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**UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION**

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Lawrence G. McDade, Chairman
Dr. Kaye D. Lathrop
Dr. Richard E. Wardwell

| | | |
|-------------------------------------------------|---|-------------------------|
| In the Matter of |) | Docket Nos. 50-247-LR |
| |) | and |
| |) | 50-286-LR |
| ENTERGY NUCLEAR OPERATIONS, INC. |) | |
| |) | |
| (Indian Point Nuclear Generating Units 2 and 3) |) | |
| |) | Date: December 22, 2011 |

**INITIAL STATEMENT OF POSITION FOR CLEARWATER'S CONTENTION EC-3A
REGARDING ENVIRONMENTAL JUSTICE**

Originally Submitted 12/22/11
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PRELIMINARY STATEMENT

In accordance with 10 C.F.R. § 2.1207(a)(1), the Atomic Safety and Licensing Board's ("ASLB") July 1, 2010 Scheduling Order,¹ the ASLB's June 7, 2011 Amended Scheduling Order,² the ASLB's November 17, 2011 Order,³ and the ASLB's October 18, 2011 Order clarifying the procedures for evidentiary filings,⁴ Hudson River Sloop Clearwater, Inc. ("Clearwater") hereby submits this Initial Statement of Position on Contention EC-3A – Environmental Justice ("EJ"). Clearwater contends that the analysis of EJ impact required before the Nuclear Regulatory Commission ("NRC") can decide upon the relicensing of the reactors at Indian Point is inadequate. The NRC Staff finally completed the Final Supplemental Environmental Impact ("FSEIS") statement⁵ for the Indian Point relicensing on December 3, 2010.

Although the FSEIS asserts that the Staff did not find any disproportionate impacts upon Environmental Justice ("EJ") populations, Clearwater's evidence shows that this conclusion is not based upon a "hard look" at the issue, as is required by the National Environmental Policy Act ("NEPA") and the Commission's own guidance, and is erroneous. The lack of analysis is shown by the NRC's apparent failure to review the evacuation plans prepared by Counties

¹ In the Matter of Entergy Nuclear Operations, Inc. (Indian Point Nuclear Generating Units 2 and 3), Docket Nos. 50-0247-LR and 50-286-LR, ASLBP No. 07-858-03-LR-BD01, Scheduling Order (July 1, 2010), at ¶ K.1.

² In the Matter of Entergy Nuclear Operations, Inc. (Indian Point Nuclear Generating Units 2 and 3), Docket Nos. 50-0247-LR and 50-286-LR, ASLBP No. 07-858-03-LR-BD01, Amended Scheduling Order (June 7, 2011), at 3.

³ In the Matter of Entergy Nuclear Operations, Inc. (Indian Point Nuclear Generating Units 2 and 3), Docket Nos. 50-0247-LR and 50-286-LR, ASLBP No. 07-858-03-LR-BD01, Order (Granting Unopposed Motion by the State of New York and Riverkeeper, Inc. to Amend the Scheduling Order) (November 17, 2011).

⁴ In the Matter of Entergy Nuclear Operations, Inc. (Indian Point Nuclear Generating Units 2 and 3), Docket Nos. 50-0247-LR and 50-286-LR, ASLBP No. 07-858-03-LR-BD01, Order (Clarification of Procedures for Evidentiary Filings) (October 18, 2011).

⁵ NRC, NUREG-1437: Supplement 38 Regarding Indian Point Nuclear Generating Unit Nos. 2 and 3 (Dec. 2010) ("FSEIS") available in ADAMS at accession numbers ML103350405 (Volume 1), ML103350438, ML103360209, ML103360212 (Volume 2), and ML103350442 (Volume 3). Ex. NYS00133.

adjacent to Indian Point, which the NRC failed to disclose or mention in the FSEIS. The lack of analysis is also illustrated by the failure of the FSEIS to identify “special facilities” such as prisons, hospitals, homeless shelters, and nursing homes. The country evacuation plans allow populations within such “special facilities” to receive a higher dose of radiation than the general public prior to evacuation, straightforwardly showing the potential for disproportionate impact. The failure to mention Sing Sing prison is perhaps most egregious because it is its own census block, its population is overwhelmingly from minority groups, and the ability of prisoners to respond to emergencies is completely different to that of the general population.

Had the NRC taken a hard look at EJ issues for prison populations Clearwater’s witnesses show that it would have found ample evidence of the potential for disproportionate impacts. The experience of hurricane Katrina shows that prison populations could be adversely affected by violence from guards or fellow prisoners, a consideration that is not applicable to the general population. In addition, among other things, the prison buildings are poorly maintained and unsuitable for sheltering-in-place, staff training is inadequate, prisoners are entirely dependent on care provided by the state and county authorities, and little or no planning has been done on how prisons could be evacuated.

With regard to impact on other EJ populations Clearwater’s witnesses also show that, among other things, transport-dependent populations are likely to experience disproportionate impacts because they have to wait at bus stops instead of being able to shelter in a building until transport is available and they may have to wait until after the school evacuation is complete before buses are available. In addition, the particular needs of the local Hispanic community have been largely overlooked, planning to evacuate non-ambulatory patients in hospitals and nursing homes is inadequate, and there is no evidence of any planning at all for evacuation of EJ

communities in New York City, despite the potential need to evacuate up to 50 miles from Indian Point, the huge numbers of people that could be affected, and the high degree of transport dependency among these communities.

Because Clearwater has established a prima facie case, the Staff and the applicant carry the burden of proof to show that Clearwater's contention is in fact incorrect. Furthermore, because part of NEPA's purpose is to inform the public through the final environmental impact statement, that showing may not constitute a post-hoc rationale for the initial omission.⁶ Moreover, despite two rulings from the Atomic Safety and Licensing Board (the "Board") recognizing the potential for disproportionate impacts upon EJ populations that could be affected by accidents, the Staff failed to provide any affirmative evidence that its analysis was adequate. *See Entergy Nuclear Operations, Inc. (Indian Point Nuclear Generating Units 2 and 3)*, ASLBP No. 07-858-03-LR-BD01, 60 (July 6, 2011); *Entergy Nuclear Operations, Inc. (Indian Point Nuclear Generating Units 2 and 3)*, LBP-08-13, 196-203 (2008). Instead, the Staff has twice relied upon the argument that because the safety review prior to relicensing does not cover evacuation planning, the scope of the site-specific NEPA review should not extend to emergency planning for EJ populations, even though EJ impacts are not examined generically and such planning is a potential mitigation measure for the EJ impacts of a severe accident. That argument, which incorrectly conflates the scope of the safety review with that of the NEPA review, has already been rejected twice by the Board. Therefore, the Board should not entertain further arguments on this well-settled issue.

⁶ Even though the licensing decision has yet to be taken, a post-FSEIS rationale would violate NEPA if the public as whole were given no opportunity to comment upon it. Therefore, if the Staff attempts to use a post-FSEIS rationale at this hearing, it would also need to make a clear undertaking to obey proper procedures mandated by NEPA and the AEA. Indeed without such an undertaking Clearwater will consider moving to strike such testimony as inadmissible.

Based upon the lack of environmental justice analysis carried out by the Staff and the established potential for disproportionate impacts to such populations, Clearwater believes that it will prevail. Indeed at this point it appears that there are no material facts in dispute, but Clearwater has opted to proceed to hearing to demonstrate that the omission of an adequate EJ analysis in the FSEIS is not merely a technical problem. This omission raises serious issues that, if unaddressed, could lead to unnecessary injury and loss of life. NEPA does not merely require the NRC to identify EJ impacts, it also requires the agency to examine potential solutions to reduce the impacts. To this end, Clearwater's witnesses have identified a number of feasible mitigation measures that NEPA requires to be examined in the FSEIS because they could reduce the identified disproportionate impacts should the NRC decide to grant a renewed license to allow Indian Point to operate for a further 20 years. Unless and until the NRC staff goes through the appropriate NEPA process to fully assess EJ impacts and mitigation, the relicensing of Indian Point may not legally proceed.

PROCEDURAL HISTORY

In 2008, despite NRC and Entergy claims to the contrary, the Board agreed with Clearwater that a site-specific analysis of the impact on potentially affected EJ populations is required when it admitted Clearwater contention EC-3. *In the Matter of Entergy Nuclear Operations*. (Indian Point Nuclear Generating Units 2 and 3), LBP-08-13, 196-203 (2008). The Board found that NEPA required a review of "environmental factors peculiar to minority or low-income populations that may cause them to suffer harm disproportionate to that suffered by the general population. *Id. at 200 accord Louisiana Energy Services* (Claiborne Enrichment Center), CLI-98-3, 47 N.R.C. 77, 100 (1998). The Board then admitted Clearwater's contention regarding potentially affected EJ populations:

Finally, Clearwater identifies minority and low-income populations located in numerous institutions located near Indian Point who would not be evacuated in the event of a severe accident. Specifically, Clearwater identifies Sing Sing, a maximum security correctional facility located less than ten miles from Indian Point that houses more than 1,750 predominately minority inmates. Clearwater also identifies twenty five other prisons and jails located within fifty miles of Indian Point. Clearwater then contends that Entergy's ER is deficient because it does not address the impact of a severe accident at Indian Point on these EJ populations.

Both Entergy and the NRC Staff attempt to dismiss this contention as an "emergency planning issue" which is outside the scope of a license renewal proceeding. (The Commission noted in Millstone that emergency planning is, by its very nature, not germane to age-related degradation.) However, Clearwater EC-3 is a Part 51 Environmental Contention brought under NEPA. It is not a Part 54 Safety Contention based on emergency planning. Clearwater has not contended that Entergy's emergency plan is deficient. Rather the Petitioner has contended that Entergy's ER is deficient because it does not supply sufficient information from which the Commission may properly consider, and publicly disclose, environmental factors that may cause harm to minority and low-income populations that would be "disproportionate to that suffered by the general population." We agree.

LBP-08-13 at 202.

In 2011, the Board again admitted a slightly modified version of Clearwater's contention regarding EJ populations that might be impacted by Entergy's proposed actions. The amended contention stated, "Entergy's environmental report and the Final Supplemental Environmental Impact Statement contain seriously flawed environmental justice analyses that do not adequately assess the impacts of relicensing Indian Point on the minority, low-income and disabled populations in the area surrounding Indian Point." *In the Matter of Entergy Nuclear Operations*. (Indian Point Nuclear Generating Units 2 and 3), ASLBP No. 07-858-03-LR-BD01, 60 (2011). As the Board noted, "These populations include not only the Sing Sing prisoners mentioned by the Board in LBP-08-13, but also other EJ populations within 50 miles of Indian Point in pre-

schools, nursing homes, shelters, hospitals, and minority and low-income residents in the region who lack access to private transportation.” *Id.* at 56.

Again, Entergy and the NRC staff argued that the EJ contention raised an emergency planning issue outside of the scope of the proceeding. *Id.* at 54. However, in permitting the amendment to Clearwater’s contentions, the Board sided with Clearwater, which argued that the contention did not challenge Entergy’s emergency planning, but attacked the NRC “Staff’s failure to analyze mitigation for the disparate impacts of the proposed action” on EJ populations. *Id.* at 56.

Because the Board has twice confirmed that EJ concerns are a legally required part of any NEPA analysis of licensing activity, NRC Staff and Entergy may not now argue that the site-specific EJ issues should not be addressed. The issue is settled and should not be re-litigated at this stage.⁷

APPLICABLE LEGAL AND REGULATORY REQUIREMENTS

I. Burden of Proof for EJ Impacts

Entergy and the NRC Staff carry the burden of proof to demonstrate that the Staff’s analysis took the required hard look at environmental justice issues and reached scientifically valid conclusions. *See* 10 C.F.R. § 2.325 (2011) (“Unless the presiding officer otherwise orders, the applicant or the proponent of an order has the burden of proof.”). The Nuclear Regulatory Commission has described the burden of proof in a license renewal proceeding as follows:

⁷ The Board has previously recognized the value of avoiding repetition and duplication of effort. As the Board explained in *Private Fuel Storage*, “The principle of collateral estoppel, like that of res judicata, can also be applied in administrative adjudicatory proceedings.” *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), LBP-02-20, 56 N.R.C. 169, 181-82 (2002) (internal citations omitted). *See also Alabama Power Company* (Joseph M. Farley Nuclear Plant, Units 1 and 2), 7 A.E.C. 98, 101, 1974 WL 18821 (A.E.C.), 3 (“the doctrines of res judicata and collateral estoppel do have application to administrative proceedings and have a valid and worthy purpose compelling that they be seriously considered wherever parties and stated issues have a prior history indicating possible duplication or repetition of effort”).

“[t]he ultimate burden of proof on the question of whether the permit or the license should be issued is ... upon the applicant. But where ... one of the other parties contends that, for a specific reason ... the permit or license should be denied, that party has the *burden of going forward* with evidence to buttress that contention. Once he has introduced sufficient evidence to establish a *prima facie* case, the burden then shifts to the applicant who, as part of his overall burden of proof, must provide sufficient rebuttal to satisfy the Board that it should reject the contention as a basis for denial of the permit or license.”

Amergen Energy Co. (Oyster Creek Nuclear Generating Station), CLI-09-7, 69 N.R.C. 235, 269 (2009). Thus, according to the Commission, if a party challenges a licensing renewal application, that challenging party must establish a *prima facie* case that renewal requirements have not been met. At that point, the burden of proof shifts back to the applicant to rebut that specific contention.

Environmental justice issues are “adverse impacts” that fall heavily on minority and impoverished citizens. *Louisiana Energy Services, L.P. (Claiborne Enrichment Center)*, CLI-98-3, 47 N.R.C. 77, 100 (1998). To establish a *prima facie* case in an environmental justice claim, the Board has found that petitioners must provide: (1) sufficient support of the “alleged existence of adverse impacts or harms on the physical or human environment”; and (2) evidence that these “purported adverse impacts could disproportionately affect poor or minority communities in the vicinity of the facility at issue.” *Southern Operating Company* (Early Site Permit for Vogtle ESP Site), ASLB-52-011-ESP, 65 N.R.C. 237, 262, (2007). These potentially affected poor and minority communities are known as environmental justice communities. See *Louisiana Energy Services, L.P.*, 47 N.R.C. at 100. At the contention stage, intervenors must allege specific facts which support the existence of adverse impacts or harms on the environment, *Public Service Company of New Hampshire* (Seabrook Station, Units 2 and 2), CLI-89-03, 29 N.R.C. 234, 241 (1989), which are particular to the case at hand. *Northern States Power Company* (Prairie Island

Nuclear Generating Plant, Units 1 and 2), ASLB-50-282-LR, 50-306-LR, 68 N.R.C. 905, 909 (2008). Therefore, most intervenors with environmental justice claims need not go far beyond the facts alleged at the contention pleading stage to establish a prima facie case at hearing.

The analysis of the general case law interpreting NEPA given below shows that the Commission and Board have misinterpreted NEPA to some extent in their decisions. In fact, to establish a prima facie case for a NEPA contention, it is only necessary to show that the NRC failed to take a “hard look” at the issues raised by the contention. Finally, a failure to take a hard look cannot be excused by *post hoc* rationalizations offered during litigation. *Sierra Club v. Bosworth*, 510 F.3d 1016, 1026 (9th Cir. 2007) (“Post-hoc examination of data to support a pre-determined conclusion is not permissible because [t]his would frustrate the fundamental purpose of NEPA, which is to ensure that federal agencies take a ‘hard look’ at the environmental consequences of their actions, early enough so that it can serve as an important contribution to the decision making process.”) (internal citations and quotations omitted). *See also would Wilderness Watch & Pub. Employees for Env'tl. Responsibility v. Mainella*, 375 F.3d 1085, 1094 (11th Cir. 2004). Out of an overabundance of caution, Clearwater has gone well beyond showing a lack of hard look in its evidence in this case, but that is not a waiver of its legal position that a minimal showing at the hearing stage is all that is required to prevail on an admitted NEPA contention, where the NRC has failed to take the hard look mandated by NEPA.

II. Legal Requirements of NEPA

A. NEPA's Goals

NEPA establishes a “national policy [to] encourage productive and enjoyable harmony between man and his environment.” *Dept. of Transp. v. Pub Citizen*, 541 U.S. 752, 756 (2004) (*quoting* 42 U.S.C. § 4321 (2011)) (internal citations and quotations omitted). It was created to reduce or eliminate environmental damage and to promote “the understanding of the ecological

systems and natural resources important to the United States.” *Id* (internal citations and quotations omitted). NEPA requires federal agencies to examine the environmental consequences of their actions before taking those actions, in order to ensure “that important effects will not be overlooked or underestimated only to be discovered after resources have been committed or the die otherwise cast.” *Robertson v. Methow Valley Citizens Council (Robertson)*, 490 U.S. 332, 349 (1989). The purposes of the statute are (1) to ensure that the agency has ensure that the agency will have and consider detailed information concerning “every significant aspect of the environmental impact of a proposed action,” and (2) to ensure that the public can both contribute to the body of information and can access the information that is made public. *Baltimore Gas & Elec. Co. v. Natural Res. Def. Counsel, Inc.*, 462 U.S. 87, 97 (1983). *See also Dep’t of Transp.*, 541 U.S. at 754; *San Luis Obispo Mothers For Peace v. NRC*, 449 F.3d 1016, 1020 (9th Cir. 2006).

The Commission, in addressing environmental justice issues under NEPA, stated, “[t]he NRC’s goal is to identify and adequately weigh, or mitigate, effects on low-income and minority communities that become apparent only by considering factors peculiar to those communities.” *Louisiana Energy Services*, CLI-98-3, 47 N.R.C. at 100. By doing so, the NRC is better able to “help public officials make decisions that are based on understanding of environmental consequences, and take actions that protect, restore, and enhance the environment.” *Dep’t of Transp. v. Pub. Citizen*, 541 U.S. 752, 769, 124 S. Ct. 2204, 2216, 159 L. Ed. 2d 60 (2004).

B. Federal agencies must document that they have taken a “hard look” at the environmental impacts of proposed action and alternatives to the proposed action, including feasible mitigation

The National Environmental Policy Act, 42 U.S.C § 4321, et seq. (“NEPA”) mandates that federal agencies involved in activities that may have a significant impact on the environment complete a detailed statement of the environmental impacts and project alternatives.

Specifically, for every major action significantly affecting the quality of the human environment, the NRC must provide a detailed statement by the responsible official on –

- (i) the environmental impact of the proposed action,
- (ii) any adverse environmental effects which cannot be avoided should the proposal be implemented,
- (iii) alternatives to the proposed action,
- (iv) the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and
- (v) any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.

42 U.S.C. § 4332(c). This “action-forcing” requirement for preparation of an Environmental Impact Statement (“EIS”), which assesses the environmental impacts of the proposed action and alternatives, is the primary method by which NEPA ensures that its mandate is met. *Robertson*, 490 U.S. at 350-51. The EIS must be searching and rigorous, providing a “hard look” at the environmental consequences of the agency’s proposed action. *Id.*; *Marsh v. Oregon Natural Resources Council*, 490 U.S. 360, 374 (1989); *see also Midcoast Interstate Transmission, Inc. v. F.E.R.C.*, 198 F.3d 960, 968 (D.C. Cir. 2000); *Stewart Park & Reserve Coal., Inc. (SPARC) v. Slater*, 352 F.3d 545, 557 (2d Cir. 2003).

i. **The EIS must contain a high quality analysis of reasonably foreseeable catastrophic impacts.**

The EIS must consider “reasonably foreseeable” impacts which have “catastrophic consequences, even if their probability of occurrence is low.” 40 C.F.R. § 1502.22(b)(1) (2011). Probability is the “key” to determine whether an impact is “reasonably foreseeable” or whether it is “remote and speculative” and therefore need not be considered in an EIS. *Vermont Yankee*

Nuclear Power Corp. (Vermont Yankee Nuclear Power Station), CLI-90-7, 32 N.R.C 129, 131 (1990). See also *Limerick Ecology Action, Inc. v. NRC*, 869 F.2d 719, 745 (1989), citing *Vermont Yankee Nuclear Power Corp. v. Natural Resources Defense Council, Inc.*, 435 U.S. 519, 551 (1978). On the issue of terrorism, the Ninth Circuit found it had to be assessed, but the Third Circuit disagreed. *San Luis Obispo Mothers For Peace*, 449 F.3d 1016, *contra New Jersey Environmental Protection v. NRC*, 561 F. 3d 132 (3d Cir. 2009).

The analyses of impact must contain “high quality” information and “accurate scientific analysis.” 40 C.F.R. § 1500.1(b) (2011); *Sierra Club v. Marita*, 46 F.3d 606, 621 (7th Cir. 1995); *House v. U.S. Forest Serv., U.S. Dept. of Agric.*, 974 F. Supp. 1022, 1035 (E.D. Ky. 1997). Therefore, general statements about “possible” effects and “some risk” are inadequate unless there is a good reason why better information cannot be obtained. *Neighbors of Cuddy Mountain v. U.S. Forest Service*, 137 F.3d 1372, 1380 (9th Cir. 1998); *Texas Comm. on Natural Res. v. Van Winkle*, 197 F. Supp. 2d 586, 619 (N.D. Tex. 2002). Similarly, the analysis cannot be based on “incorrect assumptions or data”. *Sierra Club v. Fed. Highway Admin.*, 10-20502, 2011 WL 3281328 (5th Cir. 2011). See also 40 C.F.R. § 1500.1(b) (2011). Moreover, the NRC Staff must “independently evaluate and be responsible for the reliability of all information used in the draft environmental impact statement.” 10 C.F.R. § 51.70(b) (2011); see also 10 C.F.R. § 51.92(a) (2011).

ii. **The EIS must analyze reasonable alternatives to the proposed action and explain the agency’s reasons for accepting or rejecting them**

After taking a hard look at the impact of a proposed action, federal agencies must analyze all feasible alternatives and explain the bases for their acceptances or rejection. 40 C.F.R. §§ 1503.4 (2011), 1505.1(e) (2011). NRC regulations implementing NEPA require the NRC to

consider alternatives to its licensing actions that may have detrimental effects on the environment. 10 C.F.R. § 51.71(d) (2011).

These regulations are guided largely by NEPA § 102(2)(C)(iii) and NEPA § 102(2)(E). NEPA § 102(2)(C)(iii) requires federal agencies, “to the fullest extent possible,” to “include in every recommendation or report on proposals for... major Federal actions significantly affecting the quality of the human environment” a detailed statement on “alternatives to the proposed action.” *Pa’ina Hawaii* (Materials License Application) CLI-10-18, 2010 WL 2753784 (N.R.C.), at *8, *interpreting* 42 U.S.C. § 4332(2)(C). The agency must use its EIS to “[r]igorously explore and objectively evaluate *all* reasonable alternatives.” *Pa’ina Hawaii*, 2010 WL 2753784 at *9 (internal citations omitted) (emphasis added). NEPA § 102(2)(E) creates additional requirements, mandating that federal agencies “study, develop, and describe appropriate alternatives to recommend courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources.” *Id.*

An analysis of reasonable alternatives includes an analysis of alternative sites for the proposed action. The Commission explored these requirements in *Pa’ina Hawaii*. In that case, Concerned Citizens argued that the Staff, in its final EA, failed to consider sites that would “avoid or minimize the environmental risks from weather, earthquake, and terrorist acts.” The Commission held, “[R]easonable alternatives must be considered as appropriate, and an explanation provided for their rejection. Patently, the identified purpose of the proposed irradiator reasonably may be accomplished at locations other than the proposed site. Therefore, the Board’s decision to require the consideration of alternative sites is reasonable [. . .].” *Id.* at 12. While the Board emphasized that Pa’ina didn’t yet have a lease for the proposed site, and that

Pa'ina had itself considered alternative sites, neither of these facts was dispositive, and the analysis rested on the fact that viable alternative locations existed. *Id.*

In accordance with the principles of burden of proof discussed earlier, the agency bears the burden of identifying such sites. The Commission rejected Pa'ina's argument that Concerned Citizens did not "carry its burden of stating and supporting any valid contention" because they did not identify alternative, viable sites. *Id.* at 13 (emphasis in original). The Commission held, "this argument ignores the fact that [. . .] the primary obligation of satisfying the requirements of NEPA rests on the agency." *Id.* at 13, citing *NEPA § 102(2)(C)*; *Dep't of Transp. v. Pub. Citizen*, 541 U.S. 752, 765 (2004); *Ilio'ulaokalani Coalition v. Rumsfeld*, 464 F.3d 1083, 1092 (9th Cir. 2006); *Louisiana Energy Services*, CLI-98-3, 47 N.R.C. 77 (1998).

Considering alternatives in one domain does not exempt the agency from considering substantially different alternatives in another. In *Pa'ina Hawaii*, the Commission rejected the Staff's contention that it need not consider alternative sites since it had already considered alternative technology. The Commission held that it was "not clear error for the Board to require the Staff to consider alternative sites in this particular proceeding" because "in this case alternative sites are 'significantly distinguishable' from the alternative technologies the Staff considered" and might have consequences that are not "substantially similar" to those alternatives considered. *Pa'ina Hawaii*, 2010 WL 2753784 at *9. The Commission also highlighted the importance of a detailed explanation, stressing that the requirement for full consideration is even greater under an EIS than under an EA. *Id.* at 9. Thus, under NEPA, the EIS must contain an analysis of all reasonable alternatives and an explanation for the acceptance or rejection of each alternative.

- iii. **The EIS must analyze feasible mitigation measures to reduce impacts from severe accidents and explain the agency's reasons for accepting or rejecting them.**

The analysis of alternatives includes an analysis of measures that can mitigate the effects of severe accidents. The NRC defines "severe accidents" as "reactor accidents more severe than design basis accidents and those in which substantial damage is done to the reactor core whether or not there are serious offsite consequences." *Progress Energy Florida, Inc.* (Levy County Nuclear Power Plant, Units 1 and 2), ASLB-52-029-COL, 52-030-COL, 69 N.R.C. 736, 106, *aff'd in part, rev'd in part on other grounds*, in *Progress Energy Florida, Inc.* (Combined License Application, Levy County Nuclear Power Plant, Units 1 and 2), CLI-10-02 (January 7, 2010), *interpreting* Policy Statement on Severe Reactor Accidents Regarding Future Designs and Existing Plants, 50 Fed. Reg. 32,138, (Aug. 8, 1985). Severe accident mitigation design alternatives ("SAMDA") are "possible plant design modifications that are intended not to prevent an accident, but to lessen the severity of the impact of an accident should one occur." *See Limerick*, 869 F.2d at 731. Severe Accident Mitigation Alternatives ("SAMAs") are "plant modifications or procedure changes that do not necessarily prevent severe accidents but reduce the offsite consequences or severity of the impact should a severe accident occur." Nuclear Energy Institute (Receipt of Petition for Rulemaking), 1999 WL 739640, (N.R.C.), *4. This analysis is inherently a part of the impact analysis because mitigation alternatives can lower the impact of the proposed action.

Applicants must "examine and evaluate the consequences of severe accidents in both the AEA (safety) and NEPA (environmental) context. *Progress Energy Florida, Inc.* (Levy County Nuclear Power Plant, Units 1 and 2), ASLB-52-029-COL, 52-030-COL, 69 N.R.C. 736, 106

(2009). In *Progress Energy*, the ASLB specified that NEPA and NRC regulations require consideration of measures to mitigate environmental impacts:

In the environmental context, NEPA § 102(2)(C) “implicitly requires agencies to consider measures to mitigate [environmental] impacts.” Nuclear Energy Institute; Denial of Petition for Rulemaking, 66 Fed. Reg. 10,834, 10,836 (Feb. 20, 2001). Council on Environmental Quality regulations provide elaboration, defining the term “mitigation,” and requiring that the EIS include appropriate mitigation measures. See 40 C.F.R. §§ 1508.20, 1502.14(f), and 1502.16(h). NRC regulations follow suit, requiring that the ER include an analysis of the “alternatives available for reducing or avoiding adverse environmental effects.” 10 C.F.R. § 51.45(c). In addition, the ER associated with each application for a standard design certification must address the costs and benefits of SAMDAs. 10 C.F.R. § 51.55(a).

Id. at 48.

The treatment of SAMDAs illustrates how consideration of mitigation measures should be integrated into the NEPA process. The court in *Limerick* found that Staff must address SAMDAs in a report prior to or at the licensing hearing unless the NRC (1) makes a rulemaking that environmental effects need not be considered or (2) specifically rejects consideration of SAMDAs in a policy statement establishing that consideration of SAMDAs could not affect the final decision. *Limerick*, 869 F.2d at 731. When the agency addresses SAMDAs in its Final Environmental Statement, the report must contain “sufficient discussion of the relevant issues and opposing viewpoints to enable the decision maker to take a hard look at the environmental factors and to make a reasoned decision. The impact statement must be sufficient to enable those who did not have a part in its compilation to understand and consider meaningfully the factors involved.” *Id.* at 737 (internal citations and quotations omitted).

In *Limerick*, the NRC did not consider SAMDAs in the Final Environmental Impact Statement. Rather, the Commission addressed SAMDAs through a policy statement. The court held that this did not satisfy NEPA because (1) the environmental statement itself was defective,

and (2) the policy statement was an inadequate substitute. First, the court held that the environmental statement was defective because the NRC neither considered nor specifically rejected SAMDAs. *Id.* Furthermore, the policy statement did not overcome the failures of the environmental statement because it did not carefully consider environmental consequences and excluded consideration of design alternatives without making any conclusions about their effectiveness. *Id.* Finally, it was not sufficiently specific, since issues were not generic in that the impact of severe accident mitigation design alternatives on the environment would differ with each particular plant's design, construction and location. *Id.* The court concluded that both the FEIS and the Final Policy Statement were inadequate, since neither provided support for the exclusion of SAMDAs.

III. NRC Requirements Regarding Environmental Justice

The NRC has a legal obligation to make site-specific environmental justice assessments of the potential impacts of decommissioning nuclear power plants. NUREG-0586 Supplement 1 (Nov. 2002) at 4-65. Executive Order 12898 directs Federal executive agencies to consider environmental justice under the National Environmental Policy Act of 1969 (NEPA). Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations, 59 FR 7629 (February 11, 1994). On March 31, 1994, then-Chairman Selin wrote the President stating that the NRC would carry out the measures in the Order. *See* Letter from NRC Chairman Ivan Selin to the President, dated March 31, 1994, available at ADAMS Accession No. ML033210526.

While the Order is not formally binding, the NRC has interpreted the order to clarify obligations under NEPA to examine environmental justice contentions. Policy Statement on the Treatment of Environmental Justice Matters in NRC Regulatory and Licensing Actions, 69 FR 52040-01 (August 24, 2004). In this Policy Statement, the Commission reaffirmed its

“obligation to consider and assess disproportionately high and adverse impacts on low-income and minority populations” pursuant to NEPA. *Id.* Though the Policy Statement itself is not formally binding on either the agency or the public, *see Dominion Nuclear North Anna*, CLI-07-27, 66 N.R.C. 215 (2007), the NRC is obligated to meet its NEPA obligations, which it interprets to include the above-mentioned environmental justice issues. Therefore, the NRC now has a legal obligation to make site-specific environmental justice assessments of the potential impacts of its major actions. NUREG-0586 Supplement 1 (Nov. 2002) at 4-65.

The NRC uses population statistics within the geographic area for assessment to identify potentially affected low-income and minority communities. Policy Statement on the Treatment of Environmental Justice Matters in NRC Regulatory and Licensing Actions, 69 Fed. Reg. 52040, 52047-48 (August 24, 2004). For licensing and regulatory actions involving power reactors, the geographic area for assessment typically encompasses a 50-mile radius from the site. *Id.* This is a flexible measurement, guided in each case by the potential impact of the proposed action. *Id.* Once the area is defined, the NRC staff must identify potentially affected low-income and minority communities within it.

[A] minority or low-income community is identified by comparing the percentage of the minority or low-income population in the impacted area to the percentage of the minority or low-income population in the County (or Parish) and the State. If the percentage in the impacted area significantly [by at least 20 percentage points] exceeds that of the State or the County percentage for either the minority or low-income population then EJ will be considered in greater detail. [. . .] Alternatively, if either the minority or low-income population percentage in the impacted area exceeds 50 percent, EJ matters are considered in greater detail.

Policy Statement on the Treatment of Environmental Justice Matters in NRC Regulatory and Licensing Actions, 69 Fed. Reg. 52,040, 52,047-48 (August 24, 2004). This approach should be flexible and supplemented by the EIS scoping process to ensure minority or low income groups are properly identified. *Id.* Of course, the NRC has an obligation to conduct a high-quality

analysis of reasonably foreseeable catastrophic impacts regardless of whether an environmental justice community is present in the relevant geographic area. The environmental justice analysis adds an *additional* layer of protection for vulnerable groups. Consequently, if potentially affected minority or low-income communities are present, the Commission requires the NRC Staff to “(1) To identify and assess environmental effects on low-income and minority communities by assessing impacts peculiar to those communities; and (2) to identify significant impacts, if any, that will fall disproportionately on minority and low-income communities. *Id.* at 52,048.

The NRC’s recognition that environmental justice is a site-specific issue is reflected in regulations stating that the Generic Environmental Impact Statement does not assess environmental justice impacts at all. 10 C.F.R. Part 51, Sub-part A, Appendix B (2011) (“The need for and the content of an analysis of environmental justice will be addressed in plant-specific reviews.”). This policy of providing a site-specific environmental justice analysis is also discussed in the FSEIS. *E.g.* FSEIS at A-117. Furthermore, the NRC’s regulations require the FSEIS to contain an analysis of significant problems and objections raised in comments to the DSEIS. 10 C.F.R. § 51.91(b) (2011). The FSEIS must also discuss and respond to any opposing view not adequately discussed in the DSEIS. *Id.* Licensing cannot legally proceed unless the NRC satisfies the requirements of NEPA, irrespective of whether the licensee and the Staff satisfy the NRC’s own regulations regarding environmental impact assessment. *See San Luis Obispo Mothers For Peace*, 449 F.3d 1016.

THE FACTS SHOW THAT CLEARWATER IS LIKELY TO PREVAIL

I. Organization of Testimony

Clearwater's testimony concerns the types of EJ communities present in the 50 miles around Indian Point, the potential for disproportionate adverse impacts on those communities, and some suggestions regarding mitigation measures. The individual testimony is organized as follows:

- Dr. Michael Edelstein (in Exs. CLE000003 & CLE000012) and Anthony Papa (in Ex. CLE000004), discuss issues related to prison populations, largely by an in-depth analysis of the potential for disproportionate impacts on inmates in Sing Sing prison, which is less than 10 miles from Indian Point;
- Dr. Erik Larsen (in Ex. CLE000005) discusses the potential impact of an accident on non-ambulatory hospital patients;
- John Simms (in Ex. CLE000006), a resident of a nursing home close to Indian Point, discusses the potential impacts on people in nursing homes;
- Aaron Mair (in Ex. CLE000007), a former resident of an EJ community close to Indian Point and experienced environmental justice advocate, discusses the potential impacts on transport dependent populations;
- Dolores Guardado (in Ex. CLE000008), a hispanic resident who lives close to Indian Point, discusses the potential impacts on Hispanic residents;
- Stephen Filler (in Ex. CLE000009) discusses the disparate treatment of EJ populations in various evacuation plans; and
- Manna Jo Greene (in Ex. CLE000010) discusses research that Clearwater has done to identify EJ populations within 50 miles of Indian Point and determine disparate impacts on EJ populations and what mitigation measures have already been taken.

II. The FSEIS Analysis of EJ Issues Fails to Accurately Identify Potentially Affected EJ Populations

Instead of analyzing the potential for disparate impact caused by the proposed action on potentially affected EJ populations, the FSEIS largely relies on a generic analysis that does not address the issue in any depth. FSEIS at A-49-56; A-110-13; A-115-116; A-117-120. Although the analysis shows that there are a many majority minority census blocks, the FSEIS makes no attempt to determine whether there are any impacts that could be peculiar to those census blocks. *Id.* at 4-53. This failure is readily apparent because one of those census blocks is actually Sing

Sing prison, which could experience impacts that are quite different from the general population and is therefore designated as a “special facility” in the Westchester County Emergency Plan.

Ex. CLE000003 at A8 & A11; Ex. CLE000012 at 4-5. Sing Sing accommodates over 1700 prisoners of which 87% are from racial minorities. Ex. CLE000012 at 12. Despite this, the EJ analysis in the FSEIS makes no mention of the existence of the prison, let alone the potential for disproportionate impacts on the prison population. FSEIS at 4-53. Similarly, the FSEIS provides a map of low-income areas, *id.* at A-55, but makes no attempt to identify characteristics peculiar to these communities, such as a lower level of private vehicle ownership. *Id.* at A-5-53; CLE000007 at A12.

New York State Department of Environmental Conservation has provided much more user-friendly and legible mapping of the census blocks that are potential EJ areas within 10 and 50 miles of Indian Point. Exs. CLE000030 & CLE000031. Within 10 miles, there is good agreement between the areas flagged in the FSEIS as majority minority areas and the areas flagged by New York State, but between 10 and 50 miles there is substantial disagreement. *Compare* Exs. CLE000030 & CLE000031 with FSIS at 4-52. For example, there is a large EJ area above Poughkeepsie to the west of the Hudson River which is not identified in the FSEIS, and another large area east of Rhinebeck on the 50 mile boundary is also omitted from the FSEIS. *Id.* Many other discrepancies exist. Thus, it appears that the NRC Staff has failed to properly identify the EJ populations on the census block level, as required by Commission guidance. It has also failed to take the next step in the analysis and determine whether any of the individuals within the identified census blocks could be disproportionately affected by renewing Indian Point’s license.

Furthermore, despite the Commission’s recognition that the census block approach has to be flexible to ensure all EJ populations are captured, the FSEIS makes no attempt to identify

smaller concentrations of EJ populations. FSEIS at A-51-55. For example, the FSEIS fails to mention that there are over 1,100 nursing homes, correctional facilities, homeless shelters, hospitals, and housing for the infirm or those on low-incomes in the 10 and 50 miles radii.

CLE000032 at 2. The information that Clearwater has gathered shows that most of these facilities contain substantial EJ populations. For example, many people in nursing homes are reliant on social security and therefore have a low income. CLE000010 at A55. A significant portion of the nursing home population is also mobility impaired for either mental or physical reasons.

CLE000006 at A6. The population of Rockland County Jail is 60 to 70% minority. CLE000003 at A16. Homeless shelters and Section 8 housing house low-income individuals. CLE000036

& CLE000037. Minority and low-income residents are highly dependent on public-transport. CLE000007 at A12; CLE000008 at A16. Hospitals contain a number of patients who are mobility impaired.

CLE000005 at A7. Thus, the FSEIS has failed to identify many EJ populations that are present in the 50 mile radius of Indian Point. The NRC Staff made these identification errors despite Clearwater successfully proposing a contention on this issue and comments on the DSEIS pointing out this flaw. FSEIS at A-112; A-118; A-119.

To justify its failure to properly identify potentially affected EJ populations and assess impacts that may be peculiar to these communities, the NRC Staff has repeatedly made the erroneous legal argument that emergency planning issues for EJ populations are outside the scope of this proceeding and NEPA. *E.g.* FSEIS at A-113. As discussed in the procedural history above, this argument is incorrect and directly contradicts the findings of the Board in this case on two occasions.

III. Review of Emergency Plans Shows That The FSEIS Analysis of EJ Issues Failed to Assess Impacts That Disproportionately Affect EJ Populations

According to Commission guidance, once the NRC Staff has properly identified the EJ populations, the next steps should be to assess “impacts peculiar to those communities” and “identify significant impacts, if any, that will fall disproportionately on minority and low-income communities.” 69 Fed. Reg. at 52,048. The FSEIS has manifestly failed to do this. Such peculiar or disproportionate impacts are readily apparent on the face of the Emergency Plans prepared by the counties, but it appears that NRC Staff did not review these plans during the preparation of the FSEIS.⁸ The testimony of Dr. Edelstein and Mr. Filler shows that on its face the Emergency Plans for Westchester County contemplates the use of “selective shelter-in-place,” where so-called “special populations (prisons, nursing homes etc.)” are left behind while the general population evacuates. *E.g.* Ex. CLE000003 at A9. For example, the Westchester Plan even provides a definition of “shelter in place” as “an action that . . . would be taken by persons who should be evacuated but cannot because of . . . transportation resource shortfalls (or) special populations (prisons, nursing homes etc.)” Exs. CLE000009 at A3; CLE000014 at IPEC00200120. The document also states that while the general population is being evacuated in a general emergency, shelter-in-place is an option for the institutionalized mobility impaired, hospitals, and mental health facilities. *Id.* at IPEC00200291. The Westchester County Emergency Plan states that shelter-in-place may be appropriate for “those who are not readily mobile” at up to 5 rem in normal circumstances and 10 rem under “unusually hazardous circumstances.” *Id.* at IPEC00200116. In contrast the dose limit for the general population is 5 rem even under “unusually hazardous circumstances.” *Id.* Mr. Filler concludes that: “the Westchester County Emergency Plan expressly recognizes that there is a likelihood that environmental justice

⁸ Clearwater believes that the NRC Staff did not include any emergency plans in its disclosures, indicating that NRC Staff failed to review emergency plans during the preparation of the FSEIS.

populations, including prison populations, and physical and mentally disabled, immobile and infirm populations, will be treated disparately by being sheltered in place when they ‘should be evacuated’ and are likely to be exposed to rem limits far in excess of what the evacuated population would be exposed to. Further, there is no plan for how these populations will receive water or food, and it is unclear how the shelters will be safely ventilated.” Ex. CLE000009 at A3.

Similarly, the Rockland County Emergency Plan treats many EJ populations differently to the general population. In the Rockland plan, two hospitals are designated as special facilities that use “selective shelter-in-place” meaning that the patients would shelter-in-place while the general population evacuates. Ex. CLE000003 at A16. It defines “selective Shelter-in-place” as an option for those who “could not be safely evacuated,” including “those who have been designated medically unable to evacuate as well as those individuals who require constant, sophisticated medical attention or are incarcerated.” Ex. CLE000018 at IPEC00200992. The plan also identifies 4,629 individuals in the ten mile EPZ who are “transit dependent,” i.e. who “do not have their own means of evacuation.” *Id.* at IPEC00201078. The same buses used for schools are also used for the “transit dependent” population, therefore they must wait until after the school evacuation is complete. *Id.* at IPEC00201078. Although those people are supposed to shelter-in-place prior to arrival of the bus, it is unclear how this is possible. *Id.* In addition, the plan identifies 1,058 mobility-impaired individuals in special facilities, and 60 non-institutionalized mobility impaired individuals in the 10 mile EPZ. *Id.* at IPEC00201078-79. Evacuation of this group of people also would appear to require many of the same vehicles used to evacuate the students and other “transit dependent” populations, and therefore they too must wait until after the school evacuation is complete. *Id.* It is again unclear how this group could shelter-in-place while awaiting transportation, and whether or how an up-to-date list of the

location of non-institutionalized mobility-impaired individuals would be maintained. Once again Mr. Filler concludes that the Rockland County Emergency Plan expressly recognizes that there is a likelihood that environmental justice populations, including those who are medically unable to be evacuated, in nursing homes, or incarcerated will be treated disparately by being sheltered-in-place when they should be evacuated and are likely to be exposed to rem limits far in excess of those to which the evacuated population would be exposed. Ex. CLE000009 at A4. In addition, while there is an understanding that there are segments of the population who will need to be evacuated because they do not have their own private transport (presumably largely for economic or health related reasons), it is unclear whether there are adequate resources to evacuate these populations or how they will be sheltered-in-place while awaiting transport. *Id.*

IV. Much Additional Testimony Shows That the FSEIS Analysis of EJ Issues Failed to Assess Impacts That Disproportionately Affect EJ Populations

The testimony of Clearwater witnesses shows that the impacts that fall disproportionately upon EJ populations are not limited to those identifiable from the emergency plans. This Section briefly summarizes the testimony of Clearwater witnesses for prisoners, pre-schools, nursing homes, hospitals, and minority and low-income residents in the region who lack access to private transportation. To determine the potential impact on individuals within each identified EJ population, Clearwater has taken the approach of looking in depth at a few representative facilities, then showing that there a considerable number of similar facilities. Exhibit CLE000032 provides a partial inventory of potential EJ institutions within 50 miles of Indian Point and includes the distance of each identified institution from the plant. This is not intended to be a comprehensive approach to assessing potential EJ impacts, but illustrates how the Staff could have approached assessment of EJ issues, including identification of potential EJ populations.

A. Potential Impacts on Prisoners

Dr. Michael Edelstein (in Exs. CLE000003 & CLE000012) and Anthony Papa (in Ex. CLE000004), discuss issues related to prison populations, largely by an in-depth analysis of the potential for disproportionate impacts on inmates in Sing Sing prison, which is less than 10 miles from Indian Point. In addition, Manna Jo Greene (in Ex. CLE000010) discusses findings regarding Rockland County jail, which Michael Edelstein comments upon in Ex. CLE000003. The testimony shows that:

- i. Although Sing Sing is contains EJ population with characteristics that are quite distinct from the general population, the FSEIS does not address potential impacts on prisoners at all. Exs. CLE000003 at A8; CLE000012 at 4-5;12-13.
- ii. There appears to be no plan in existence for the evacuation of Sing Sing. Ex. CLE000003 at Q9.
- iii. Prisoners would remain at Sing Sing while the general population is being evacuated, leading to them receiving a greater dose than the general population and potentially being subjected to violence from other prisoners or guards. *Id.* at Q11; CE000004 at A14;
- iv. Sing Sing is a very old building that is not very suitable for shelter-in-place. Exs. CLE000003 at Q11; CLE000004 at A13.
- v. When shelter-in-place was used during hurricane Katrina it resulted in horrendous conditions for prisoners, loss of control, violence by guards upon prisoners, and a perception that prisoners were being left to die, resulting in desperate measures to escape. Ex. CLE000012 at 8-10.

- vi. When prison evacuation was attempted during hurricane Katrina it resulted in a chaotic violent situation during the evacuation and much unchecked prisoner-on-prisoner violence and sexual abuse at receiving facilities. *Id.* at 10-11.
- vii. Lack of evacuation planning and difficulties of sheltering-in-place could lead to a repeat of the problems that were seen during hurricane Katrina. *Id.* at 19; 21-23.
- viii. Sing Sing lies south of Indian Point close to the Hudson River, which is one of likely routes that would be taken by a plume of radioactivity during the night. *Id.* at 16.
- ix. Applying federal guidelines, during an accident Sing Sing prisoners could be exposed to radiation levels that are 10 times greater than those permitted for the general public. *Id.* at 21.
- x. Prisoners in Sing Sing have not been officially briefed about Indian Point, but many are aware of it. They feel that selective shelter-in-place is discriminatory, such sheltering would not be protective (in part because the building can't be sealed), and evacuation would be extremely difficult. *Id.* at 26-28; CLE000004 at A9 to A15.
- xi. Sheltering-in-place may not be effective due to the need to maintain a reasonable temperature range in the prison and other factors, no study has been done to determine how effective sheltering-in-place could be. CLE000012 at 28-32; 35-36.
- xii. Experiences with a minor fire at Sing Sing show that there are serious problems with correction officer responses to emergency events. *Id.* at 34-35.
- xiii. Evacuation of Sing Sing would be difficult even if well-planned, but could be disastrous if no plan has been made or the evacuation proceeds slowly. *Id.* at 36-39; CLE000004 at A10 to A11, A16.

- xiv. Rockland County jail also houses an EJ population that could experience similar or worse problems than the Sing Sing population. Unlike Sing Sing, no potassium iodide pills are stored on-site and the staff were not aware of the need to administer potassium iodide in an emergency. Ex. CLE000003 at A16.
- xv. Westchester County Jail is its own census block and holds approximately 1,300 people of which approximately 77% are from minority groups. Ex. CLE000038.
- xvi. Other prisons in the area also need to be assessed in the FSEIS. Ex. CLE000003 at A17.
- xvii. Some former inmates of Sing Sing have made exceptionally valuable contributions to society, but during their incarceration inmates are vulnerable and should be treated with dignity and respect. Ex. CLE000004 at A4 to A8, A16. Lack of planning could lead to multiple tragedies in terms of violence among prisoners and guards. *Id.* at A16.

B. Potential Impacts on Nursing-home Residents

John Simms, an 88 year old resident of a nursing home within 5 miles of Indian Point provides testimony regarding his observations as a nursing home resident. Ex. CLE000006 at A1 to A3. In addition, Manna Jo Greene (in Ex. CLE000010) summarizes the findings of Clearwater researchers regarding nursing homes in the area. They show:

- i. Of the 90 residents in Spingvale Inn, where Mr. Simms lives, only 10 to 15% are ambulatory. In addition, poor vision, hearing, and mental disabilities are a problem. Ex. CLE000006 at A5 to A6.
- ii. The nursing home has never discussed procedures for a radiological emergency with Mr. Simms. *Id.* at A12 to A13.
- iii. Very few residents have personal vehicles so they would be reliant on other transportation. *Id.* at A14.

- iv. Many nursing home residents are low-income, living off government benefits. The homes are often multi-storied and would be difficult to evacuate. CLE000010 at A65.
- v. Some nursing homes are majority minority. *Id.* at A77.
- vi. Most nursing home residents are dependent on buses, but most homes do not have their own buses to transport residents. *E.g. Id.* at A62.
- vii. Depending upon the type of facility many residents are mobility impaired or have some mental impairment that would make evacuation difficult. *E.g. Id.* at A55, A58, A65.

C. Potential Impacts on Hispanic Residents

Dolores Guardado provides testimony regarding potential impacts on Hispanic residents who live in Peekskill, N.Y., close to the Indian Point plant. Ex. CLE000008 at A1 to A4. Like many Hispanic residents she speaks primarily Spanish and has limited ability to understand English. *Id.* at A5 to A6. Although she works as a home health aide for a low-income Hispanic woman, she is not familiar with how to obtain or administer potassium iodide in case of an emergency. *Id.* at A9 to A10. She had also never seen an evacuation plan prior to being questioned by Clearwater about the subject. *Id.* at A11. The limited ability of many Hispanic residents to speak English would impair their ability to understand instructions regarding evacuation, bus provision, and family reunification. *Id.* at A13 to A15. Most Hispanic residents have limited access to private vehicles and many would need to rely on public transport during an emergency. *Id.* at A16. She has concerns about whether there would be sufficient buses and also how elderly family members could get to the bus stop. *Id.* It would be unfair if those without private cars are left to wait by the roadside watching others leave driving their cars. *Id.* at A17.

D. Potential Impacts on Transport Dependent Non-Institutional Residents

Aaron Mair, a former resident of Peekskill N.Y, and experienced environmental justice organizer, has provided testimony on the potential impacts of license renewal upon public-transport dependent populations within 50 miles of Indian Point and upon residents of Peekskill.

Ex. CLE000007. Mr. Mair states that:

- i. The population of Peekskill is both low-income and majority-minority. *Id.* at A6 to A7.
- ii. The FSEIS fails to offer any meaningful support for its assertion that disproportionate impacts would not be caused by the relicensing of Indian Point. *Id.* at A9 to A10.
- iii. The FSEIS fails to analyze car ownership in areas within 50 miles of Indian Point, despite studies showing that 68% of the urban poor in New York City do not have access to private cars. *Id.* at A12.
- iv. During Katrina those without car access were disproportionately affected and studies indicate that the same could occur in the case of an emergency at Indian Point. *Id.*
- v. A disproportionate number of minority and low-income residents close to Indian Point do not have cars. *Id.*
- vi. Peekskill has very limited road access with no nearby bridges. *Id.* at A13.
- vii. Even Entergy's director of emergency planning has acknowledged that neither he nor federal regulators knew whether there could ever be a feasible evacuation plan for New York City. *Id.* at A 16.

- viii. There are millions of people in EJ communities in New York City within 50 miles of Indian Point, who would find it extremely difficult to evacuate. *Id.*
- ix. The need to plan for evacuation of these communities is now more urgent than ever in the light of the Fukushima disaster. *Id.*
- x. Most people using the bus system in Westchester are members of minority groups, 62% of bus riders do not possess a car, and 47% earned less than \$25,000 per year. Ex. CLE000034.
- xi. The emergency bus routes out of Peekskill only lead eastwards, making it impossible for transit-dependent residents to escape a plume that is heading east. Ex. CLE000039.

E. Potential Impacts on Immobile Hospital Patients

In exhibit CLE000005, Dr. Erik Larsen, an emergency room physician who works at a hospital in White Plains, provides testimony regarding the impact of an emergency on hospitals. He states that the capacity to treat patients exposed to radiation is severely limited. Ex. CLE000005 at A4. Transporting non-ambulatory patients would also be extremely challenging. *Id.* at A7. He does not believe hospitals in the area have received adequate support to plan for evacuation of non-ambulatory patients. *Id.* at A7, A9.

F. Potential Impacts on Pre-school Children

Clearwater researchers visited a number of head start programs and private day care facilities. CLE000010 at A11. Most of the facilities were located in Potential Environmental Justice Areas, and/or served low-income populations. *Id.* The Head Start Programs were well prepared with potassium iodide on hand to administer to children in case of an emergency. *Id.* Many of the families using Head Start were Spanish-speaking and had limited English proficiency, which

could make following evacuation directions more difficult. *Id.* In contrast, the private day care facilities did not have potassium iodide on hand and most planned to call parents to pick up children in case of an emergency. *E.g. id.* at A24, A26. After the interviews some of these facilities obtained potassium iodide. *Id.* at A36.

V. The FSEIS Lacks Any Consideration of Feasible Mitigation Measures to Reduce EJ Impact

Feasible mitigation measures are addressed by the testimony of most of Clearwater's witnesses. Michael Edelstein has many suggestions to improve capacity to both shelter-in-place and evacuate at Sing Sing. Ex. CLE000012 at 30-32, 40-48. Suggestions range from improving hardware, such as adding a back-up generator to run critical systems and providing dose measurement equipment on-site, to improving human response by doing regular training of both staff and inmates for both shelter-in-place and evacuation scenarios. *Id.* These measures could also be applied to other prisons in the area, such as the country jails of Westchester and Rockland.

Anthony Papa points out that taking account of the potential for a human tragedy at Sing Sing during a severe accident could change the calculus on whether to improve the safety of Indian Point. CLE000004 at A17. He suggests that the plant should at minimum be made as safe as possible to reduce the chance of such a tragedy. *Id.* He also suggests ensuring that windows close and that ventilation can be provided through a filtered system would greatly improve the ability to shelter-in-place. *Id.* He states that planning for evacuation at Sing Sing is imperative and finds it incomprehensible that to date the authorities have apparently planned for the evacuation of the general population by not for the evacuation of Sing Sing. *Id.* at A16. He also suggests that Indian Point could be closed or Sing Sing relocated. *Id.* at A17.

Dolores Guardado states that there should be special focus on the distinct needs of the Spanish community. Ex. CLE000008 at A18. This should include evacuation drills and education in Spanish. *Id.* Dr. Erik Larsen believes hospitals need more resources to provide for evacuation of non-ambulatory patients and Indian Point should be made as safe as possible to minimize the risk of a severe accident. Ex. CLE000005 at A9. Finally, Clearwater's research has shown that private day-care facilities are not well prepared for a nuclear accident with few having potassium iodide on hand or workable evacuation plans. Outreach to these facilities could help protect pre-school children from the effects of radiation.

In summary, this testimony makes clear that there are many feasible mitigation measures that the FSEIS has not even considered because it failed to identify any impacts that fall disproportionately on environmental justice populations. This failure could lead to unnecessary injury and even loss of life if a severe accident occurred at Indian Point. The Fukushima disaster makes it plain that we must plan effectively for accidents even if they are unlikely. Therefore, the failure of the NRC to take environmental justice concerns seriously in the FSEIS cannot be condoned by this Board.

CONCLUSION

As shown in the briefing above, and in the pre-filed testimony and other exhibits accompanying this statement, the FSEIS fails to provide the site-specific analysis of the potential for the relicensing of Indian Point to cause disproportionate impacts on local EJ populations that is required by NEPA. Therefore, the relicensing of Indian Point cannot proceed unless and until the NRC Staff amends the FSEIS to include the required analysis through the appropriate NEPA process.

Respectfully submitted,

/s

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