August 12, 2011

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Before the Atomic Safety and Licensing Board

In the Matter of	)	Docket No. 52-033
The Detroit Edison Company (Fermi Nuclear Power Plant, Unit 3)	)	
	)	
	)	

* * * * *

CONTENTION IN SUPPORT OF 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

Beyond Nuclear, Citizens for Alternatives to Chemical Contamination, Citizens Environmental Alliance of Southwestern Ontario, Don't Waste Michigan, Sierra Club, Keith Gunter, Edward McArdle, Henry Newman, Derek Coronado, Sandra Bihn, Harold L. Stokes, Michael J. Keegan, Richard Coronado, George Steinman, Marilyn R. Timmer, Leonard Mandeville, Frank Mantei, Marcee Meyers, and Shirley Steinman ("Intervenors"), by and through counsel, hereby proffer in support of their Motion to Admit a New Contention the attached "Contention Regarding NEPA Requirement to Address Safety and Environmental Implications of the Fukushima Task Force Report," filed on August 11, 2011. Intervenors

incorporate by reference as though written herein the averments and arguments contained in the attachment.

Respectfully submitted this 12th day of August, 2011.

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August 11, 2011

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD
AND OFFICE OF THE SECRETARY

In the Matter of	)
	)
NEXTERA ENERGY SEABROOK (LLC)	)
[Also Known As FLORIDA POWER & LIGHT]	)
	)
SEABROOK NUCLEAR POWER PLANT	) DOCKET NO. 50-443-LR
	)
Regarding the	)
	)
Renewal of Facility Operating License	) ASLBP No. 10-906-02LR
No-NFP-86 for a 20-Year Period	)
	)

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), Beyond Nuclear, Seacoast Anti-Pollution League and New Hampshire Sierra Club (collectively "Intervenors" or "Petitioners") asserts a new contention seeking consideration of new and significant information relevant to the environmental analysis for the proposed re-licensing of Unit 1 reactor at the Seabrook nuclear generating station in Seabrook, NH. In the contention set forth in Section II below, Intervenors request a hearing on the significant – indeed extraordinary – safety and environmental implications for the Seabrook relicensing 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 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. 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 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 Seabrook under a renewed license are higher than estimated in the ER and (2) NextEra'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 Seabrook 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 license renewal decision for Seabrook.

The petitioners 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 petitioners recognize 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. THE PETITIONERS' NEW CONTENTION SATISFIES THE REQUIREMENTS OF 10 C.F.R. § 2.309 (f)(1).

1. Statement of Contention.

The ER for Seabrook license renewal 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 NEPA and the NRC regulations, these implications must be addressed in the ER.

2. 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 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, 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

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

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. 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 an NRC 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. Task Force Report at 16. While NRC NEPA regulations require consideration of severe accident mitigation measures, they need not be adopted unless they are found to be cost-beneficial.

See, e.g., Entergy Nuclear Operations, Inc. (Indian Point Nuclear Generating Station, Units 2 and 3), LBP-11-17, slip op. at 17 (July 14, 2011). Because the imposition of severe accident mitigation measures is based on cost considerations, they are not part of the design basis for adequate protection of public health and safety. *Union of Concerned Scientists v. NRC,* 824 F.2d 108, 120 (D.C. Cir. 1987).[2]

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

The National Environmental Policy Act.

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. §

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[2] 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.

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).

In order to aid the Commission in complying with NEPA, each applicant shall submit to the Commission an environmental report ("ER"). *See* 10 C.F.R.

§§ 51.14; 51.45. The ER must contain a description of the proposed action, a statement of its purposes, and a description of the environment affected. *Id*. § 51.45 (b). Further, the ER must discuss the impact of the proposed action on the environment, any adverse environmental effects which cannot be avoided should the proposal be implemented, alternatives to the proposed action, the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and any reversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented. *Id.* § 51.45 (b)(5). The ER must also contain an analysis that considers and balances the environmental effects of the proposed action, the environmental impacts of alternatives to the proposed action, and alternatives available for reducing or avoiding adverse environmental effects. *Id.* § 51.45 (c). An environmental report for the licensing action contemplated in this instance must also include consideration of the economic, technical, and other benefits and costs of the proposed action and its alternatives. *Id*. The environmental report must to the fullest extent practicable, quantify the various factors considered and contain sufficient data to aid the Commission in its development of an independent analysis. *Id.*

Within this regulatory framework, *"[t]he Commission recognizes a continuing obligation to conduct its domestic licensing and related regulatory functions in a manner which is both receptive to environmental concerns and consistent with the Commission's responsibility as an independent regulatory*

agency for protecting the radiological health and safety of the public." *Id*. § 51.10 (b) (emphasis added).

The Environmental Report Does Not Consider the Significant New Information Contained in the Task Force Report and the ER Must Be Supplemented to Comply with NEPA.

NEPA requires federal agencies to supplement their NEPA documentation when "*there are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts*." 40 C.F.R. § 1509(c)(1)(ii).

A federal agency's *continuing duty* to take a "*hard look*" at the environmental effects of their actions requires they consider, evaluate, and make a reasoned determination about the significance of this new information and prepare supplemental NEPA documentation accordingly. *Warm Springs Task Force v. Gribble*, 621 F.2d at 1023-24; *Stop H-3 Association v. Dole,* 740 F.2d 1442, 1463-64 (9th Cir. 1984). The need to supplement under NEPA when there is new and significant information is also found throughout the NRC regulations. *See* 10 C.F.R. §§ 51.92 (a)(2), 51.50(c)(iii), 51.53(b), 51.53(c)(3)(iv).

The conclusions and recommendations presented in the Task Force Report constitute "*new and significant information*" whose environmental implications must be considered before the NRC may make a decision that approves license renewal for Seabrook. 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 renewed operation of Seabrook "*impacts public health and safety*." *See* 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. NEPA demands that federal agencies "*insure the professional integrity, including the scientific integrity, of the discussions and analyses*" included in an EIS[3] and disclose *"all major points of view on the environmental impacts*" including any "*responsible opposing view*."[4] 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.[5] As a result, the NRC must revisit any conclusions in the Seabrook ER based on the assumption that compliance with NRC safety

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[3] 40 C.F.R. § 1502.24.

[4] 40 C.F.R. §§ 1502.9(a), (b)

[5] *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. Wa. 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. Wa. 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).

regulations is sufficient to ensure that environmental impacts of accidents are acceptable.

The Task Force Report Reveals that the Full Spectrum of All Design-Basis Accidents Has Not Been Assessed and the ER Must Be Supplemented to Consider Additional Design-Basis Accidents that Have the Potential for Releases to the Environment.

In Appendix B to 10 C.F.R. Part 51, the NRC reports a determination that the environmental impacts of both design basis accidents and severe accidents are "*small*." The findings of the Task Force Report call into question whether this represents a full, accurate description and examination of all the design basis accidents having the potential for releases to the environment. *See* Makhijani Declaration, pars. 7-10. 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.

The ER 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).[6] 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 Seabrook SAMAs, as relevantly described in Sections 5.1, 5.30 and 5.35 of the Draft Environmental Impact Statement [NUREG-1437, Supplement 46], 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 at sections;

5.1 Design Basis Accidents

17 In order to receive NRC approval to operate a nuclear power facility, an applicant for an initial

18 operating license (OL) must submit a safety analysis report (SAR) as part of its application. The

19 SAR presents the design criteria and design information for the proposed reactor and

20 comprehensive data on the proposed site. The SAR also discusses various hypothetical

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

21 accident situations and the safety features that prevent and mitigate accidents. The NRC staff

22 reviews the application to determine if the plant design meets the NRC's regulations and

23 requirements and includes, in part, the nuclear plant design and its anticipated response to an

24 accident.

25 DBAs are those accidents that both the licensee and the NRC staff evaluate to ensure that the

26 plant can withstand normal and abnormal transients and a broad spectrum of postulated

27 accidents, without undue hazard to the health and safety of the public. Many of these

28 postulated accidents are not expected to occur during the life of the plant but are evaluated to

29 establish the design basis for the preventative and mitigative safety systems of the facility.

30 Title 10 of the Code of Federal Regulations (CFR) Part 50 (10 CFR Part 50) and

31 10 CFR Part 100 describe the acceptance criteria for DBAs.

32 The environmental impacts of DBAs are evaluated during the initial licensing process, and the

33 ability of the plant to withstand these accidents is demonstrated to be acceptable before

34 issuance of the OL. The results of these evaluations are found in license documentation such

35 as the applicant's final safety analysis report (FSAR), the NRC staff's safety evaluation report

36 (SER), the final environmental statement (FES), and Section 5.1 of this supplemental

37 environmental impact statement (SEIS). A licensee is required to maintain the acceptable

1 design and performance criteria throughout the life of the plant, including any extended-life

2 operation. The consequences for these events are evaluated for the hypothetical maximum

3 exposed individual. Because of the requirements that continuous acceptability of the

4 consequences and aging management programs (AMPs) be in effect for license renewal, the

5 environmental impacts, as calculated for DBAs, should not differ significantly from initial

6 licensing assessments over the life of the plant, including the license renewal period.

7 Accordingly, the design of the plant, relative to DBAs during the extended period, is considered

8 to remain acceptable; therefore, the environmental impacts of those accidents were not

9 examined further in the GEIS.

10 The NRC has determined that the environmental impacts of DBAs are of SMALL significance for

11 all plants because the plants were designed to successfully withstand these accidents.

12 Therefore, for the purposes of license renewal, DBAs are designated as a Category 1 issue in

13 10 CFR Part 51, Subpart A, Appendix B, Table B-1. The early resolution of the DBAs makes

14 them a part of the current licensing basis (CLB) of the plant. The CLB of the plant is to be

15 maintained by the licensee under its current license; therefore, under the provisions of

16 10 CFR 54.30, it is not subject to review under license renewal.

17 No new and significant information related to DBAs was identified during the review of the

18 NextEra Energy Seabrook (NextEra) environmental report (ER), the site visit, the scoping

19 process, or the NRC staff's evaluation of other available information. Therefore, there are no

20 impacts related to DBAs beyond those discussed in the GEIS.

5.3 Severe Accident Mitigation Alternatives

13 Under 10 CFR Section 51.53(c)(3)(ii)(L), license renewal applicants must consider alternatives

14 to mitigate severe accidents if the staff has not previously evaluated SAMAs for the applicant's

15 plant in an environmental impact statement or related supplement or in an environmental

16 assessment. The purpose is to ensure that potentially cost-beneficial, aging-related plant

17 changes (i.e., hardware, procedures, and training) with the potential for improving severe

18 accident safety performance are identified and evaluated. SAMAs have not been previously

19 considered by NextEra, for Seabrook; therefore, the remainder of Section 5.3 addresses those

20 alternatives.

21 NextEra submitted an assessment of SAMAs for Seabrook as part of the ER (NextEra, 2010),

22 based on the most recently available Seabrook probabilistic risk assessment (PRA),

23 supplemented by a plant-specific offsite consequence analysis performed using the Methods for

24 Estimation of Leakages and Consequences of Releases (MELCOR) Accident Consequence

25 Code System 2 (MACCS2) computer code and insights from the Seabrook individual plant

26 examination (IPE) (NHY, 1991) and individual plant examination of external events (IPEEE)

27 (NAESC, 1992). In identifying and evaluating potential SAMAs, NextEra considered SAMAs

28 that addressed the major contributors to core damage frequency (CDF) and large early release

29 frequency (LERF) at Seabrook, as well as a generic list of severe accident mitigation alternative

30 (SAMA) candidates for pressurized water reactor (PWR) plants identified from other industry

31 studies. NextEra identified 191 potential SAMA candidates. This list was reduced to 74 SAMA

32 candidates by eliminating SAMAs for the following reasons:

33 • Seabrook having a different design

34 • the SAMA having already been implemented at Seabrook

35 • having already met the intent of the SAMA at Seabrook

36 • combining the SAMA with another SAMA candidate that is similar in nature

37 • having estimated implementation costs that would exceed the dollar value associated

38 with eliminating all severe accident risk at Seabrook

39 • being related to a non-risk significant system such that the SAMA would be of very low

40 benefit

41 NextEra assessed the costs and benefits associated with each of these 74 potential SAMAs and

42 concluded in the ER that several of the candidate SAMAs evaluated are potentially

43 cost-beneficial.

** * **

1 The NRC staff reviewed NextEra's process for identifying and screening potential SAMA

2 candidates, as well as the methods for quantifying the benefits associated with potential risk

3 reduction. This included reviewing insights from the plant-specific risk studies and reviewing

4 plant improvements considered in previous SAMA analyses. While explicit treatment of external

5 events in the SAMA identification process was limited, it is recognized that the prior

6 implementation of plant modifications for fire risks and the absence of external event

7 vulnerabilities constituted reasonable justification for examining primarily the internal events risk

8 results for this purpose. The NRC staff concludes that NextEra used a systematic and

9 comprehensive process for identifying potential plant improvements for Seabrook, and the set of

10 SAMAs evaluated in the ER, together with those evaluated in response to NRC staff inquiries, is

11 reasonably comprehensive and, therefore, acceptable.

Seabrook ER, pp.

5.3.5 Conclusions

2 NextEra compiled a list of 191 SAMAs based on a review of the most significant basic events

3 from the plant-specific PRA, insights from the plant-specific IPE and IPEEE, review of other

4 industry documentation, and insights from Seabrook personnel. Of these, 117 SAMAs were

5 eliminated qualitatively, leaving 74 candidate SAMAs for evaluation. An additional 13 SAMAs

6 were eliminated due to having estimated implementation costs that would exceed the dollar

7 value associated with eliminating all severe accident risk at Seabrook, leaving 61 candidate

8 SAMAs for evaluation. These underwent more detailed design and cost estimates to show that

9 two were potentially cost-beneficial in the baseline analysis (SAMAs 157 and 165). NextEra

10 also performed additional analyses to evaluate the impact of parameter choices and

11 uncertainties, resulting in the addition of no potentially cost-beneficial SAMAs. However, in

12 response to NRC staff RAIs, NextEra further identified two additional SAMAs (SAMAs 192 and

13 193) as being potentially cost beneficial. NextEra has indicated that all four potentially

14 cost-beneficial SAMAs will be entered into the Seabrook long-range plan development process

15 for further implementation consideration.

16 The NRC staff reviewed the NextEra analysis and concludes that the methods used and their

17 implementation were acceptable. The treatment of SAMA benefits and costs support the

18 general conclusion that the SAMA evaluations performed by NextEra are reasonable and

19 sufficient for the license renewal submittal. The level of treatment of SAMAs for external events

20 was deemed sufficient to support the conclusion that the likelihood of there being cost-beneficial

21 enhancements in this area was minimized by improvements that have been realized as a result

22 of the IPEEE process and inclusion of a multiplier to account for the additional risk of seismic

23 events. Therefore, the NRC staff concurs with NextEra's identification of potentially

24 cost-beneficial SAMAs. Given the potential for cost-beneficial risk reduction, the NRC staff

25 agrees that further evaluation of SAMAs 157, 165, 192, and 193 by NextEra through its long26

range planning process is appropriate. As stated by the applicant, the four potentially cost27

beneficial SAMAs are not aging-related. The staff reviewed SAMAs 157, 165, 192, and 193.

28 These mitigative alternatives do not involve aging management of passive, long-lived systems,

29 structures, or components during the period of extended operation. Therefore, they need not be

30 implemented as part of license renewal pursuant to 10 CFR Part 54.

Draft Environmental Impact Statement, NUREG-1437, Supplement 46.

Were SAMAs imposed as mandatory measures, the outcome of the ER and subsequently the EIS for Seabrook 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 Seabrook operation if it is licensed. Second, consideration of the costs of mandatory

mitigative measures could affect the overall cost-benefit analysis for the reactor.[7] As discussed in Dr. Makhijani's declaration, these costs may be significant, showing that other alternatives such as the no-action alternative and other alternative electricity production sources may be more attractive.[8] As the fundamental purposes of NEPA are: (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 decisionmaking process and the implementation of that decision*," *id*. at 349, the NRC cannot meet the fundamental purposes of NEPA if it does not include all of the costs associated with required mitigative measures. *See Sierra Club v.*

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

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

Sigler, 695 F.2d 957, 979 (5th Cir. 1983) ("*There can be no 'hard look' at the costs and benefits unless all costs are disclosed*.").

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

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

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

Yet, the Task Force found that significant differences may exist between plants in the way they protect against design-basis natural phenomena (including seismic and flooding hazards) and the safety margin provided. Task Force Report at 29. For instance, while tsunami hazards have been considered in the design basis for operating plants sited on the Pacific Ocean, the same cannot be said for those sited on the Atlantic Ocean and Gulf of Mexico. *Id.* 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. Task Force Report at 30.

The ER must be supplemented in light of this new and significant information. The Task Force's findings and recommendations are directly relevant to environmental concerns and have a bearing on the proposed action and its impacts as they point to the need for a reevaluation of the seismic and flooding hazards at the Seabrook site, a "*hard look*" at the environmental consequences such hazards could pose, and an examination of what, if any, design measures could be implemented (i.e. through NEPA's requisite "*alternatives*" analysis) to ensure that the public is adequately protected from these risks.

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

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

The Task Force Report makes several significant findings when it comes to increasing and improving mitigation measures at new reactors and recommends a number of specific steps licensees could take in this regard.

These recommendations include strengthening SBO mitigation capability at all operating and new reactors for design-basis and beyond-design-basis external events, (Section 4.2.1), requiring reliable 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), strengthening and integrating onsite emergency response capabilities such as EOPs, SAMGs, and EDMGs (Section 4.2.5) and addressing multi-unit accidents. *See also* Makhijani Declaration, pars. 18-24. Accordingly, the ER must be supplemented to consider the use of these additional mitigation measures to reduce the project's environmental impacts. *See* 40 C.F.R. §§ 1502.14 (f), 1502.16), 1508.25 (b)(3)).

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 station blackout ("SBO") mitigation) and Recommendation 7 (proposing measures for spent fuel pool makeup capability and instrumentation) should apply to all design certifications or to COL applicants if the recommended requirements are not addressed in the referenced certified design. Task Force Report at 71. The Task Force recommends that design certifications and COLs under active staff review address this recommendation "before licensing." *Id.* at 72.

The petitioners 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 making a decision regarding renewal of the Seabrook license, for example, the NRC must evaluate the relative costs and benefits of adopting Recommendations 4 and 7 in light of the NRC's increased understanding regarding accident risks and the strength of its regulatory program to prevent or mitigate them. And the NRC must apply the same analysis to all of the recommendations, not just Recommendations 4 and 7. NEPA requires the NRC to address the environmental implications of the Task Force's analysis *before* making a re-licensing decision for Seabrook, 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 Seabrook 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 Seabrook ER must be supplemented in order to meet NEPA's goal that the NRC's licensing decision for Seabrook will be "based on an accurate understanding of the environmental consequences of [its] actions." *Indian Point,* LBP-11-17, slip op. at 17.

3. 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 Seabrook may be licensed.

4. Demonstration that the Contention is Material to the Findings NRC Must Make to Re-License Seabrook.

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 Seabrook. Unless the NRC complies with the procedural requirements of NEPA that are discussed in the contention, it cannot make a valid finding that Seabrook should be re-licensed. Therefore the contention is material to the findings the NRC must make in order to license this facility.

The petitioners 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.

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

The 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.

6. 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 re-licensing of Seabrook, it appears that the parties have a dispute as to whether the ER for the facility must be revised to address those implications. As demonstrated above in Section B, the Task Force Report and Dr. Makhijani's Declaration provide sufficient information to show the genuineness and materiality of the dispute.

III. CONCLUSION

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

Respectfully submitted electronically by digital certificate this 11th day of August 2011.

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August 11, 2011

August 12, 2011

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Before the Atomic Safety and Licensing Board

In the Matter of	)	Docket No. 52-033
The Detroit Edison Company (Fermi Nuclear Power Plant, Unit 3)	)))	

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CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing "Contention in Support of Motion to Admit New Contention" have been served on the following persons via Electronic Information Exchange this 12th day of August, 2011:

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