comment on an existing information collection request (ICR) 3206-0248, OPM 1655, and OPM 1655-A. These forms are used by retired Administrative Law Judges seeking

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of)

Southern Nuclear Operating Company, Inc.)

Combined License for Vogtle Electric)

Generating Plant Units 3 and 4)

Docket Nos. 52-025-COL and 52-026-COL

**MOTION TO REOPEN THE RECORD AND ADMIT CONTENTION TO ADDRESS
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, Center for a Sustainable Coast, Georgia Women's Action for New Directions f/k/a Atlanta Women's Action for New Directions, and Southern Alliance for Clean Energy (collectively, "Intervenors") hereby move 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"). Intervenors respectfully submit 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 and the accompanying contention are supported by the Declaration by Dr. Arjun Makhijani (August 8, 2011) (the “Makhijani Declaration”), which is attached and incorporated by reference herein. The Motion is also supported by a certification required by 10 C.F.R. § 2.323(b).

II. BACKGROUND

On November 17, 2008, Intervenors filed a petition to intervene in the Plant Vogtle COL proceeding.¹ 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.²

¹ Intervenors were joined by Blue Ridge Environmental Defense League and Savannah Riverkeeper in the petition. The five groups were collectively referred to as “Joint Intervenors”.

² 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 it satisfies the requirements of 10 C.F.R. §§ 2.309 (c) and (f), as discussed in this Motion and the accompanying contention.

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 contentions. 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 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 contentions) or 10 C.F.R. § 2.309(c) (governing non-timely contentions). As provided in the accompanying contention, each of the requirements set forth in 10 C.F.R. § 2.309(f)(1) is satisfied. Furthermore, Intervenor maintain 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, Intervenor 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* Makhijani Declaration at paras. 6 and 10. The Motion and accompanying contention are timely based on the availability of the new information.

Intervenors have submitted this Motion and accompanying contention in a timely fashion. The NRC customarily recognizes as timely contentions 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, 2001. 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 Makhijani Declaration at paras. 7-9, the environmental issues raised in this contention are significant and 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 paras. 10-25 of the 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 three 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 Makhijani Declaration Fully Supports and Sets 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* Makhijani Declaration at paras. 6-25. As demonstrated in his declaration, Dr. Makhijani is a highly qualified expert who is familiar with the Task Force Report. *Id.* at paras. 1-5. Moreover, the information in the Makhijani Declaration 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 Contentions 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 non-timely contentions 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. 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.

Intervenors were each previously admitted as parties in the Vogtle COL proceeding, based upon standing declarations from their members. *Southern Nuclear Operating Co.* (Vogtle, Units 3 & 4), ASLBP-09-873-01-COL-BD01 (2009). In support of this Motion, Intervenors are submitting declarations from the principal officers of each Intervenor reflecting their continuing relationship with and representation of these individuals. The declarations of the principal officers provide, for each Intervenor, that: (1) the organization continues to represent the interests of its members who previously filed standing declarations in the Vogtle COL proceeding, (2) there has been no substantial change in the organization's status or standing regarding its participation in this proceeding, and (3) there has been no material change in the factual bases upon which the members' standing declarations were based, including, without limitation, the proximity of each individual's residence to the Vogtle Electric Generating Plant. Accordingly, Intervenors continue to have a right to be a party to this proceeding.

3. Nature of Intervenors' Interest in the Proceeding.

Intervenors seek 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 Intervenors in this proceeding live within fifty (50) miles of the Vogtle

Electric Generating Plant, Intervenor 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 Intervenor’s Interest in the Proceeding.

As noted above, Intervenor’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 Intervenor’s Interests.

With regard to this factor, the question is not whether other parties may protect Intervenor’s interests, but rather whether there are other means by which Intervenor may protect their 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 Intervenor 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 Intervenor.

6. Extent the Intervenor’s Interests are Represented by Other Parties.

No other party can represent Intervenor’s interests in protecting the health, safety, and environment of their members. Indeed, there are no parties currently admitted in the contested proceeding. As such, Intervenor’s interests cannot be represented by any other party.

Intervenors acknowledge that Blue Ridge Environmental Defense League (“BREDL”) is filing a similar Motion and new contention. While the concerns raised by Intervenors and BREDL may be consolidated at some point in the future, such consolidation should not impact a determination as to whether Intervenors’ interests are currently represented by other parties.³ As of the date of this filing, no party can represent Intervenors’ interests.

7. Extent That Participation Will Broaden the Issues.

While Intervenors’ 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 Intervenors’ 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 contentions were heard, thereby eliminating any need to hold up plant construction pending resolution of those contentions.).

³ Moreover, BREDL has made no indication that it is willing and able to represent Intervenors’ interests. *See Duke Power Co.* (Amendment to Materials License SNM-1773 – Transportation of Spent Fuel from Oconee Nuclear Station for Storage at McGuire Nuclear Station), ALAB-528, 9 NRC 146, 150 (1979) (finding that the fact that a successful petitioner has advanced a contention concededly akin to that of a late petitioner does not necessarily mean that the successful petitioner is both willing and able to represent the late petitioner’s interest.).

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

Intervenor will assist in the development of a sound record, as their contention is supported by the expert opinion of a highly qualified expert, Dr. Arjun Makhijani. *See* Makhijani Declaration; *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 Contentions 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. CONSULTATION CERTIFICATION PURSUANT TO 10 C.F.R. § 2.323(b)

Intervenor certifies that on August 9, 2011, we contacted counsel for the applicant and the NRC staff in an attempt to obtain their consent to this Motion. Counsel for the applicant opposed the Motion. While counsel for the NRC staff did not object to the filing of the Motion, counsel stated that it intended to file a response providing its position on the substance of any issues

raised in the Motion, including whether standards for record reopening and contention admissibility under 10 C.F.R. Part 2 have been met.

V. 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/
Mindy Goldstein
Turner Environmental Law Clinic
Emory University School of Law
1301 Clifton Road
Atlanta, GA 30322
Phone: (404) 712-8008
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Email: magolds@emory.edu

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

)	
In the Matter of)	
	)	Docket Nos. 52-025-COL and 52-026-COL
Southern Nuclear Operating Company, Inc.)	
)	
Combined License for 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), Center for a Sustainable Coast, Georgia Women’s Action for New Directions f/k/a Atlanta Women’s Action for New Directions, and Southern Alliance for Clean Energy (collectively, “Intervenors”) assert a new contention 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 significant – indeed 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 declaration of Dr. Arjun Makhijani of the Institute for Energy and Environmental Research. The contention is also supported by a Motion to Reopen the Record and Admit a New Contention.

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 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. *See* Makhijani Declaration at para. 9. The first warning, issued by the Rogovin Report over thirty years ago, 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.

Pursuant to the National Environmental Policy Act (“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.

Intervenors wish to point out that this contention is substantially similar to contentions and comments that are being filed this week in other pending reactor licensing and re-licensing cases and standardized design certification proceedings. In addition, Intervenors have joined with other individuals and organizations in a rulemaking petition seeking to suspend any regulations that would preclude full consideration of the environmental implications of the Task Force Report. A copy of the rulemaking petition is attached. Finally, in an Emergency Petition, now pending before the Commission for nearly four months, many of the same organizations and individuals previously 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 Petition”).

In the aggregate, these contentions, rulemaking comments, and the rulemaking petition follow up on the Emergency Petition’s demand that the NRC comply with NEPA by addressing the lessons of the Fukushima accident in its environmental analyses for licensing decisions. Having received no response to their Emergency Petition, the signatories to the Emergency Petition now seek consideration of the Task Force’s far-reaching conclusions and recommendations in each individual licensing proceeding, including the instant case.

The Intervenor recognizes that given the sweeping scope of the Task Force conclusions and recommendations, it may be more appropriate for the NRC to consider them in generic rather than site-specific environmental proceedings. That is for the NRC to decide. *Baltimore Gas & Electric Co. v. Natural Resources Defense Council*, 462 U.S. 87, 100 (1983). It is the NRC, and not the public, which is responsible for compliance with NEPA. *Duke Power Co. et al. (Catawba Nuclear Station, Units 1 and 2)*, CLI-83-19, 17 NRC 1041, 1049 (1983).

II. INTERVENORS’ NEW CONTENTION SATISFIES THE REQUIREMENTS OF 10 C.F.R § 2.309(f)(1).

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. 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 EIS.

B. Brief Explanation of the Basis for the Contention.

The Task Force Report

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 Atomic Energy Act (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 73-75.¹

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, headed by Mitchell Rogovin of the NRC’s Special Inquiry Group,

¹ The Task Force Report contains twelve “overarching” recommendations, which are summarized on pages 69-70.

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 Report. 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 Report’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 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 Report’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. *See* Makhijani Declaration at paras. 7, 9. 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. *See* Makhijani Declaration at para. 9.

The National Environmental Policy Act

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 environmental impact statement 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 of NEPA 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).

The EIS Does Not Consider the New and Significant Information Contained in the Task Force Report and the EIS Must Be Supplemented to Comply with NEPA.

The conclusions and recommendations presented in the Task Force Report constitute “new and significant information,” the environmental implications of which must be considered before the NRC may make a decision that approves operation of Vogtle Units 3 and 4. *See* 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 Vogtle 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. Courts have found that an EIS that fails to disclose and respond to expert opinions concerning the hazards of a proposed action, particularly those opinions of the agency’s own experts, are “fatally deficient” and run contrary to NEPA’s “hard look” requirement.² 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. *See* Makhijani Declaration para. 11.

² *Center for Biological Diversity v. United States Forest Service*, 349 F.3d 1157 (9th Cir. 2003) (finding an EIS’s failure to disclose and discuss responsible opposing scientific viewpoints violated NEPA and the implementing regulations); *Seattle Audubon Society v. Moseley*, 798 F.Supp. 1473, 1479 (W.D. Wash. 1992) aff’d sub nom *Seattle Audubon Society v. Espy*, 998 F.2d 699 (9th Cir. 1993) (quoting *Friends of the Earth v. Hall*, 693 F.Supp. 904, 934 (W.D. Wash. 1988) (“[a]n EIS that fails to disclose and respond to ‘the opinions held by well respected scientists concerning the hazards of the proposed action...is fatally deficient.’”)); *Western Watersheds Project v. Kraayenbrink*, 632 F.3d 472, 487 (9th Cir. 2010) (finding that agency failed to take a “hard look” under NEPA when it ignored concerns raised by its own experts); *see also Blue Mtns. Biodiversity Project v. Blackwood*, 161 F.3d 1208, 1213 (9th Cir. 1998) (noting that an agency’s failure to discuss and consider an independent scientific report’s recommendations “lends weight to [plaintiff’s] claim that the [agency] did not take the requisite ‘hard look’ at the environmental consequences” of the project).

The Task Force Report Reveals that the Full Spectrum of All Design-Basis Accidents Has Not Been Assessed and the EIS Must Be Supplemented to Consider Additional Design-Basis Accidents that Have the Potential for Releases to the Environment.

For example, in Section 5.10 the Vogtle EIS concludes that the radiological impacts of a design basis accident at proposed Units 3 and 4 would be “SMALL.” EIS at 5-17. This conclusion is based on the fact that the new Vogtle reactors will be built to a certified design that has been approved by the NRC under its safety standards. As explained in the EIS for the Vogtle Early Site Permit: “the bases for analyses of postulated accidents for this design are well established because they have been considered as part of the NRC’s advanced reactor design certification process.” NUREG-1872 at 5-77; *see also* EIS at 5-17 (“The DBAs listed in the table [in this EIS] are the same as those being considered in the design certification and those that were considered in the ESP review.”). With the issuance of the Task Force Report, these “well established” “bases” are now in question. 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 at para. 7.

The EIS Must Be Supplemented in Light of the Task Force Findings that Certain Accidents Formerly Classified as Severe Should Be Incorporated into the Design Basis.

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 (“COLAs”) 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 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 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. *See* Makhijani Declaration para. 24.

Were SAMAs imposed as mandatory measures, the outcome of the environmental analysis for Vogtle 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 reactors. As discussed in the Makhijani Declaration at paras. 13-24, 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.⁴

³ *See further* 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).

⁴ 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

The NRC cannot meet the fundamental purposes of NEPA, namely (1) to guarantee that the 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 decision-making process and the implementation of that decision,” *id.* at 349, if it does not include all of the costs associated with required mitigative measures in its environmental analysis. *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 EIS 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

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 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)).

to adequately protect SSCs 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.

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. *Id.* 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.* Accordingly, 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. *Id.* at 30.

The EIS 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 Plant 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. *See* Makhijani Declaration at para. 11.

The EIS 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* 40

C.F.R. § 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 station blackout (“SBO”) mitigation capability at all operating and new reactors for design-basis and beyond-design-basis external events (Section 4.2.1), requiring reliable 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 at paras. 15-24. Accordingly, the EIS 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.

Requirement for 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 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. Furthermore, 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.

Of course, 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.

Intervenors recognize that some issues raised by the Task Force Report may be appropriate for generic rather than case-specific resolution. 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 100. 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.

Intervenors rely 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 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.

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 Makhijani 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 11th day of August 2011.

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